
Assessment of Electronic Banking Services Influence on Corporate financial performance of Selected Deposit Commercial Banks in Nigeria

* Ahmadu Aminu Hamidu

*Department of Banking & Finance, Modibbo Adama University Yola,
Adamawa State, Nigeria.*

*Corresponding Email Address: aahamidu98@gmail.com

Abstract

The emergence of electronic banking services has brought about significant changes in the global financial industry, including Nigeria. Services like internet banking, mobile banking, and automated teller machines have become essential components of modern banking, offering enhanced accessibility, speed, and security for both customers and banks. This study examined the impact of e-banking services on the corporate financial performance of selected deposit money banks in Nigeria. Data from 14 listed deposit money banks were analyzed, focusing on 5 banks with available data. These data were sourced from the annual financial reports of these banks from the period 2020-2024. Through panel regression analysis, the study found that Automated teller machines and mobile banking positively impact corporate financial performance, while point of sale systems have a negative effect. Recommendations include increasing Automated teller machines installations for enhanced corporate financial performance by banks, optimizing mobile banking by improving network connectivity, and minimizing investments in Point of sale systems due to their limited contribution to corporate financial performance.

Keywords: Corporate, deposit commercial banks, electronic banking, financial performance, modern banking

1. Introduction

The evolution of technology and advancements in financial systems have brought about significant changes in global financial transactions, particularly in the 21st century (Abdul & Raji, 2022). The rapid expansion of Information and Communication Technologies (ICTs) has shifted the business landscape to a digital realm, prompting an examination of the impact of electronic banking services on the operational performance of Nigerian commercial banks (Olatomide & Adegbe, 2021). As Nigerian banks integrate electronic banking to enhance efficiency, customer service, and convenience, it is imperative to evaluate whether these technological enhancements result in

tangible financial advantages for banks (Harmono et al., 2023).

The emergence of electronic banking services has restructured the worldwide financial sector, bolstering operational effectiveness and potentially influencing the overall value of commercial banks (Etemadi et al., 2019). Nigerian banks, especially following consolidation and recapitalization, have increasingly adopted digital banking platforms to streamline operations and meet customer demands (Adeniji & Omoteso, 2019). The widespread uptake of online transactions, mobile banking, and other digital services in Nigeria necessitates an analysis of their impact on the financial performance and value of commercial banks (Adeleke et al., 2022).

Given Nigeria's pivotal role in the African financial sphere, understanding the correlation between electronic banking services and operational performance is crucial for both scholars and industry professionals. While global studies indicate that electronic banking can lead to cost savings, enhanced customer experience, and expanded market penetration, the specific implications for Nigerian banks' operational performance are still relatively unexplored and warrant focused investigation (Etemadi et al., 2019; Smith & Johnson, 2020; Jones et al., 2019; Adeleke et al., 2022). This study aims to offer empirical insights into this connection within the Nigerian banking sector.

The banking sector in Nigeria operates in a highly competitive and intricate environment influenced by rapid technological advancements, particularly in the domain of electronic banking (e-banking). E-banking, which involves utilizing electronic platforms such as the internet to provide banking services, has revolutionized traditional banking by enabling customers to conduct transactions like fund transfers, balance inquiries, bill settlements, and loan applications without the need to physically visit bank premises (Osly et al., 2020). The shift towards e-banking aims to lower transaction costs, reduce congestion in banking facilities, and promote a cashless economy, where electronic payments for goods and services are encouraged (Ugbede et al., 2015). Digital financial services have significantly contributed to the profitability of banks, as customers now expect real-time transactions from any location, at any time, using various devices (Opiyo et al., 2021). Nevertheless, despite the widespread adoption of e-banking, there remains a gap in understanding how these services impact the operational performance and value of

commercial banks, particularly in Nigeria (Adeleke et al., 2022).

Studies indicate a positive connection between e-banking and bank performance, as evidenced by enhanced turnover and financial indicators (Adeleke et al., 2022). However, challenges such as the rise in cybercrimes, network failures, and inefficiencies in e-banking services have impeded the full potential of e-banking in Nigeria, leading to customer hesitance and decreased profitability for banks (Adeleke et al., 2022). The Nigerian banking sector's encounter with e-banking has been mixed, with issues like high costs of e-banking infrastructure, inadequate service quality, and weak ICT systems resulting in diminished profitability and return on investment (Agboola, 2016). Given these obstacles, there is a necessity for a detailed investigation into how e-banking influences the corporate financial performance of Nigerian commercial banks, taking into account the distinctive regulatory, behavioral, and market circumstances in the country. Consequently, this study aims to provide a thorough evaluation of the implications of e-banking services on the operational financial performance of selected commercial banks in Nigeria, offering strategic insights for decision-making in the evolving digital landscape.

2. Literature Review

Corporate financial performance can be broadly defined as the aggregate value of a company's stocks, debts, and other financial holdings. It is commonly evaluated through indicators like market capitalization (the total value of outstanding shares), enterprise value (comprising debt and excluding cash), and intrinsic value (an estimation of a firm's value based on discounted cash flows). According to Damodaran (2020), corporate financial performance represents the current value of anticipated future cash flows, adjusted for associated

risks. This pivotal concept in financial management and corporate governance signifies the total perceived value of a company by its stakeholders, encompassing investors, creditors, and the broader market. It mirrors the overall financial well-being, performance, and future potential of a company (Olaire et al., 2020). Grasping the essence of corporate financial performance is crucial for decision-making processes concerning investments, mergers and acquisitions, corporate reorganizations, and financial strategies. This review delves into the essence of corporate financial performance, its determinants, and recent scholarly viewpoints (Aboelmagn et al., 2023). The relevance of corporate financial performance in determining a company's worth has escalated, with high-performing entities commanding greater valuations due to being perceived as less risky and more sustainable (Friede et al., 2015). Notably, there is a growing focus on companies that effectively leverage digital technologies for innovation, customer engagement, and operational efficiency, leading to increased value (Nambisan et al., 2019). Corporate financial performances are now increasingly characterized by resilience and adaptability. Companies that swiftly adapted to the changing landscape, particularly in the technology sector, witnessed substantial value appreciation (Ramile et al., 2020). Notably, innovative service delivery platforms offering a wide array of financial services, such as cash withdrawals, fund transfers, cash deposits, and utility and credit card bill payments through interactive communication channels, are gaining recognition (Onyedimekwu et al., 2013).

Theoretical Review

The Technology Acceptance Model (TAM), introduced by Davis (1989), seeks to elucidate the process by which individuals embrace and integrate new information technologies (IT) for various

purposes, including online banking (Pikkarainen et al., 2004). According to the model, the acceptance of an information system by users is primarily influenced by their intention to utilize the system, which is in turn shaped by their perceptions of the technology. Davis (1989) identified two fundamental beliefs that drive these intentions: perceived ease of use and perceived usefulness. Perceived usefulness entails an individual's belief in how using a particular system will enhance their performance, efficiency, and productivity by saving time and providing advantages in achieving work-related objectives. Conversely, perceived ease of use refers to the extent to which an individual perceives that minimal mental or physical effort is needed to operate the system and learn how to use it. Davis also stressed that perceived ease of use can directly impact perceived usefulness. Ajzen (1991) further explained that actual behavior reflects an observable response towards a specific goal, while intention indicates a person's willingness to engage in a particular behavior.

The TAM model emphasizes the substantial influence of perceived ease of use on perceived usefulness. Moreover, external factors, such as environmental influences, can impact both perceived ease of use and perceived usefulness. Consequently, TAM is grounded in these pivotal perceptual factors and is widely employed in IT-related studies. For instance, Liu and Arnett (2000) examined key variables for developing a successful website based on TAM principles. Subsequent research has expanded the application of TAM. Luarn and Lin (2003) integrated TAM into a novel model that elucidates consumer behavior when interacting with online technology. Pavlou (2003) formulated an e-commerce acceptance model for online consumers, using experimental designs and surveys. Horst et al. (2007) conducted research on

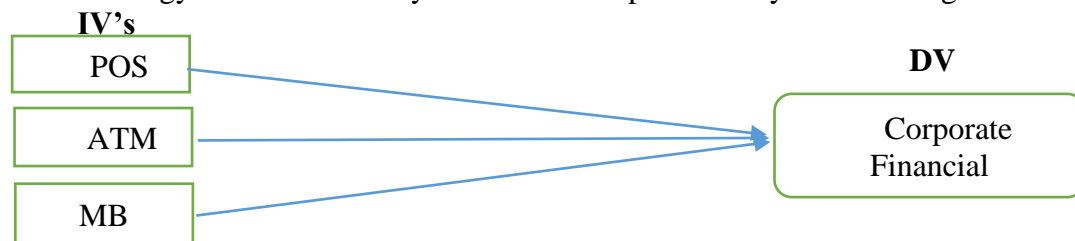
whether the Netherlands government should provide electronic platforms for citizens to access government services, incorporating TAM factors like perceived risk, trust, and public experience. Their empirical study revealed that e-government principles are founded on public trust in governmental institutions and that citizens strongly engage with IT. This investigation demonstrated that TAM not only clarifies how users accept and adopt new technologies but also furnishes a framework for comprehending online user behavior (Horst et al., 2007).

TAM stands as a critical theory guiding research on the impact of e-banking on the performance of listed banks in Kenya. It underscores the importance that banks not only introduce innovative technologies but also ensure their acceptance and adoption by customers. TAM revolves around the notions of perceived usefulness and perceived ease of use. Perceived usefulness signifies the conviction that a specific technology or information system

will enhance work performance, while perceived ease of use relates to how easily an individual can learn to operate the new technology or system (Scott & Davis, 2015). Evidence indicates that perceived usefulness plays a significant role in shaping adoption intentions, with the likelihood of e-banking adoption being closely linked to its perceived usefulness. Furthermore, if a technology is user-friendly, its implementation within an organization becomes more feasible. This theory is crucial as it supports the investigation of the independent variables under study.

Conceptual Framework

The conceptual framework illustrates electronic banking services (POS, ATM & MB) as independent variables and financial performance as a dependent variable. The framework hypothesizes that electronic banking services variables (POS, ATM & MB) have no significant impact on financial performance among deposit money banks in Nigeria.



Source: Researcher Compilation (2025).
Figure 2: Conceptual Framework

Empirical Review

Sugianto et al. (2020) conducted a study on the determinants of corporate financial performance in the banking sector by utilizing a random effects model. The research was centered on 42 banks that were listed on the Indonesia Stock Exchange between 2010 and 2015, with 27 banks chosen as samples through purposive sampling. Through their analysis employing a random effects regression panel model, the researchers discovered that the Non-Performing Loan (NPL) ratio had a significant impact on

corporate financial performance. However, factors like company growth (FG), Capital Adequacy Ratio (CAR), Loans (LDR), Operational Efficiency (BOPO), Deposit Growth (DG), and profitability did not have individual effects on Tobin's Q, although collectively they influenced it.

In a similar context, Olalere et al. (2021) investigated the effects of financial innovation and bank competition on corporate financial performance in Malaysia and Nigeria. By utilizing the system Generalized Method of Moments

(sys-GMM) estimation technique and data from 26 commercial banks during the period 2009-2019, their study revealed differing effects in the two countries. In Nigeria, financial innovation (FI) and bank competition both negatively impacted corporate financial performance significantly, whereas in Malaysia, FI and bank competition had a significant positive effect. Their findings also indicated significant relationships between Return on Assets (ROA), bank size, GDP growth, and inflation rate with corporate financial performance. The interaction between FI and bank competition displayed a positive correlation with corporate financial performance in both countries, emphasizing the significance of financial innovation in economic advancement and growth. The study suggests that policymakers need to address vulnerabilities exposed by financial crises and enhance regulatory frameworks.

Oyedokun et al. (2021) explored the relationship between e-banking services and the financial performance of deposit money banks in Nigeria. The study encompassed eight internationally authorized deposit money banks, using data from sources like annual reports and the Central Bank of Nigeria's statistical bulletin covering the period 2011-2020. E-banking was evaluated through mobile banking, online banking, ATMs, and point of sale (POS) systems, while performance was assessed based on Return on Assets (ROA). The analysis conducted with ordinary least squares (OLS) revealed that mobile banking and POS had a significant impact on bank performance, while online banking and ATMs did not. The study concluded that investments in e-banking might not always lead to improved bank performance, underscoring the importance of efficient resource management, expansion of customer base, and service quality.

Ebimobowei (2022) investigated the impact of corporate governance characteristics on the value of deposit money banks in Nigeria. The study focused on the relationships between board size, independence, ownership, gender diversity, and board meetings with Tobin's Q. By utilizing secondary data from published financial statements and employing univariate, bivariate, and multivariate analyses, the study indicated that board independence, size, ownership structure, gender diversity, and board meetings positively and significantly impacted corporate financial performance. Likewise, Origin and Rapuluchukwu (2022) evaluated the effects of digital banking on the performance of commercial banks in Nigeria from 2010 to 2019 using the Autoregressive Distributed Lag (ARDL) framework. Based on data from the Central Bank of Nigeria (CBN) and Nigeria Deposit Insurance Corporation (NDIC), their study revealed that digital banking had a positive but insignificant effect on performance. The researchers recommended enhancing network stability for better performance outcomes.

Gbanador (2023) analyzed the impact of electronic banking systems on the performance of deposit money banks in Nigeria, utilizing an ex-post facto design and secondary data from the Central Bank of Nigeria from 2019 to 2021. The short-term analysis showed no significant impact, while the long-term results indicated that ATMs and POS had positive but insignificant effects, and mobile banking had a significant positive impact. The study identified a long-term relationship between e-banking and bank performance and suggested that banks should promote the benefits of e-payment channels and enhance mobile banking services to sustain performance.

Research Hypothesis

The following hypotheses formulated based on the research problem statement

and in line with the objectives of the study:

Ho1: There is no significant impact of Point-of-Sale (POS) transactions on Corporate Financial Performance of selected Commercial banks in Nigeria.

Ho2: Automated Teller Machine (ATM) usage has no significant impact on Corporate Financial Performance of selected Commercial banks in Nigeria.

Ho3: There is no significant impact of Mobile Banking (MB) banking on Corporate Financial Performance of selected Commercial banks in Nigeria.

3. Methodology

This study employed an Ex-post facto research design. The research focused on the fourteen (14) Listed Deposit Money Banks in Nigeria. All fourteen (14) listed banks were included due to their listing on the Nigeria Stock Group during the study period (2020-2024) and the availability of their data. Data were obtained from the banks' annual accounts and reports. The data analysis utilized multiple regression techniques.

The model of the study is $CFP_{it} = \beta_0 + \beta_1 ATM_{it} + \beta_2 POS_{it} + \beta_3 MB_{it} + \epsilon_t$

4. Results and Discussions

Where:

CFP= Corporate Financial Performance

ATMS= Automated Teller Machine

POS= Point of Sales.

MB= Mobile banking

α_0 = Estimated value of Y when all the other variables are zero

β = Correlated volatility of estimated value of Y

ϵ_t = Error term

The sample were five deposit money banks in Nigeria listed on the NSE, which ensures that the sample is representative of the entire population of deposit money banks in Nigeria. These are: Access Bank, First Bank of Nigeria, Guaranty Trust Bank, United Bank for Africa, and Zenith Bank. The choice of these banks is based on their size, the volume of transactions, and their influence on the Nigerian banking sector and the international communities (i.e., international authorization). Studies like Oke, 2019; Osakwe & Ezeaku, 2022 all used a sample size of five banks, hence there is enough justification for the use of 5 commercial banks as sample size for the study.

Table 1: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Std. Deviation
CFP	-0.06	0.79	0.1650	0.17095
ATM	7.08	9.36	7.5929	0.27069
POS	9.45	9.86	9.7306	0.09986
MB	15.12	18.28	15.8509	0.43173

From table 1, it can be observed that CFP has minimum and maximum values of -0.06 and 0.79 respectively and the mean value of 0.1650 as well as the standard deviation value of 0.17095. The average CFP of 0.1650 depicts how it moves between the minimum and the maximum value and the standard deviation higher than the mean implies a high rate of deviation from the mean.

Table 1 indicates automated teller machine (ATM) has minimum value of 7.08 and 9.36 as the maximum value and mean value of ATM is 7.5929 with standard deviation of 0.27069. The average value of 7.5929 and the standard deviation value indicate that the ATM value deviates from the mean value and from both sides by 0.27069, which implies that there is no wide dispersion of

the data from the mean because the standard deviation is less than the mean value.

The table also depicts that point of sale (POS) has a minimum value of 9.45 and 9.86 as the maximum value, mean value of POS is 9.7306 with standard deviation of 0.09986, Average value of 9.7306 and the standard deviation value indicates that the sampled companies' point of sale deviates from the mean value from both sides by 9.9%, implying that there is no significant dispersion of the data from the mean because the standard deviation is less than the mean value.

Finally, table 1 portrays that mobile banking (MB) of the listed deposit money bank has minimum value of 15.12 and 18.28 as the maximum value and average value of 15.8509 with standard deviation of 0.43173. The standard deviation value indicates that MB deviation between the minimum and the maximum value is 43.17%, implying that there is no dispersion of data from the mean because

Table 2: Correlation Matrix

VARIABLES	CFP	ATM	POS	MB
CFP	1.000			
ATM	0.315** 0.008	1.000		
POS	-0.08 0.486	0.314** 0.008	1.000	
MB	0.116 0.338	0.379 0.001	0.563** 0.000	1.000

Source: SPSS OUTPUT 2025

The table 2 above indicates the relationship between E-banking (ATM, POS & MB) & Corporate Financial Performance (CFP) of Selected deposit money banks of Nigeria. The table shows a positive and significant relationship between CFP and ATM evidence by a p-value of 0.008 which is significant at 1%. This implies that as the ATM increase,

the standard deviation is less than the mean.

Correlation analysis deals with the relationship among variables both dependent and independent variables. The correlation coefficient can range in value from -1 to +1. The larger the absolute value of the coefficient, the stronger the relationship between variables. For Pearson correlation, an absolute analysis deals with the relationship among variables both dependent and independent variables. The correlation coefficient can range in value from -1 to +1. The larger the absolute value of the coefficient, the stronger the relationship between variables. For Pearson correlation, an absolute value of 1 indicates a perfect linear relationship. A correlation close to 0 (zero) indicates no linear relationship between variables. The sign of the coefficient indicates the direction of the correlation.

firm value of selected Commercial banks in Nigeria will also increase in the same direction.

POS has negative relationship with the firm value as shown by the result of the coefficient of -8.0% at a p-value of 0.486 which is not significant at all. This implies that as the POS increases, the firm value will decrease.

The table shows a positive and insignificant relationship between CFP and MB evidence by a p-value of 0.338 which is not significant at all. This implies that as the MB increase, value of listed deposit money banks in Nigeria will increase in the same direction.

Table 3: Summary of Regression Result.

Variable	Coefficient	t-statistics	p-values	Tolerance/VIF
Constant	2.098	1.109	0.272	0.9124/1.071
ATM	0.349	2.818	0.006	0.924/1.083
POS	-0.271	-1.957	0.055	0.938/1.067
MB	0.137	0.962	0.340	0.975/1.025
R ²				0.491
F-statistics				3.848
F-significant				0.000

Source: STATA OUTPUT 2025.

Table 3 illustrates the cumulative R² value of 0.491, representing the multiple coefficients of determination that explain the total variation in the dependent variable by the independent variables collectively. Hence, the combined influence of the independent and dependent variables is approximately 49%. The R² value of 0.491 indicates that 49% of the fluctuations in corporate financial performance can be clarified by the variability in ATM, POS, and MB of deposit money banks in Nigeria.

The significant Fisher change of 3.848 at 1% signifies that the E-Banking and corporate financial performance model is well-fitted. The calculated F-significant of 0.000 at a 1% level of significance indicates that all explanatory variables collectively contribute significantly to increasing the Return on equity of deposit money banks in Nigeria. Therefore, ATM, POS, and MB have a significant impact on the corporate financial performance of deposit money banks. The statistically significant F-value at a 1% level implies that there is a strong likelihood that the association among the variables is not due to mere chance.

The regression analysis explores the relationship between the dependent variable and each independent variable, as well as the combined results of the models.

The tolerance value and variance inflation factor (VIF) are widely acknowledged by researchers as effective measures for identifying multi-collinearity among study variables. If all explanatory variables have a VIF below ten, multi-collinearity is said to be absent. From the coefficients in Table 3 ($1.083 < 10$, $1.067 < 10$, $1.025 < 10$), the tolerance values are below 1.000, indicating no multi-collinearity among the study's independent variables.

Observations reveal that ATM has a coefficient of 0.349, a t-statistic of 2.818, and a significant t-value of 0.006 at all levels of significance. With a coefficient of 0.349, it can be inferred that ATM and the corporate financial performance of listed deposit money banks in Nigeria are positively correlated. This suggests that a 1% increase in the number of ATMs installed by listed banks will lead to a 35% rise in corporate financial performance. This statistical evidence contradicts the null hypothesis stating that ATM has no impact on the financial performance of Deposit Money Banks in Nigeria (Osakwe & Ezeaku, 2022).

Similarly, POS with a coefficient of -0.271, a t-statistic of -1.957, and a significant t-value of 0.055 at the 1% level

of significance shows a negative relationship with the financial performance of listed deposit money banks. This indicates that as the number of points of sale increases by 1%, the financial performance of listed banks will decrease by 27%. This evidence refutes null hypothesis two, suggesting that POS has no significant impact on the financial performance of listed deposit money banks in Nigeria (Agbo, 2021).

Lastly, MB depicts a coefficient of 0.137, a t-statistic of 0.962, and a t-value of 0.340, indicating a positive relationship. A 1% increase in the usage levels of Mobile Banking among listed deposit money banks will lead to a 14% enhancement in corporate financial performance. This statistical evidence significantly opposes null hypothesis three, which argues that MB has no significant impact on the financial performance of listed deposit money banks in Nigeria (Agbo, 2021).

5. Conclusion and Recommendations

A number of research studies have investigated the impact of E-Banking on the corporate financial performance of publicly listed deposit money banks in Nigeria. This particular study concentrated on the 14 deposit money banks that were listed on the Nigerian Stock Exchange as at 2024. The study utilized Automated Teller Machines (ATM), Point of Sale (POS) systems, and Mobile Banking (MB) as independent variables, while Return on Equity (ROE) was employed as the dependent variable to measure the corporate financial performance of these banks.

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The analysis depicts that ATMs significantly contribute positively to the financial performance of deposit money banks in Nigeria, leading to the dismissal of the null hypothesis. Banks that generate higher profits tend to display superior financial performance, indicating that investing in ATMs can augment financial returns. Conversely, POS systems were discovered to have an insignificant and adverse impact on financial performance, supporting the notion that POS does not substantially affect the financial performance of these banks. Similarly, although Mobile Banking (MB) was found to have a positive impact, it was statistically insignificant in relation to the financial performance of listed deposit money banks in Nigeria. In light of these findings, the study offers the following recommendations:

- i. Due to the significant positive correlation between ATM usage and financial performance, banks should prioritize the installation and utilization of ATMs to enhance their financial outcomes.
- ii. Given that POS systems do not significantly influence financial performance, bank management should reassess their investment in POS as a means to boost financial performance.

While MB does have a positive influence on financial performance, its effect is not significant. Hence, while MB should be embraced, it may not be the primary factor in enhancing financial performance. These conclusions underscore the importance of concentrating on efficient E-Banking tools, with ATMs demonstrating the most potential for improving financial results.

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