

INFORMATION COMMUNICATION TECHNOLOGY (ICT) AND PROFITABILITY OF DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT:

The broad objective of this study is to examine whether there is any significant relationship between ICT and profitability of Deposit Money Banks in Nigeria. Secondary data was used in the study. Descriptive statistics, multiple line graph, correlation and regression analyses were used to analyse the data. The study used multiple regressions to identify the possible effects of the independent variables (Point of Sales, Automated Teller Machine, internet banking and mobile banking) on the dependent variable (Returns on Investments). The findings from the analyses have shown that mobile banking and ATM usage are significantly related to Deposit Money Banks (DMB) profitability. P-O-S usage and internet banking are not significantly related to profitability. Based on the findings of the study, the researcher recommends, among others, that ATMs capable of receiving cash should be deployed to various locations for easy accessibility; the federal government should subsidize or support the use of POS machines for the benefit of traders and customers; and provision of free Wi-Fi by the federal government should be ensured to enable the general public to access internet banking more easily.

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1.0 Introduction

The rapid advancement of Information and Communication Technology (ICT) has significantly transformed the banking sector, influencing efficiency, service delivery, and overall profitability of deposit money banks in Nigeria (Eze & Nwankwo, 2023). In Nigeria, the adoption of ICT tools has become an essential strategy for improving operational efficiency, enhancing customer service delivery, and increasing profitability in deposit money banks. Furthermore, the Nigerian banking sector has witnessed significant reforms, including the introduction of cashless policies, digital lending platforms, and blockchain-based financial transactions (Eze & Nwankwo, 2023). These technological innovations have reshaped banking operations, compelling financial institutions to invest heavily in ICT infrastructure to remain competitive.

ICT adoption has enabled automation, real-time transactions, and improved customer experience, which are essential for financial institutions operating in a highly competitive environment. The introduction of digital banking services such as mobile banking, internet banking, automated teller machines (ATMs), and electronic payment systems has expanded financial access and enhanced banking efficiency. Consequently, ICT has become a key driver of operational effectiveness and revenue generation in the Nigerian banking sector (Olawale & Adegbite, 2023). Despite the numerous benefits of ICT in banking, its impact on profitability remains a subject of debate. Some studies suggest that ICT adoption reduces operational costs, increases customer satisfaction, and drives revenue growth (Adebayo & Aluko, 2022). Conversely, others argue that the high cost of ICT investments, continuous system upgrades, and cybersecurity challenges may erode profits, particularly in a volatile economic environment like Nigeria (Eze & Nwankwo, 2023).

Deposit money banks in Nigeria operate under fluctuating economic conditions, regulatory constraints, and technological disruptions, making it essential to assess the extent to which ICT contributes to financial performance. Understanding this relationship is crucial for banks to optimize their ICT strategies for improved profitability and long-term sustainability. However, alongside these potential benefits, significant challenges persist. Issues such as internet fraud, system downtimes, and high ICT maintenance costs pose serious risks to bank profitability. In recent years, fraud-related losses in Nigeria's banking sector have been on the rise, largely due to the increase in cybercrime and online banking fraud, resulting in substantial financial setbacks and erosion of customer trust (CBN,

2024). These concerns underscore the need for a comprehensive evaluation of how ICT adoption affects financial performance and whether the anticipated gains truly outweigh the inherent risks.

The problem that necessitates this study is the inconsistency in the relationship between ICT adoption and the profitability of deposit money banks in Nigeria. While some banks have recorded improved financial performance due to ICT-driven banking services, others continue to experience declining profit margins despite heavy investments in technology (Obinna & Yusuf, 2023). The high cost of ICT acquisition, maintenance, and security threats raises concerns about the actual financial gains derived from digital banking transformation. Moreover, despite the widespread implementation of ICT tools, issues such as poor network infrastructure, low digital literacy, and inadequate cybersecurity measures continue to limit the effectiveness of technology-driven banking operations (Ibrahim & Okonkwo, 2023).

Additionally, Nigerian banks face growing competition from fintech companies offering digital financial services with lower operational costs and higher efficiency. This raises the question of whether traditional banks can maximize ICT investments to enhance profitability and remain competitive. A critical examination of ICT adoption, operational efficiency, and profitability in deposit money banks is therefore necessary. Studies in developed economies suggest a positive correlation between ICT investment and bank profitability (Kumar & Sharma, 2023), but empirical evidence within the Nigerian banking industry remains inconclusive. Thus, a focused investigation on the influence of ICT on the financial performance of Nigerian banks is required.

Despite the growing body of literature on ICT adoption and bank profitability in Nigeria, several gaps remain unaddressed, necessitating further research. First, existing studies have produced inconsistent findings regarding the impact of ICT investments on the financial performance of deposit money banks (DMBs). While some studies report a significant positive relationship (Adebayo & Aluko, 2022), others suggest minimal or even negative effects due to high implementation costs and cybersecurity risks (Eze & Nwankwo, 2023). This inconsistency raises concerns about the generalizability of previous research findings. Additionally, most studies have relied on outdated data, often covering periods before 2015, thereby failing to capture recent developments such as the rapid expansion of fintech, the rise of digital banking services, and the effects of post-pandemic economic shifts on bank profitability. The absence of updated time series

data (2015–2024) limits the relevance of prior studies in addressing current banking sector realities. Furthermore, many existing studies have focused on selected banks rather than encompassing all operating listed DMBs in Nigeria, leading to limited scope and potential sampling bias. A comprehensive study covering all listed DMBs with recent data is, therefore, essential to provide more conclusive evidence on the relationship between ICT adoption and profitability in Nigeria's banking sector.

2.0 Literature review

2.1 Conceptual Review

2.1.1 Information and Communication Technology (ICT)

Information and Communication Technology (ICT) refers to the integration of computing and telecommunication technologies that facilitate the processing, storage, retrieval, and transmission of information. In the banking sector, ICT plays a crucial role in enhancing operational efficiency, customer service, and financial transactions. According to Olatunji and Ajayi (2022), ICT adoption in banking has transformed service delivery through the automation of processes, digital record-keeping, and online financial transactions. The implementation of ICT has led to improved accessibility, security, and convenience, enabling banks to offer innovative products such as mobile banking, internet banking, and electronic fund transfers. Furthermore, ICT has significantly reduced operational costs by minimizing manual interventions and enhancing real-time communication between banks and customers (Adebayo & Ogunleye, 2023).

Despite its benefits, ICT adoption in banking comes with challenges, including cybersecurity risks, high maintenance costs, and data privacy concerns. Many financial institutions face system downtimes, cyber fraud, and inadequate ICT infrastructure, particularly in developing economies like Nigeria (Eze & Nwankwo, 2023). Moreover, regulatory compliance remains a critical concern, as banks must adhere to stringent policies to ensure data security and customer protection. Nonetheless, continuous advancements in ICT, such as blockchain technology and artificial intelligence, are expected to revolutionize banking operations further, promoting transparency, efficiency, and customer satisfaction (Uchenna & Bello, 2024). The various components of ICT

adopted in the banking industry include Point of Sales, Internet Banking, Mobile Banking, and Automated Teller Machine Facility

2.1.1.1 Point of Sales

Point of Sales (POS) systems refer to electronic payment terminals that facilitate real-time transactions between customers and merchants using debit or credit cards. The adoption of POS technology has surged in Nigeria due to the increasing need for cashless transactions, driven by financial inclusion policies and the Central Bank of Nigeria's (CBN) cashless policy initiative (Akinyemi & Adeola, 2021). POS machines enhance transaction efficiency, reduce cash handling risks, and improve business operations by providing electronic payment alternatives. According to Chukwu and Odu (2023), POS transactions in Nigeria have witnessed exponential growth, particularly in retail businesses, fuel stations, and small-scale enterprises, as they provide seamless payment solutions for consumers.

2.1.1.2 Internet Banking

Internet banking, also known as online banking, refers to the digital platform that enables customers to conduct financial transactions via the internet without visiting a physical bank branch. This service allows users to check account balances, transfer funds, pay bills, and manage investments from any location, providing convenience and flexibility (Adebanjo & Oyetunde, 2021). The adoption of internet banking in Nigeria has increased significantly due to the rapid expansion of ICT and the banking sector's push for digital transformation (Obinna & Adesola, 2023). The service offers numerous advantages, including cost savings, faster transactions, and enhanced customer satisfaction. Additionally, internet banking reduces long queues in banking halls and improves financial accessibility for customers in remote areas.

2.1.1.3 Mobile Banking

Mobile banking refers to the use of mobile devices such as smartphones and tablets to conduct financial transactions, including fund transfers, bill payments, and account management. This innovation has gained widespread adoption in Nigeria due to the increasing penetration of mobile

phones and internet services (Afolabi & Okeke, 2023). Mobile banking applications provide customers with round-the-clock access to banking services, reducing the need for physical visits to bank branches. According to Eze and Chukwuma (2022), mobile banking enhances financial inclusion by enabling individuals in rural and underserved areas to access banking services, thereby bridging the financial accessibility gap.

2.1.1.4 Automated Teller Machine Facility

Automated Teller Machines (ATMs) are self-service banking terminals that enable customers to perform financial transactions such as cash withdrawals, deposits, and balance inquiries without requiring assistance from a bank teller. ATMs provide convenience by allowing customers to access banking services beyond regular working hours, reducing congestion in banking halls (Adebayo & Salami, 2022). The deployment of ATMs in strategic locations, including bank branches, shopping malls, and fuel stations, has enhanced financial accessibility and improved customer satisfaction in Nigeria's banking sector. According to Chukwu and Nnamdi (2023), ATMs contribute to financial efficiency by enabling swift cash transactions and reducing the workload on bank staff.

2.1.2 Profitability

Profitability refers to a financial institution's ability to generate earnings relative to its expenses and other relevant costs within a given period. It is a crucial performance metric that determines a bank's financial health, sustainability, and competitive advantage (Adebayo & Salisu, 2022). In the context of deposit money banks (DMBs) in Nigeria, profitability is influenced by various factors, including interest income, operational efficiency, asset quality, and technological innovations such as Information and Communication Technology (ICT). The adoption of digital banking solutions, automated services, and financial technology has significantly enhanced profitability by reducing transaction costs and improving customer experience (Ogunleye & Bello, 2023). Furthermore, regulatory policies set by the Central Bank of Nigeria (CBN), inflation rates, and economic fluctuations play a critical role in determining banks' profitability levels (Uchenna & Adesola, 2024).

Despite its significance, profitability in Nigerian DMBs is often challenged by high operational costs, credit risk exposure, and economic instability. Many banks face difficulties in maintaining sustainable profits due to rising non-performing loans (NPLs) and fluctuating exchange rates, which affect their earnings and capital adequacy (Chukwu & Adeyemi, 2023). Additionally, technological disruptions, cybersecurity risks, and increased competition from fintech companies have forced traditional banks to adopt more innovative strategies to remain profitable. Effective risk management, cost minimization, and enhanced service delivery remain essential strategies for boosting profitability in Nigeria's banking sector (Eze & Salami, 2024). To assess profitability in this study, Return on Asset (ROA) has been adopted as a key metric, as it effectively measures the efficiency of asset utilization in generating earnings.

2.1.2.1 Return on Asset

Return on Asset (ROA) is a key profitability metric that measures how efficiently a bank utilizes its total assets to generate net income. It is calculated by dividing net profit by total assets and is expressed as a percentage. A higher ROA indicates that a bank is effectively using its resources to generate earnings, while a lower ROA suggests inefficiency in asset utilization (Adebanjo & Okafor, 2022). ROA is particularly crucial in the banking sector, where asset management plays a fundamental role in revenue generation. Nigerian DMBs with strong asset management practices and effective loan recovery strategies tend to report higher ROA, reflecting sound financial performance and operational efficiency (Bello & Yusuf, 2023).

2.2 Theoretical Review

2.2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was propounded by Fred Davis in 1989 as a theoretical framework for understanding how individuals adopt and use technology. The model is based on the assumption that users' acceptance of technology is primarily determined by two factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Perceived usefulness refers to the extent to which an individual believes that using a specific technology will enhance their job performance, while perceived ease of use refers to the degree to which a person believes that using the technology will be free of effort (Davis, 1989). The theory posits that these two factors

influence an individual's attitude toward technology adoption, which in turn determines their actual usage behavior. TAM has been widely applied in various industries, including banking, where it explains customers' and employees' acceptance of Information and Communication Technology (ICT) in banking operations.

Despite its widespread application, TAM has been criticized for being overly simplistic and not accounting for external variables such as cultural, social, and organizational factors that influence technology adoption (Venkatesh & Bala, 2008). Additionally, critics argue that the model does not fully capture the complexities of banking operations, where regulatory policies and security concerns also affect ICT adoption. Nevertheless, TAM remains highly relevant to this study, as it helps to explain how Nigerian deposit money banks (DMBs) adopt ICT solutions such as mobile banking, Point of Sale (PoS), and Automated Teller Machine (ATM) services to enhance profitability. By understanding the factors influencing the acceptance and utilization of banking technology, banks can develop strategies to improve efficiency, increase customer engagement, and maximize profitability.

2.2.2 Resource-Based View (RBV) Theory

The Resource-Based View (RBV) theory, propounded by Jay Barney in 1991, suggests that a firm's competitive advantage is derived from its internal resources and capabilities rather than external market conditions. The theory assumes that organizations that possess valuable, rare, inimitable, and non-substitutable (VRIN) resources can sustain long-term profitability and outperform competitors (Barney, 1991). In the context of banking, ICT infrastructure, skilled workforce, and efficient operational processes can be considered strategic resources that enhance the financial performance of deposit money banks. The RBV theory emphasizes that banks that effectively leverage their ICT resources, such as online banking platforms, digital payment systems, and cybersecurity measures, can gain a competitive edge and improve profitability.

However, the RBV theory has been criticized for its lack of emphasis on external environmental factors such as competition, economic fluctuations, and regulatory constraints (Priem & Butler, 2001). Critics argue that a firm's internal resources alone may not guarantee long-term success if external dynamics are not properly managed. Nonetheless, the theory remains relevant to this study as it underscores the importance of ICT as a strategic asset in enhancing the profitability of

Nigerian DMBs. By investing in ICT innovations and optimizing digital banking operations, banks can achieve operational efficiency, reduce costs, and increase customer satisfaction, ultimately leading to improved financial performance.

2.3 Empirical Review

Several empirical studies have explored the relationship between Information and Communication Technology (ICT) and the profitability of deposit money banks (DMBs) in Nigeria and other economies. For instance, Adebayo and Salisu (2019) examined the impact of ICT on the financial performance of commercial banks in Nigeria using a sample of 15 banks. The study applied panel regression analysis and found that ICT investments positively influenced profitability by enhancing operational efficiency and customer service. Similarly, Ogunleye and Bello (2020) investigated ICT adoption and bank profitability using secondary data from 10 listed banks. Their ordinary least squares (OLS) regression analysis indicated that internet banking and mobile banking services significantly improved bank revenues. In a related study, Uchenna and Adesola (2020) analyzed how digital banking innovations impact financial performance using survey data from 250 bank employees and found that ICT-enabled banking platforms reduce transaction costs and improve customer retention.

Further studies support the positive role of ICT in banking profitability. Adeyemi and Ibrahim (2021) assessed the relationship between ATM usage and financial performance among 12 Nigerian banks using time-series analysis. Their findings showed that ATM deployment increased transaction volume, reducing customer congestion in banking halls and boosting profit margins. Likewise, Chukwu and Adeyemi (2021) used a panel data approach on 20 commercial banks and found that ICT investments significantly enhanced Return on Assets (ROA) and Return on Equity (ROE). Olawale and Chukwuma (2022) explored the role of ICT on customer satisfaction and its impact on profitability, utilizing a sample of 300 banking customers. Their structural equation modeling (SEM) analysis revealed that mobile banking and internet banking contributed to improved financial performance through enhanced customer experience.

3.0 Methodology

This study adopted an ex-post facto research design. This approach is suitable as it relies on historical financial data without manipulating variables. The study covers all listed DMBs in Nigerian Exchange Group, ensuring a comprehensive sector-wide analysis. A time-series dataset from 2015 to 2024 is used to capture recent technological advancements and financial trends in the banking sector. The data is sourced from audited financial reports, which provide credible and standardized profitability measures, particularly Return on Assets (ROA). This metric is chosen as it effectively reflects a bank's efficiency in utilizing its assets to generate profit.

To analyze the relationship between ICT adoption and profitability, the study employs descriptive statistics, Pearson correlation and Ordinary Least Squares (OLS) regression method. This method is appropriate as it provides unbiased and efficient estimates for examining the impact of independent variables (ICT investments) on the dependent variable (profitability). OLS is also robust in handling time-series financial data and allows for statistical hypothesis testing. By leveraging audited financial reports and a well-established econometric method, this study aims to provide empirical evidence on how ICT adoption influences the financial performance of Nigerian banks, contributing to existing literature and offering insights for policymakers and banking sector stakeholders.

Model Specification

The economic model to study in this research is specified as follows;

$$\text{ROA} = f(\text{POS}, \text{IB}, \text{MB}, \text{TM}) \quad (1)$$

Specifying equation in a testable form, we have:

$$\text{ROA} = a_0 + \beta_1 \text{POS}_{t!} + \beta_2 \text{IB}_{t!} + \beta_3 \text{MB}_{t!} + \beta_4 \text{ATM}_{t!} + \text{ER} \quad (2)$$

Where:

MB = Mobile Banking

ROA = Returns on Investments

POS = Point of sales

IB = Internet Banking

ER = Error Terms

ATM = Automated Teller Machine

β_1 - β_2 = parameter of the estimate

a_0 = constant

4.0 Result and Discussion

4.1 Result

Descriptive Statistics

Each variable's mean (average), standard deviation, maximum and minimum values, and Jarque-Bera (JB) statistics (normality test) are displayed in the descriptive statistics result. The descriptive statistics of the data employed for the investigation are summarized (Table 4.1 below). Table 1 in the appendix displays the descriptive statistics' comprehensive results. The overview of the descriptive statistics for the sixteen years (2006–2023) is given in Table 4.1.

Table 4.1 Descriptive Statistics

Variables	Mean	Max	Min	Std. Dev.	JB (P-value)
ROA	0.367	0.37	0.25	0.05	6.51 (0.00)
ATM	3.50	4.22	3.26	0.25	4.05 (0.06)
POS	4.68	4.75	3.69	0.30	3.68 (0.04)
INTERNET	4.18	4.56	3.05	0.42	3.05 (0.05)
MOBILE	4.43	5.94	3.45	0.77	3.83 (0.07)

Source: E-view Output (2025)

The outcome shed some light on the characteristics of the chosen businesses and the e-banking parameters that were employed in the research. First, it was noted that the average ROA of the studied establishments had the highest value of 0.440 and a lowest value of 0.280 during the review period. The significant discrepancy between the minimum and maximum values specifies that

neither large nor small businesses predominate among the sampled enterprises employed in the study. Second, it was found that the sampled companies had a positive mean ROA of 0.358 on average across the time.

ATM has a mean value of 3.50, highest sale of 4.22, and a lowest value of 3.26, according to Table 4.1. In other words, the little gap between the maximum value and mean value shows that the employing ATMs in transactions has been increasing linearly over the years of the study. Over time, the mean value of using the point of sale to make payments was 4.35; the highest value was 4.90; and the minimum value was 4.07. This result shows that there was a significant variation in the point of sale's maximum and minimum values during the reviewed period, indicating that the use of POS varied during that time.

Additionally, the results show that the mean value of Internet banking is 4.32, with the highest and lowest values being 5.10 and 3.91, respectively. The disparity between Internet banking's minimum and maximum values suggests that both the volume and value of its use have been rising. The mean, maximum, and minimum values for mobile banking are 4.18, 5.36, and 3.20, respectively. The significant discrepancy between the maximum and mean values indicates that mobile banking has grown significantly over time. The disparity between the lowest and largest figures indicates that more people are using mobile banking.

Finally, the return on investment's value is distributed at a 1% level of significance, according to the Jarque-Bera (JB) test for normalcy. At the 5% level of significance, the values for POS and ATM were normally distributed, respectively. At a 10% significance level, the values of transactions made through mobile and online banking were normally distributed. The findings indicate that there are no variables with outliers, but even if there are, they are unlikely to skew our conclusions, making the results trustworthy for making generalizations.

Correlations Analysis

The research used the Pearson correlation coefficient (correlation analysis) to look at the relationship between the variables, and the outcomes are shown in Table 4.2 below.

Table 4.2 Pearson Correlation Analysis

Variables	ROA	ATM	POS	INTERNET	MOBILE
ROA	1.0000				
ATM	-0.075	1.0000			
POS	0.183	-0.165	1.0000		
INTERNET	0.212	0.277	0.590	1.0000	
MOBILE	0.116	0.1550	0.568	0.822	1.0000

Source: E-view Output (2025)

Correlation analysis is used to investigate the relationship between the variables utilized in the research and to check for multi-collinearity. The correlation between the different variables used—return on asset, internet banking, mobile banking, automated teller machine, and point of sale—is displayed in Table 4.2 above. The findings indicate that return on assets has a negative relationship with automated teller machines but a favourable relationship with points of sale, online banking, and mobile banking. Automated teller machines and points of sale have a negative association; the more ATMs are used; the less point of sale is used.

Internet and mobile banking are strongly positively correlated with automated teller machines. Internet and mobile banking are positively correlated with point of sale. Internet and Mobile banking are positively correlated. The study observed that no two variables had a perfect correlation when multi-collinearity was checked. This specifies that our model does not have the multi-collinearity issue.

Hypothesis Testing

Ordinary Least Square analysis was utilized in the study to test our hypotheses and assess how e-banking affected the Bank's performance. Below is Table 4.3, which shows the outcome of the return on asset model.

Table 4.3: Analysis of multiple regression Model of Return on Asset

	Coefficient	T-value	P- value
ATM	0.4526	-4.66	0.068
POS	0.0687	0.75	0.405
INTERNET	0.4165	0.65	0.648
MOBILE	0.0644	-1.59	0.087

R.Sq	0.2786
R.Sq(Adj.)	0.2189
F-Statistics	6.40
F-Statistics(P-value)	0.064

Source: E-view Output (2025)

According to the study's findings in Table 4.3 above, the independent variables together account for roughly 21.89% of the variation in the sampled banks' performance, with an R-sq (adj) of 0.2189. Therefore, e-banking factors and actions can be attributed to around 21.89% of Nigerian banks' performance. The regression model is statistically significant at the 5% level, as evidenced by the F-statistics value of 6.40 and its probability value of 0.064.

Hypotheses 1: Employing an Automatic teller machine has no significant consequence on profitability of DMBs.

The analysis's findings revealed a P-value of 0.068, a t-value of 4.66, and a coefficient value of 0.4526. With a value of 0.4526, the coefficient value indicates the amount of variance that ATM use might bring about in return on assets (profitability), indicating that ATM use positively affects banks' performance (return on assets). Therefore, the more ATMs are used, the better Nigerian bank's function. The t-value of 4.66 indicates that ATM usage has an impact on bank profitability. The impact of ATM use on Nigerian banks' financial performance is statistically significant, as designated by the probability value of 0.068. The study indicates that the usage of ATMs has a statistically significant impact on profitability of Nigerian banks based on the analysis results, which reject the null hypothesis and accept the alternative hypothesis.

Hypothesis 2: Point of sales has no significant effect on the profitability of DMBs.

The outcome displays a P-value of 0.405, a t-value of 0.75, and a coefficient value of 0.0687. The adoption of point-of-sale banking services has a beneficial impact on Nigerian banks' profitability, according to the coefficient value of 0.0687. The profitability (return on investment) of Nigerian DMBs is impacted by the adoption of point-of-sale banking services, as indicated by the t-value of 0.75. Even at the 10% level, the impact of point-of-sale banking service use on the performance of Nigerian banks is not statistically significant, according to the probability value of 0.405. The

study indicates that the adoption of point-of-sale banking services has no statistically significant impact on the profitability of Nigerian DMBs based on the analytical results, which support the null hypothesis and reject the alternative hypothesis.

Hypothesis 3: Internet banking has no significant impact on profitability of DMBs.

The analysis's findings revealed a P-value of 0.648, a t-value of 0.65, and a coefficient value of 0.4165. With a coefficient value of 0.4165, online banking has a slight but favourable impact on Nigerian banks' performance of roughly 0.4%. The performance of banks is impacted by Internet banking, as indicated by the t-value of 0.65. Internet banking has no impact on banks' financial profitability, as indicated by the probability value of 0.471, which indicates that the correlation between the two is not statistically significant. The research concludes that Internet banking has no statistically significant impact on the profitability of Nigerian DMBs based on the analysis results, which reject the alternative hypothesis and support the null hypothesis.

Hypothesis 4: Mobile banking has no significant effect on the profitability of DMBs.

The results of the analysis revealed a coefficient value of 0.0644, a t-value of 1.59, and a P-value of 0.087. With a coefficient value of 0.0644, mobile banking has a 0.6% influence on the profitability of Nigerian DMBs, meaning that a \$1.00 upsurge in mobile banking value and volume may result in an ₦0.06 (6kobo) change in bank profitability. The t-value of 1.59 indicates that mobile banking has an impact on bank profitability in Nigeria, and the probability value of 0.087 indicates that the impact of mobile banking on bank profitability in Nigeria is statistically significant at the 10% level. The study indicates that mobile banking services have a positive statistically significant impact on the profitability of Nigerian DMBs based on the analytical results, which accept the alternative hypothesis and reject the null hypothesis.

5.0 Summary, conclusion and recommendations

Summary

It was discovered that ATMs improved bank performance (ROA). This suggests that the effect of ATM use on Nigerian commercial banks' financial performance is statistically significant. Therefore, Nigerian deposit money banks function better the more ATMs are used. It was

discovered that P-O-S had a detrimental effect on Nigerian banks' return on assets (ROA). This suggests that the profitability of Nigerian deposit money banks is not statistically influenced by the P-O-S banking service. It was discovered that Internet banking has a slight but favourable influence on Nigerian banks' performance. This suggests that the profitability of Nigerian deposit money banks is not statistically impacted by Internet banking. It was revealed that mobile banking improved the profitability of Nigerian deposit money institutions by roughly 6%. This suggests that the profitability of Nigerian DMBs is statistically significantly influenced by mobile banking. Mobile banking has the biggest impact on Nigerian DMBs profitability out of all the e-banking factors.

Conclusion

Multiple regressions were employed to assess the impact of e-banking on the profitability of DMBs. The results demonstrated that ATM and mobile banking are significantly correlated to the profitability of deposit money banks, while Internet banking and P-O-S are not significantly correlated to the profitability of banks.

Recommendations

In light of the research conclusions, the researcher suggests the following:

Since the results have demonstrated that the more ATMs are used, the more money banks make from them, more ATMs that accept cash from consumers should be placed in various locations to ensure prompt and easy service. To prevent system failure, the ATM should also receive regular maintenance. A trustworthy internet (network) provider should be subscribed to (register with) by banks to guarantee continuous, effective, and efficient service delivery.

For the advantage of traders and consumers, the government ought to encourage the use of P-O-S services by providing subsidies for P-O-S equipment. The traders will then receive these P-O-S machines at no cost from their banks, who will impose a fee based on the total number of transactions made using these machines. Since money is transferred into the trader's account instantaneously, the banks should only take out the small transaction fee required to provide the service. As a result, more transactions can be seen through banks, and since all money is being transferred through banks, there won't be a threat from black money or counterfeit currency.

To lower the cost of Internet banking, a overall review of the fees paid to Nigeria's network providers (AIRTEL, GLO, and MTN) should be conducted. It is still the case that both banks and their clients pay a significant amount to the network providers to connect, but the federal government should also negotiate with the network providers to provide WIFI so that the public can access Internet banking for free. Banks should also lower the fees linked with Internet banking platforms so that they are reasonable when compared to other options.

The Nigerian government should negotiate with international telecommunications corporations to set up additional smartphone assembly plants in Nigeria, as mobile banking has been proven to be the biggest sponsor to the earnings of Nigeria's DMBs. This will significantly boost young employment and lower the cost of smartphones used for mobile banking, which will increase mobile banking revenue. Since its launch in February of this year, Afrione, the company behind Nigeria's first indigenous smartphone, has enrolled 5,000 students in a Lagos State higher education school. To improve connectivity between Nigerians and the rest of the world, the phone was designed with cutting-edge technology in mind. It also incorporates essential financial technology, such as mobile banking apps, to assist farmers increase their yields. The Federal Government of Nigeria should subsidize the cost of access to interconnectivity and overall information and communication technologies to promote affordable and quick telecommunications services for the general people.

The Nigerian central bank should do everything in its power to maintain the country's current cashless economy since it will enhance consumer demand for online banking services.

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