



EFFECT OF FINANCIAL TECHNOLOGY (FINTECH) ON BANKING SECTOR PERFORMANCE IN NIGERIA

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ABSTRACT

This study empirically examined the effect of financial technology (Fintech) on bank performance in Nigeria for the period of 2015-2025. To be more precise, the research looked at how point of sale (POS) and mobile banking (MOB) affected Nigerian banks' performance. The research concentrated on First Bank, UBA, GTCO, Access, and Zenith, which are together referred to as FUGAZ, the first-tier banks by total assets. The CBN statistics bulletin and the annual financial statements of banks are the sources of data on return on asset (a financial performance variable), point of sale, and mobile banking (a financial technology variable). Point of sale has a positive and substantial impact on the return on asset of Nigerian banks ($\beta = 0.359756$, $p < 0.05$), according to the panel random effect analysis that was used to estimate panel regression analysis. Additionally, the results demonstrated that mobile banking significantly and favourably affects Nigerian banks' return on assets ($\beta = 0.014960$, $p < 0.05$). The study's conclusions suggest that financial technology significantly and favourably affects Nigerian banks' financial performance.

Keywords: Fintech, Fintech innovations, Banking sector, Bank performance, Nigeria

1.0 Introduction

Global economic development is being greatly impacted by the digital economy, which is increasing efficiency and fostering innovation and economic inclusivity (Ihionu et al., 2025). Targeted applications, including digital payments, wealth management, lending, and investment services, have resulted from this innovation (Karsh & Abufara, 2020). Financial technology, or Fintech, has improved financial inclusion and transformed the banking sector by opening up new markets and offering new goods and services (Iserameiya et al., 2025). Additionally, fintech has increased demand for deposit money banks' goods and services, fostering competition and providing high-quality, client-focused services (Thakor, 2020). Financial technology has accelerated the speed of technological updates, improved performance, optimised efficiency, and encouraged a shift in financial institutions' business strategy as the financial industry has evolved (Li et al., 2021).

With the introduction of financial technology (fintech), the Nigerian banking industry has undoubtedly seen substantial changes. Nigerian banks still need to improve their performance by using fintech as much as possible, nevertheless. The banking industry's digital platform performance is uneven; some banks are investing heavily in digital solutions, while others are falling behind. Concerns about infrastructure, cybersecurity, and compliance have grown as a result of fintech adoption. Nigeria lags considerably behind other financially sophisticated nations in terms of financial technology and development. Because of this, banks have had varying degrees of success using digital assets to generate profits. The profitability of the different fintech channels and services in the banking sector was not specifically mentioned in the research (Anzor et al., 2026; Akutson & Sani, 2026; Iserameiya et al.,



2025; Ekpuké & Ehiedu, 2025). This research is essential since there isn't a definitive solution, particularly in Nigerian financial environments.

The study's main goal is to look at how financial technology affects Nigerian deposit money banks' financial performance. The particular goals are to examine how mobile banking affects banks' return on assets and assess how point of sale affects Nigerian banks' return on assets. It is important to remember that the scope included first-tier institutions from 2015 to 2025, including FUGAZ-First Bank, United Bank for Africa, UBA, Guarantee Trust Bank (GTB), Access Bank, and Zenith Bank. The literature review, research methodology, results, discussion, and conclusion make up the remaining portion of the work.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Financial Technology (FinTech)

A digital technology platform or service that offers banking and financial services is known as financial technology (Youbem, 2021). Financial services and technology might be seen as a new business model (Kurniasari et al., 2021). It illustrates how conventional banking has changed as FinTech has developed. Facilities for carrying out bank transactions, such as online banking, ATM transactions, mobile banking, Point of Sale (PoS) transactions, and other digital payment services that streamline banking systems and operations, are included in financial technology services. These improved digital financial services are essentially designed to satisfy clients' expanding requirements (Iserameiya et al., 2025).

2.1.2 Point of Sale

Point of Sale (POS) terminals are electronic devices used by retailers to take debit or credit card payments from consumers, enabling a real-time procedure to authorise and record the transaction, according to the World Bank (2023). Additionally, Chen (2023) described Point of Sale as a non-cash payment method. According to the Central Bank of Nigeria (2022), a point-of-sale (POS) terminal is a device that allows cardholders to withdraw cash and use their debit or credit card to make purchases at the point of sale. Furthermore, a Point of Sale (POS) system is a hardware and software combination that allows shops to monitor inventory, make transactions, and get real-time business analytics (Ogunleye & Adebayo 2021). Point of Sale, according to IBM (2022), refers to the location and technology used to complete a sale transaction. This includes hardware (such as terminals, scanners, and printers) and software that records the data and conducts the transaction.

2.1.3 Mobile Pay

According to the GSM Association (2023), mobile payments are defined as financial transactions carried out via a mobile device that enable consumers to send, receive, and keep money without using the conventional banking system. However, according to Kenton (2023), mobile payment refers to a kind of payment performed using a mobile device, such as a smartphone or tablet, where the consumer makes purchases utilising contactless technology or mobile apps. Consequently, the Central Bank of Nigeria (2022) defined mobile payment as the process by which mobile phones enable financial transactions, such as payments for utilities, airtime, money transfers, and transactions through mobile money services, primarily through mobile money service providers. OECD. (2022) conceptualised mobile payments as digital financial services that enable consumers to use mobile devices to pay for goods and services or transfer funds, often through mobile wallets or payment apps. Ajayi and Okonkwo (2021) added that mobile pay is an innovation in financial technology that allows users to conduct monetary transactions using smartphones, playing a crucial role in enhancing financial inclusion in underserved communities.

2.1.4 Banking Sector Performance

Profit a bank can produce in order to maintain its viability is what determines its performance. Measuring it include consumer outreach and financial inclusion (Okey-Nwala, 2025), efficiency ratios, financial stability ratios, and profitability indices (ROA & ROE) (Aroghene et al., 2024). In this research, ROA is used.

2.2. Theoretical Review

2.2.1. Innovation Diffusion Theory (IDT)



Rogers proposed the idea of innovation diffusion in 1962. The four elements of the innovation process were identified by the theory: the innovation, the communication channels, the innovation's gradual spread, and the social system through which it is disseminated. He explained five types of adopters, including laggards, the eerily majority (eager to adopt), and the stages of the adoption process from awareness to confirmation. Action learning groups that wish to grow are willing to try new things, as theory would imply. The enhancement of current modes of operation, a consistent approach to performance, pre-testing capability, and the ability to identify any flaws are the five key components of innovations identified by the theory. Institutions may save money and gain a competitive advantage via innovation. Institutions would also have the chance to enter new markets and develop innovative customer service strategies. According to the theory's premises, communication channels between members of society are the means by which innovations are spread. Learning, forming opinions, making decisions, putting them into practice, and ongoing assessment are all steps in the adoption process (Iserameiya et al., 2025; Roger, 1962).

2.2.2. Technology Acceptance Model (TAM)

Davis (1989) asserts that the idea is associated with the acceptance of a new product or service, which requires an imaginative mind and an acceptable new technology. The TAM model sought to create a link between people's behavioural intent and their usage of digital services. According to the hypothesis, perceived utility and perceived ease of use are the two factors that determine whether a computer system—technology in this case—will be accepted by prospective users. Therefore, a person's real behaviour to accept and utilise novel digital services is determined by their behavioural intention, which is heavily influenced by how they see the innovation's worth in their daily lives. The degree of perception is determined by the simplicity and utility of the technology. Because they are likely to be highly helpful for the effective and high-quality delivery of services and have a greater degree of usability, the innovations in finance made possible by the use of digital technology play a critical role in banking performance.

2.3 Empirical Review

The findings of the research by Agbo et al. (2026) demonstrated the importance of FinTech in elucidating the role of financial services utilisation, loan availability, and cost implications. According to Anzor et al. (2026) empirical finding, the use of FinTech greatly increases bank profitability and guarantees operational effectiveness. Using ordinary least squares analysis, Akutson and Sani (2026) found that whereas web-pay and mobile pay are directly and significantly linked to financial inclusion, ATM use and POS transactions are indirectly and significantly associated.

In particular, Iserameiya et al. (2025) found a high and significant correlation between ATMs, mobile banking, and online banking services and banks' return on assets (ROA) in Nigeria. Additionally, the data show a non-significant positive association between P.O.S. service and ROA. Ekpukue and Ehiedu (2025) investigated how the growth of fintech affected Nigerian banks' profitability between 2015 and 2023. Based on transaction volumes, the findings demonstrate a positive and statistically significant relationship between fintech value and bank liquidity. Conversely, startup growth and fintech investment have detrimental but insignificant effects. According to the report, growing fintech is a solid strategy to boost Nigerian banks' profitability, mostly by generating value from transactions rather than via startup financing or growth.

According to Isibor and Emeje (2025), there is a significant correlation between fintech firms and financial advancement, which may be facilitated by increased infrastructure and public awareness. Alagbe and Yinus (2025) examined the effect of Fintech adoption on bank performance using the panel estimation test. It was discovered that the adoption of digital may account for significant variations in ROA; it is beneficial for banks that can use digital. According to Okey-Nwala (2025), the use of financial technology is significantly influencing banks' performance, as seen by the notable digital banking indexes.

Tang et al. (2024) estimated the association between Fintech and bank risk/liquidity using dynamic panel methodologies. Higher fintech growth was shown to be associated with changes in bank liquidity metrics and risk-taking; big and well-capitalized banks are better equipped to convert fintech exposures to profitability rather than increased liquidity pressure. The influence of digital channels (Internet

banking, mobile banking, electronic payments) on the performance of Nigeria's listed commercial banks was investigated in the research by Kolawole et al. (2024). The findings of the fixed effect research demonstrate that traditional profitability metrics are positively impacted by digital financial services, with bigger banks seeing greater benefits.

2.4 Gap(s) in Literature

Based on the empirical review of the extant literature, it can be denoted that a noticeable gap exists between financial technology innovation and financial performance of banks in Nigeria. Moreso, existing studies has not provided adequate justification for the type of banks sampled. Whereas, in the study, first tier banks category is sampled based on their large total asset size.

3.0 Methodology

3.1 Theoretical Framework and Research Design

Rogers (1962) Innovation Diffusion Theory (IDT) is used as the theoretical foundation for this study. Its application follows how new ideas and technologies spread within a social system over time, thereby affecting bank performance through expanded the range of digital financial technology (Fintech). This study is an ex post facto type of research.

3.2 Model Specification

The model specification was developed based on the theoretical literature and empirical study of Iserameiya et al. (2025) which focused on the effect of financial technology on performance of banking sector in Nigeria. The model is given by:

$$ROA_{it} = f(MOB_{it}, POS_{it}) \quad 1$$

Where: ROA denotes Return on asset (financial performance variable),

MOB denotes mobile banking

POS denotes Point of Sale terminal service, which are the components of financial,
 it, is time

f is functional notation.

The empirical specification of the model is:

$$ROA_{it} = \beta_0 + \beta_1 MOB_{it} + \beta_2 POS_{it} + \beta_i + \mu_t \quad 2$$

Where

it = specific time

$\beta_1 - \beta_2$ = are the parameters to be estimated, β_i is bank specific-random effect; and μ_t is the unobserved error term.

the variables are as earlier defined,

Apriori, expectation: $\beta_1, \beta_2 > 0$.

3.3. Definitions, Measurement of the Variables and Sources of Data

The definition of variables as well as their measurement is presented in Table 1

Variables	Definition	Measurement	Sources
Bank performance	Bank performance is associated with increased profitability; greater resources for financial intermediation, efficient service delivery, increased bank stability and quality financial products	Return on Asset (ROA), expressed as ratio of net profit to total assets	Bank Statement of Account
Mobile banking	Financial transactions via mobile device (phone and tablets)	Total value of transactions carried out on mobile banking services as ratio of total assets	CBN Bulletin
Point of sale	Terminals allow the payment for goods or services. Also, cash can be withdrawn, deposited and transferred.	Total value of POS transactions as ratio of total assets	CBN Bulletin

Source: Author's compilation (2026)

3.4. Data and Estimation Method

Panel data involving the 5 largest banks by total asset in Nigeria are used in the estimation. The banks include Access Bank PLC, First bank Nig. Ltd, Guarantee Trust Bank (GTCO), United Bank for Africa (UBA) AND Zenith Bank Plc. The banks constitute the biggest in the Nigerian banking industry, accounting for 80.5% of the industry's and are considered major players, often referred to as D- Tier -

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1 banks, the FUGAZ a condensation that denotes First Bank, UBA, GTCO, Access and Zenith. The period of investigation is 2015-2025. The study period was chosen based on data availability, as well as characterizing the period of increased digital banking in Nigeria. The data were sourced from individual banks website, Central Bank of Nigeria's Statistical Bulletin (various issues). Given the nature of the study (i.e time series-cross-sectional), a panel data approach is utilized for the empirical estimation.

4.0 Result and Discussion

4.1 Preliminary Analysis

Table 4.1 Descriptive Statistics

	ROA	POS	MOB
Mean	9.875091	17.36091	267.0727
Minimum	1.080000	0.360000	109.6000
Maximum	33.80000	76.40000	486.0000

Source: Author's Computation, 2026

Table 4.1 evidently showed that ROA, POS and MOB on the average produced a coefficient value of 9.875091, 17.36091 and 267.0727 which varies from minimum values of 1.080, 0.360 and 109.60 to maximum values of 33.80, 76.40 and 486.00. This clearly indicates that the variables rotate around the mean.

Table 4.2 Correlation Statistics

	ROA	POS	MOB
ROA	1.000000	0.531573	0.525223
POS	0.531573	1.000000	0.698313
MOB	0.625223	0.698313	1.000000

Source: Author's Computation, 2026

Table 4.2 revealed that the correlation matrix indicates a positive relationship among the variables. In particular, POS and MOB moved directly with ROA with 0.53% and 0.63% respectively. Notably, the values lie within the region line accepted for correlation statistics. Thus, no concern for collinearity and multicollinearity.

Table 4.3 Hausman Test for Cross-Section Random Effect

The result of the Hausman test was employed to choose the best and presentable result between the fixed and random effect results.

Reported Coeff.	
Statistic	P.V%
0.264876	0.8760

Source: Author's Computation, 2026

Report of Table 4.3 explored that chi-stats has 0.264876 with a p.value of 0.876 which is insignificant at 5%. Accordingly, random effect was chosen to represent the model estimation on the relationship between Fintech and performance of selected banks in Nigeria.

4.2 Estimation Test

Table 4.4 Panel Random Effect

Variables	Coefficients	t.values / (prob.)
POS	0.359756	78.35737 (0.0000)
MOB	0.014960	17.26950 (0.0000)
C	0.366111	1.500097 (0.1396)
R ² = 0.805679 Adj. R ² = 0.765512	F Stats = 5990.682	DWT = 1.867

Source: Author's Computation, 2026

According to result obtained in Table 4.4, it can be echoed that coeff. of determination adjusted for degrees of freedom amounts to 76.555 of the net systematic change in bank financial performance in Nigeria which was captured by ROA is explained by financial technology variables (POS and MOB).



To ascertain this claim, the overall model amounts to 5990.68 which claimed that the model is statistically significant in its overall. Moreso, Durbin Watson value of 1.867 declined the possibility of autocorrelation, thereby affirming that the result presented in this study can be used for policy making and formulation.

Notably, POS transactions have a positive and significant effect (0.359756; $p = 0.0000$) on financial performance of banks. This indicates that greater adoption of POS payments reduces reliance on traditional banking halls, further enhancing bank performance. Moreso, it implies that, people do not need to travel for kilometers before accessing banking services, rather, with the advent of POS adoption banks services are easily accessible. This result invalidates the empirical finding of Akutson and Sani (2026) that POS negatively and insignificantly promotes bank performance, rather, the result corroborates with the finding of Anzor et al. (2026) that POS adoption greatly enhances bank performance in Nigeria.

The coefficient of mobile banking as seen from the result positively and significantly (0.014960; $p = 0.0000$) affect bank performance. By implication, this connotes that the issues of weak institutional infrastructure and cost structured of banks has been eliminated through the advent of mobile banking innovation. With the aid of phones, laptop and similar devices that houses bank application, banking business can be easily carried out without stress and ache. This means banking services can be assessed at any point in time and at any where without need for bank visit. The result corresponds with the position of Iserameiya et al. (2025) that mobile banking significantly enhances bank performance in Nigeria.

4.3 Discussion

Empirically, the result expressed that point of sale (POS) has a positive and significant effect as well as mobile banking (MOB) having a positive and significant effect on bank performance in Nigeria. Ideally, the result is expected but does not mean that the adoption of point of sale and mobile banking are not faced with challenges. To the former, the cost attached to POS may be a red flag in some cases while to the later, network may discourage the users. Therefore, management of banks are to ensure that cost attached to POS are reviewed and quality network are also ensured.

In the end, banks that adopt financial technology (FinTech) are prone to rapid growth and performance in operation, total asset, customer drive etc. Fintech technologies have significantly enhanced banks and active users in rural and informal regions, according to Eze and Nwankwo (2023) and Isibor and Emeje (2025). It suggests that consumers are content with the availability of fintech in the nation and supports KPMG's (2021) assertion that Nigeria's fintech sector has a lot of potential for financial democratisation. Therefore, financial technology is a drive to ensuring greater bank financial performance.

5.0 Conclusion and Recommendation

The ultimate concern of investigation in this study is the extent to which financial technology has affected bank financial performance of deposit money banks in Nigeria. To achieve this, point of sale (POS) and mobile banking (MOB) services were captured as measure of financial technology while return on asset (ROA) was used a metric to capture bank performance of selected banks in Nigeria. The study made use of panel regression estimate and found through the Hausman test that random effect is best suitable for the analysis. Accordingly, the finding showed that POS positively and significantly impacted return on asset of bank, the same way mobile banking positively and significantly affected return on asset of banks in Nigeria.

This result implies that banks has moved from traditional means of doing business to digital banking, thereby providing digital banking services through cards and applications on phones, tables, laptops etc. By so doing, banks have integrated to digital banks through financial technologies. As such, the study aligns with the position and empirical finding of existing studies, such as Anzor et al. (2026), Isibor and Emeje (2025), Iserameiya et al. (2025) that financial technologies (FinTech) positively and significantly stimulate bank financial performance in Nigeria.

Recommendations

Based on the outcome of the findings, the following recommendations are proffered.



- i. Charges on point of sale (POS) need to be reviewed, this is important because customers are price sensitive. As such, if the cost becomes unbearable it will negatively affect the bank. Moreso, more POS centres should be created and license should be issued to whoever in need of such. The more POS centres can be available in the country, the merrier financial inclusion and banking services can be guaranteed, which in the long run lead to bank performance.
- ii. Banks should improve in quality service which can make banking transaction smoother without network glitch. This can be made to practice by sourcing for good network provider as used in other developing countries where banks with financial technologies used good network service.

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