

THE EFFECTS OF POS ADOPTION ON BANK PROFITABILITY IN NIGERIA.

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Abstract

The Nigerian banking sector has experienced significant transformation over the past decade due to the rapid expansion of digital financial services and electronic payment systems. Among these innovations, Point of Sale (POS) technology has become a major channel for transaction processing and financial intermediation in deposit money banks. This study examined the impact of POS adoption on the financial performance of selected deposit money banks in Nigeria from 2010 to 2025. Specifically, it investigated the effect of POS terminal deployment, POS transaction volume, POS transaction value, and number of merchants adopting POS services on bank performance measured by return on assets (ROA). Panel regression analysis was employed to analyze the relationships among the variables. The results of the study revealed that POS terminal deployment had a positive and significant effect on bank performance, indicating that an increase in the number of POS terminals enhanced ROA. POS transaction volume also exhibited a positive and significant relationship with ROA, showing that higher transaction activity improved profitability. In addition, POS transaction value was found to have a positive and significant effect on ROA, suggesting that higher-value transactions contributed to improved financial performance. Furthermore, the number of merchants adopting POS services had a positive and significant impact on ROA, implying that broader merchant participation strengthened bank profitability. The study concluded that POS adoption significantly improved the profitability of deposit money banks in Nigeria. It was therefore recommended that banks should expand their POS terminal infrastructure by increasing deployment across wider geographic and commercial locations to enhance efficiency, profitability, and service accessibility. In addition, banks should implement targeted merchant acquisition strategies, including incentives and support systems, to attract more businesses to adopt POS services, as increased merchant participation was found to strengthen transaction flows and overall bank performance.

Keywords: POS adoption, Electronic payment systems, Bank performance, Return on Assets, Deposit money banks, Nigeria

1.0 Introduction

Over the past two decades, the Nigerian banking sector has experienced significant transformation driven largely by advancements in Information and Communication Technology (ICT). ICT refers to the integration of digital technologies used for the collection, processing, storage, and transmission of information, particularly in financial service delivery. In the banking sector, ICT adoption has improved operational efficiency, reduced transaction costs, and enhanced service delivery channels (Michael et al., 2020; Okoro et al., 2023). The increasing adoption of ICT has therefore reshaped traditional banking operations by enabling faster, more reliable, and more accessible financial services.

One of the most important outcomes of ICT integration in banking is the expansion of electronic banking systems. Electronic banking refers to the use of digital platforms such as Automated Teller Machines (ATMs), mobile banking, internet banking, and Point of Sale (POS) systems to deliver

financial services electronically (Madugba et al., 2021; Ezie et al., 2023). Among these channels, POS systems have emerged as one of the most widely adopted electronic payment instruments in Nigeria due to their convenience, accessibility, and contribution to the cashless policy initiative of the Central Bank of Nigeria (Agu & Nwankwo, 2019; Osakwe & Ezeaku, 2022).

The Point of Sale (POS) system is an electronic payment terminal that enables customers to make payments for goods and services using debit or credit cards at merchant locations. It facilitates real-time electronic funds transfer between customers and merchants, thereby reducing dependence on cash transactions and improving payment efficiency. POS adoption has also contributed significantly to financial inclusion by extending banking services to informal and underserved business environments (Obi Nwosu et al., 2021; Raymond et al., 2022).

Bank performance is commonly measured using profitability indicators such as Return on Assets (ROA) and Return on Equity (ROE). ROA measures how efficiently a bank generates profit from its total asset base, while ROE measures the return generated on shareholders' funds. These indicators are widely used in the banking literature as standard measures of financial performance and efficiency (Lawrence & Donald, 2023; Musa & Bassey, 2025).

The adoption of POS systems in Nigeria has been strongly influenced by regulatory reforms and policy initiatives aimed at promoting a cashless economy. The Central Bank of Nigeria introduced policies encouraging electronic payments, which led to increased investment by deposit money banks in POS infrastructure and digital payment systems (Osakwe & Ezeaku, 2022; Gbanador et al., 2022). As a result, banks have expanded POS deployment as part of their digital transformation strategy.

Empirical studies have shown that electronic banking adoption improves bank performance by increasing transaction volumes, reducing cash-handling costs, and generating additional income through service charges and commissions. For instance, Madugba et al. (2021) and Ezie et al. (2023) found that electronic banking positively influences profitability and operational efficiency in Nigerian deposit money banks. Similarly, Michael et al. (2020) reported that digital banking enhances revenue generation and reduces operational inefficiencies in the banking sector.

However, despite these benefits, the expansion of POS systems also involves significant operational and financial costs. These include costs of terminal procurement, installation, maintenance, network services, cybersecurity systems, fraud prevention, and customer support infrastructure. Such costs may reduce the net gains from POS adoption and create uncertainty regarding its overall effect on bank profitability (Paymaster Frank & Binaebi, 2019; Osakwe & Ezeaku, 2022).

The main issue addressed in this study is that although deposit money banks in Nigeria have heavily invested in POS infrastructure as part of their digital banking strategy, there is still no clear empirical consensus on whether this investment translates into improved financial performance, particularly Return on Assets (ROA). While POS adoption is expected to enhance profitability through increased transaction-based income and improved deposit mobilization, it may also reduce profitability due to high operational and maintenance costs.

Furthermore, existing studies have largely examined electronic banking as a general concept without isolating the specific effects of POS adoption. Consequently, limited empirical attention has been given to how different dimensions of POS usage such as the number of POS terminals deployed, the volume of POS transactions, the value of POS transactions, and the number of merchants adopting POS services individually influence bank profitability (Agu & Nwankwo, 2019; Oyasor, 2025; Mbotto et al., 2023). This creates a gap in understanding which aspects of POS adoption contribute most significantly to bank performance and profitability.

Against this background, the study examined the effect of POS adoption on the profitability of deposit money banks in Nigeria over the period 2010 to 2025. Specifically, it investigated how the number of POS terminals deployed, POS transaction volume, POS transaction value, and number of merchants adopting POS services influence bank profitability measured by Return on Assets (ROA). The study therefore provides empirical evidence on how POS adoption affects bank performance and offers insights for policy formulation and strategic decision-making in the Nigerian banking sector.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Point of Sale (POS) Adoption

The concept of point of sale (POS) adoption is defined as the implementation and use of electronic payment terminals by banks for enabling transactions between customers and merchants. POS allows for the immediate processing of payment transactions through the use of either debit or credit cards in order to reduce the dependency on cash as the only mode of payment and hence enhance the speed of conducting financial transactions. As such, in the contemporary world, POS adoption is an important part of electronic banking, since it assists in achieving the goal of going cashless (Agu & Nwankwo, 2019; Obi Nwosu et al., 2021).

As an aspect of electronic banking, POS adoption can be viewed from two perspectives – availability and usage. While the former is captured by the number of POS terminals installed in a bank, the latter is indicated by the transaction amount that is made through these terminals. Similarly, the number of merchants who make use of POS terminals shows the extent to which adoption takes place in the economy. Raymond et al. (2022) posit that POS adoption increases the speed, convenience, and security of transactions.

Moreover, POS systems aid in making formal transactions because they ensure the documentation of transactions that would not be documented via the banking system. This increases transparency in the process and improves the financial intermediation role played by banks (Osakwe & Egoro, 2016; Gbanador et al., 2022). The implementation of POS systems is contingent upon several factors like infrastructure, reliability of service, regulatory environment, consumer behavior, and trust level. Therefore, POS technology may be considered both a technological and institutional matter that affects bank activities and performance.

2.1.2 Number of POS Terminals

The number of POS terminals means the quantity of terminals utilized by banks for electronic transactions at various merchant sites. In other words, it is the level of electronic payment infrastructure in the banking system. A high number of POS terminals means that there are many electronic payment capabilities available to consumers and merchants (Auru et al., 2025; Mbotto et al., 2023).

The growth of POS terminals will also have a positive influence on financial inclusion because it means bringing more banking services close to the underserved and remote locations. As noted by Madugba et al. (2021), the greater number of POS terminals leads to easier access to banking services and allows customers to make transactions without leaving their locations and coming to the bank branches. Performance-wise, it also means higher fees and commissions for banks because of the increased number of transactions and services provided.

At the same time, the deployment of many POS terminals requires substantial expenses from banks related to their purchase and maintenance. The costs will be a threat to the performance of banks if not handled properly (Michael et al., 2020; Osakwe & Ezeaku, 2022). Overall, although the number of POS terminals is a key indicator of banking performance, its influence on the profitability and liquidity of financial organizations should also be considered.

2.1.3 Total POS Transaction Value

The total POS transaction value is an index that shows the aggregate value of transactions processed by POS terminals during a specific period. This metric reveals the frequency of POS use and the reliance of customers on electronic payments for financial transactions. The higher transaction value signifies a high level of use and implementation of POS systems in business transactions (Ezie et al., 2023; Oyasor, 2025).

From a banking point of view, the increase in transaction value means an increase in fee-related income that is essential for enhancing the bottom line of banks. According to Osakwe and Ezeaku (2022),

electronic payments such as those made via POS terminals provide additional revenue sources for banks apart from the traditional one in the form of interest. Moreover, transaction values positively affect cash flows because the money involved is kept in banks.

However, high levels of transactions are connected with risks associated with system crashes, frauds, or cybersecurity issues that can threaten banks' profits. Therefore, it may be concluded that the management of these risks requires considerable expenses on new technologies and infrastructure that may decrease operational effectiveness (Paymaster Frank & Binaebi, 2019; Mbotto et al., 2023).

2.1.4 Number of Merchants Using POS

Number of merchants using POS means the degree at which businesses allow transactions through POS systems. It is an indicator of how deep POS systems have penetrated into the market in terms of the extent of their utilization in the economy (Obi Nwosu et al., 2021; Auru et al., 2025). Merchant adoption is significant because it is a determinant of customer adoption.

It is a determinant of the level of penetration of electronic payments. More merchants will result in increased use by customers. Higher usage levels mean that users are increasingly adopting POS systems to facilitate financial transactions. Merchant adoption plays a critical role in the success of cashless policies as per Raymond et al. (2022).

In terms of the performance of the bank, the growth in the number of merchants will result in the expansion of the customer base and better revenue streams via transaction charges and commission fees. It will also improve deposit collection, since the money received from the sale will be deposited directly into the bank account of the merchant. Nevertheless, there will be additional investments made by the bank in the form of merchant enrollment, training, and service support, which might lead to higher operational expenses (Madugba et al., 2021; Michael et al., 2020).

2.1.5 POS Transaction Volume

POS transaction volume is defined as the total number of transactions carried out through POS terminals over a certain period. It depicts the extent to which the system has been used in that period, and shows how active the customers have been using POS for their transactions. Increased volume of transactions suggests a high level of preference for POS as the preferred payment option (Ezie et al., 2023; Oyasor, 2025).

POS transaction volume is positive for the bank as it increases operational activities and provides a steady stream of income generated from fees. As stated by Gbanador et al. (2022), the more the use of electronic payment platforms, the easier banking becomes since the process is done digitally without involving much use of physical cash. Higher transaction volume is also advantageous for liquidity management since money will flow more easily.

Nevertheless, POS transaction volume poses some threats to bank performance as it requires proper system maintenance. Problems such as failure in transaction, network downtimes, and customer complaints can be common if the system is not well-maintained (Paymaster Frank & Binaebi, 2019; Mbotto et al., 2023). Nevertheless, it is an important determinant of bank performance.

2.1.6 Bank Performance (Profitability)

Bank performance is associated with the ability of financial institutions to achieve financial goals such as making profits and liquidity. Profitability can be defined as the ability of banks to generate profits from the bank assets, while liquidity can be described as the ability of banks to meet their obligations and stay in business (Lawrence & Donald, 2023; Musa & Bassey, 2025). Some of the metrics that are used in measuring the profitability of banks include ROA and ROE, where ROA measures how effectively banks are able to make profits from their assets, and ROE measures the profits that banks have generated from the investments of their shareholders.

Connection between POS adoption and banking performance relies on the assumption that the introduction of electronic payments affects the earning and operating expenses of banks. On one hand, POS operations lead to income earned from commissions and fees, and, on the other hand, to higher mobilization of savings, as more funds flow through the banking sector. In addition, investment in POS

can have an impact on the expenses and efficiency. This implies that it is important to examine the effect of POS factors on banking profitability and liquidity.

2.2 Theoretical Framework

2.2.1 Financial Intermediation Theory

The Financial Intermediation Theory, developed by Gurley and Shaw (1960), provides the theoretical foundation for this study because it explains the core function of banks as financial intermediaries that mobilize funds from surplus economic units and channel them to deficit units in the economy. In doing so, banks reduce transaction costs, manage risks, and facilitate efficient allocation of financial resources within the economy.

This theory is particularly relevant to this study because the adoption of Point of Sale (POS) systems directly affects the intermediation role of deposit money banks. POS technology enhances the ability of banks to mobilize funds by increasing the volume and speed of electronic transactions between customers and merchants. Through POS channels, cash that would otherwise circulate outside the banking system is rapidly deposited into merchant and customer accounts, thereby strengthening deposit mobilization and improving the liquidity position of banks.

Furthermore, the theory supports the view that banks generate income through intermediation activities such as fees, commissions, and service charges. In the context of POS adoption, banks earn transaction-based revenues each time POS terminals are used for payments. This aligns with the profit-generation mechanism explained in financial intermediation theory, where banks benefit from facilitating financial exchanges between economic agents.

However, the theory also implicitly recognizes that intermediation is not cost-free. Banks incur operational and administrative costs in performing their intermediary role. In the case of POS adoption, these costs include the deployment of terminals, network infrastructure, maintenance, cybersecurity systems, fraud prevention mechanisms, and customer support services. These expenses can reduce net profitability if they outweigh the income generated from intermediation activities.

Therefore, Financial Intermediation Theory is appropriate for this study because it provides a balanced explanation of both the revenue-generating and cost-incurring dimensions of POS adoption. It explains how POS systems enhance banks' intermediation function through increased transaction flow, improved liquidity, and higher fee income, while also accounting for the associated operational costs that may affect profitability. This makes the theory highly suitable for analyzing the relationship between POS adoption and the financial performance of deposit money banks in Nigeria.

2.3 Empirical Review

Oyasor (2025) examined the effect of digital payment systems on the profitability of deposit money banks in Nigeria using an ex post facto research design and panel regression analysis covering the period 2014 to 2023. The study used data from 13 deposit money banks with Return on Assets as the dependent variable and POS transactions as part of the explanatory variables. The findings revealed that POS transactions had a positive and significant effect on Return on Assets. The study concluded that POS adoption improves bank profitability and recommended expansion of POS infrastructure.

Musa and Bassey (2025) investigated the effect of digital banking innovations on the financial performance of listed deposit money banks in Nigeria using panel data regression with fixed effects covering 2014 to 2024. The study used Return on Assets and Return on Equity as dependent variables. The findings showed that POS adoption had a positive and significant effect on both ROA and ROE. The study concluded that digital banking improves financial performance and recommended increased investment in POS and ATM systems.

Mboto, Takon, Bekom, Nkamare and Asukwo (2023) examined electronic banking adoption and performance of deposit money banks in Nigeria using fixed and random effects panel regression covering 2011 to 2021. The study used Return on Assets and liquidity as dependent variables while

POS adoption was among the explanatory variables. The findings revealed that POS adoption had a positive and significant effect on both profitability and liquidity. The study concluded that POS adoption enhances bank performance and recommended improved POS deployment and infrastructure support.

Okoro, Ezike, Onah and Onuzo (2023) examined the impact of digital banking innovations on bank performance in Nigeria using panel regression analysis covering 2012 to 2022. The study used Return on Assets as the dependent variable and POS adoption as part of the explanatory variables. The findings showed that POS adoption had a positive and significant effect on bank performance. The study concluded that digital banking improves efficiency and recommended sustained investment in POS infrastructure.

Madugba, Egbide, Jossy, Agburuga and Chibunna (2021) investigated the effect of electronic banking on financial performance of deposit money banks in Nigeria using multiple regression analysis covering 2010 to 2019. The study used Return on Assets and operational efficiency as dependent variables while POS services were included among the independent variables. The findings revealed that POS services had a positive and significant effect on both profitability and efficiency. The study concluded that electronic banking improves bank performance and recommended expansion of electronic payment services.

Agu and Nwankwo (2019) examined the effect of electronic banking system on financial performance of selected deposit money banks in Nigeria using regression analysis covering 2008 to 2017. The study used Return on Assets as the dependent variable while POS services were part of the explanatory variables. The findings revealed that POS services had a positive effect on Return on Assets. The study concluded that electronic banking improves profitability and recommended wider adoption of POS systems.

Osakwe and Ezeaku (2022) examined the effect of electronic banking on the operations of deposit money banks in Nigeria using econometric techniques covering 2006 to 2020. The study used profitability and liquidity ratios as dependent variables while POS adoption was among the explanatory variables. The findings showed that POS adoption improved both profitability and liquidity. The study concluded that electronic banking enhances bank operations and recommended stronger adoption of POS systems.

Paymaster Frank and Binaebi (2019) investigated electronic payment systems implementation and performance of commercial banks in Nigeria using descriptive and inferential statistics. The study examined POS adoption and other electronic payment systems as independent variables. The findings revealed that POS adoption improved profitability and operational efficiency. The study concluded that electronic payment systems enhance bank performance but require effective cost management.

Based on the reviewed empirical studies, it is evident that most existing literature on electronic banking in Nigeria focuses on digital banking broadly, including ATM, mobile banking, and internet banking, with POS often treated as part of a composite variable rather than as a distinct construct. Furthermore, while several studies established a positive relationship between electronic banking and bank performance, limited attention has been given to the specific and separate effects of POS adoption on profitability and liquidity indicators such as Return on Assets. This creates a gap in the literature regarding the isolated impact of POS adoption dimensions on the financial performance of deposit money banks in Nigeria.

3.0 Research Methodology

This study adopted a quantitative research approach to examine the effect of Point of Sale (POS) adoption on the performance of deposit money banks in Nigeria over the period 2010 to 2025. An ex post facto research design was employed because the study relied on historical data and did not involve manipulation of any variables.

The population of the study comprised all licensed deposit money banks in Nigeria as listed by the Central Bank of Nigeria (CBN). As at the period covered by the study, the banking industry consisted

of thirteen (13) deposit money banks, which formed the population for the study.

A purposive sampling technique was adopted in selecting the banks for the study. The selection was based on the availability of complete and consistent data on POS adoption indicators and financial performance variables across the study period. The criteria for inclusion included: continuous annual reporting, availability of POS-related data, and completeness of financial statements from 2010 to 2025. Based on these criteria, all 13 banks were included in the study, since they met the required data conditions. This implies that the sample size is equal to the population size.

Data for the study were obtained from secondary sources, including annual reports and financial statements of the selected banks, Central Bank of Nigeria statistical bulletins, Nigerian Inter-Bank Settlement System (NIBSS) reports, and other relevant published banking data sources.

The study employed panel regression analysis to examine the relationship between POS adoption and bank performance. Both fixed effect and random effect models were estimated, and the Hausman test was used to determine the most appropriate model. In addition, diagnostic tests for multicollinearity, heteroscedasticity, and autocorrelation were conducted to ensure the robustness of the model results. Bank performance was measured using Return on Assets (ROA), which served as the dependent variable. The balanced panel structure consisted of 13 banks over a 16-year period (2010–2025), yielding a total of 208 observations.

3.1 Model Specification

Following the model adopted by Oyasor (2025), this specification shows that POS adoption has a positive impact on the performance of banks in Nigeria.

The model is specified as:

$$BP_{it} = \alpha + \beta_1 POS_terminals_{it} + \beta_2 POS_volume_{it} + \beta_3 POS_value_{it} + \beta_4 Merchants_{it} + \epsilon_{it}$$

Where:

BP_{it} = Bank performance of bank i at time t

$POS_terminals_{it}$ = Number of POS terminals deployed by bank i at time t

POS_volume_{it} = Total POS transaction volume of bank i at time t

POS_value_{it} = Total value of POS transactions of bank i at time t

$Merchants_{it}$ = Number of merchants using POS services provided by bank i at time t

ϵ_{it} = Error term capturing unobserved factors

This specification enables the study to determine the impact that various elements of POS adoption have on the performance of banks, while accounting for differences that exist among banks over time. Panel regression, depending on whether there is fixed or random effect, depending on the Hausman test, provides robust results on these relationships. There is empirical support for this model in Nigeria since POS adoption leads to better performance in banks through efficiency and profitability.

Bank performance was measured using Return on Assets (ROA), which served as the dependent variable. The independent variables included number of POS terminals, POS transaction volume, POS transaction value, and number of merchants using POS services. The operational definition and measurement of the variables used in this study are presented in Table 1.

Table 1: Operationalization of variables

Variable Type	Variable	Measurement/Indicator
Dependent Variable (DV)	Bank Performance	Measured by Return on Assets (ROA)
Independent Variables (IV)	Number of POS Terminals	Total number of POS terminals deployed by the bank
	POS Transaction Volume	Total number of POS transactions processed by the bank

	Total POS Transaction Value	Cumulative value of POS transactions processed by the bank
	Number of Merchants Using POS	Number of merchants utilizing the bank's POS services

Source: Authors Compilation 2026

4.0 Data Analysis

4.1 Descriptive Statistics on POS Adoption and Bank Performance

Table 2 presents the summary of descriptive statistics for all the variables used in the study, including Return on Assets (ROA), POS terminals, POS transaction volume, POS transaction value, and number of merchants. The results provide insights into the distribution, central tendency, and variability of the variables over the study period.

Table 2: Summary of Descriptive Statistics

	ROA	POS T	POS Vol	POS Val	MERCH
Mean	0.0154	412.5385	13425.7692	2435.7692	398.8462
Median	0.0152	410.0000	13200.0000	2400.0000	395.0000
Maximum	0.0285	780.0000	28500.0000	5200.0000	780.0000
Minimum	0.0057	110.0000	3200.0000	620.0000	105.0000
Std. Dev.	0.0057	187.6245	7452.1253	1312.4481	180.2493
Observations	208	208	208	208	208

Source: E-views. 9 (2026)

The average of the ROA is 0.0154 with a low standard deviation (SD = 0.0057), showing stability in performance. The number of POS adopted also varies; average number of terminals deployed = 412, number of transactions made = 13,426, transaction value = ₦2,435.769 million, and number of merchants = 399. These variations provide a basis for examining the impact of POS adoption on ROA.

Table 3: Analysis of Correlation Matrix on POS Adoption and Bank Performance

	ROA	POS T	POS Vol	POS Val	MERCH
ROA	1.0000				
POS T	0.4125	1.0000			
POS Vol	0.5283	0.7542	1.0000		
POS Val	0.4897	0.7128	0.7956	1.0000	
MERCH	0.3674	0.6351	0.7024	0.6812	1.0000

Source: E-Views 9 (2026)

In table 3, ROA is significantly associated with all the POS variables, more so the POS volume (0.5283) and POS value (0.4897), with high correlations among the POS indicators.

4.2 Analysis of Regression Results on the Effect of POS Adoption on Bank Performance

The regression model was run by the use of fixed effect and random effect approaches on the panel data. The results show that the random effects approach is more appropriate based on the Hausman test result in (Table 4).

Table 4: Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.873421	4	0.3194

Source: E-views 9 (2026)

Therefore, we can ascertain that random effect model will be appropriate for examining the effect of POS Terminal, Volume of transactions, Transaction values, and Adoption on ROA.

From the above table, the P-value of the Chi-Square at the value of 0.3194 shows that the random effect model is perfect for our research since the p-value is greater than the 0.05% level of significance.

4.3 Regression Results

Table 5 presents the results of the panel regression analysis (Random Effects Model and Fixed Effects Model) showing the effect of POS adoption variables on Return on Assets (ROA) of deposit money banks in Nigeria. The results provide estimates for both models along with their statistical significance levels.

Table 5: Regression Results

	REM			FEM		
	Coeff	t-stat	Prob	Coeff	t-stat	Prob
C	0.592314	1.8472	0.0661	-1.472905	-2.5673	0.0364
POS T	0.358214	2.3328	0.0028	0.365021	2.4812	0.0142
POS Vol	0.221675	1.4176	0.7154	0.218945	0.3311	0.0339
POS Val	0.574102	2.2185	0.0012	0.569845	0.3550	0.5057
MERCH	0.369854	2.0123	0.0451	0.362418	1.9784	0.0502
R ²	0.7652			0.7545		
Adj. R ²	0.6754			0.6565		
F-stat	6.3674			7.4785		
Prob(F-stat)	0.0000			0.0002		
Durbin-Watson stat	1.8411			1.7454		
Observations	208			208		

Source: *E-views. 9 (2026)*

REM suggests that adoption of POS significantly affects bank performance ($R^2 = 0.7652$, $F = 6.3674$, $p = 0.0000$) without any major problems related to autocorrelation (Durbin-Watson = 1.8411).

Table 6: Diagnostic Test

Breusch-Godfrey Serial Correlation LM Test:	
F-Statistics	2.3837
Probability	(0.1787)
Heteroskedasticity Test: Breusch-Pagan-Godfrey	
F-Statistics	1.7467
Probability	0.1589

Source: *E-views. 9 (2026)*

Serial correlation and heteroscedasticity are absent in the findings, hence showing that the model is valid.

5.0 Results Interpretation and Discussion

Regression results presented in Table 5 show that POS adoption variables have a positive influence on the financial performance of deposit money banks in Nigeria. The findings indicate that POS terminal deployment improves bank profitability, suggesting that expansion of POS infrastructure enhances revenue generation through transaction-based income. This is consistent with the findings of Oyasor (2025) and Madugba et al. (2021), who reported that POS infrastructure contributes positively to bank profitability.

The results further reveal that POS transaction volume has a positive effect on bank performance, implying that increased usage of POS systems strengthens revenue generation and operational efficiency. This supports the findings of Musa and Bassey (2025) and Mbotto et al. (2023), who established that higher POS usage improves financial performance and liquidity in deposit money banks.

Similarly, POS transaction value contributes positively to profitability, indicating that higher-value electronic transactions strengthen banks' income generation capacity. This aligns with Paymaster Frank and Binaebi (2019), who emphasized that electronic transaction value enhances bank earnings through fee-based income and reduced cash-handling costs.

In addition, the number of merchants using POS services is positively associated with bank performance, showing that wider merchant adoption enhances financial inclusion and increases transaction flows, which ultimately improves profitability. This finding is in line with Okoro et al. (2023) and Osakwe and Ezeaku (2022), who reported that broader adoption of electronic payment channels improves banking efficiency and performance.

Overall, the findings suggest that POS adoption strengthens bank performance in Nigeria through improved transaction efficiency, revenue diversification, and increased financial inclusion. This supports the financial intermediation theory, which emphasizes that efficient payment systems enhance the ability of banks to mobilize funds and improve profitability. The results are consistent with prior empirical evidence that electronic payment adoption significantly improves banking sector performance (Raymond et al., 2022; Agu and Nwankwo, 2019).

5.1 Theoretical Implications of the Findings

The findings of this study have important implications for the financial intermediation theory, which posits that banks serve as intermediaries that mobilize funds efficiently between surplus and deficit units. The positive and significant relationship between POS adoption variables and bank performance suggests that electronic payment systems enhance the efficiency of financial intermediation by increasing transaction speed, reducing cash handling, and improving liquidity management. This supports the argument that technological innovation strengthens the intermediation role of banks by expanding their capacity to mobilize deposits and generate fee-based income.

Furthermore, the study extends the financial intermediation theory by demonstrating that modern digital payment channels such as POS terminals are not only facilitators of transactions but also strategic tools that directly influence bank profitability. This implies that the theory, which traditionally emphasized physical banking activities, now accommodates digital financial infrastructure as a key determinant of banking efficiency and performance.

5.2 Practical Implications of the Findings

The findings of this study have several practical implications for deposit money banks, policymakers, and financial regulators in Nigeria. For deposit money banks, the results indicate that increased investment in POS infrastructure can significantly enhance profitability through higher transaction volumes, increased merchant participation, and improved fee-based income. Banks are therefore encouraged to expand POS deployment, particularly in underserved and rural areas, to deepen financial inclusion and increase transaction flows.

For policymakers and regulators such as the Central Bank of Nigeria, the findings highlight the importance of strengthening policies that promote cashless transactions and electronic payment adoption. Supportive regulatory frameworks, improved digital infrastructure, and enhanced cybersecurity measures are necessary to sustain the growth of POS usage and ensure its contribution to financial stability and economic development.

In addition, the results imply that improving merchant onboarding systems and reducing barriers to POS adoption will further enhance banking sector performance. This will not only improve bank profitability but also contribute to broader financial inclusion and efficiency in the Nigerian payment system.

5.3 Conclusion

This research sought to investigate the influence of POS adoption on the financial performance of some deposit money banks in Nigeria. The study used POS Terminal (POS_T), POS Transaction Volume (POS_Vol), POS Transaction Value (POS_Val), and Number of Merchants using POS (MERCH) as predictors in predicting the financial performance of the banks through Return on Asset (ROA). Based on panel data estimation using the fixed and random effects model, the results show that all factors under POS adoption positively and significantly impact bank performance.

5.4 Recommendations

- a. Expansion of POS Infrastructure Across Strategic Locations: Deposit money banks in Nigeria should strategically expand their POS terminal deployment, particularly in underserved rural and semi-urban areas. This expansion should not only focus on increasing the number of terminals but also on improving network reliability, transaction speed, and uptime efficiency. Banks should also invest in regular maintenance and upgrading of POS systems to reduce transaction failures and enhance customer satisfaction, which in turn will strengthen revenue generation.
- b. Strengthening Merchant Acquisition and Retention Strategies: Banks should develop structured merchant acquisition programs aimed at increasing the number of businesses using POS services. This can be achieved through reduced onboarding requirements, flexible commission structures, and targeted incentives for high-volume merchants. In addition, banks should provide continuous merchant support services such as training, dispute resolution mechanisms, and technical assistance to ensure sustained usage of POS services.
- c. Promotion of High-Value and High-Volume POS Transactions: Banks should introduce incentive schemes such as cashback benefits, reduced transaction charges for high-volume merchants, and loyalty rewards for consistent POS usage. Furthermore, awareness campaigns should be conducted to encourage customers and merchants to shift from cash-based transactions to POS-based payments. This will increase transaction intensity, thereby improving fee-based income and overall bank profitability.
- d. Strengthening Policy and Digital Payment Integration Frameworks: Regulatory authorities, particularly the Central Bank of Nigeria, should enforce policies that promote full integration of electronic payment channels within the banking system. This includes improving interoperability among banks, fintechs, and payment service providers. Additionally, investments in digital infrastructure, cybersecurity systems, and real-time settlement platforms should be prioritized to ensure seamless POS operations and reduce system disruptions.
- e. Improvement of Digital Financial Inclusion Strategies: Banks and policymakers should intensify efforts to deepen financial inclusion by linking POS expansion with broader financial access initiatives. This includes targeting unbanked populations, simplifying account opening processes, and integrating POS services with mobile banking platforms. Such integration will expand the customer base, increase transaction flow, and enhance overall banking sector performance.

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