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Digital channels and internet banking as drivers of financial performance in Nigerian deposit money banks

EZE Nnanyelugo Onyedikachi

Department of Accountancy, University of Nigeria, Nsukka, Nigeria

Email: nnanyelukachy@gmail.com

Ugwoke Robinson Onuora

Department of Accountancy, University of Nigeria, Nsukka, Nigeria

Email: robinson.ugwoke@unn.edu.ng

Ugwoke Obioma Vivian

Department of Accountancy, University of Nigeria, Nsukka, Nigeria

Email: Obioma.ugwoke@unn.edu.ng

Ozor David Chidi

Department of Accountancy, University of Nigeria, Nsukka, Nigeria

Email: chizorhimself@yahoo.com

Ozoji Amara Priscilia

Department of Accountancy, University of Nigeria, Nsukka, Nigeria

Email: amara.okoye@unn.edu.ng

Abstract---This study investigates whether digital channels and internet banking are associated with the financial performance of deposit money banks (DMBs) in Nigeria. Over the last decade, the rollout of automated teller machines (ATMs), point-of-sale (POS) infrastructure, and web-based banking platforms has reshaped how Nigerian banks deliver services and interact with customers, prompting sustained interest in whether this infrastructure translates into stronger profitability. Drawing on secondary data for the period 2009 to 2024, obtained from the Central Bank of Nigeria (CBN), the Nigeria Inter-Bank Settlement System (NIBSS), and the annual reports of sampled banks, the study applies multiple regression analysis to examine how digital channel deployment and internet banking usage relate to two profitability indicators: return on assets (ROA) and return on equity (ROE). The results show that digital channels and internet

banking are each positively and significantly associated with bank profitability. This suggests that expanding digital infrastructure and deepening online banking adoption go hand in hand with stronger profitability, greater operational efficiency, and improved competitive positioning. The study concludes that well-managed digital infrastructure is a meaningful contributor to operational efficiency and recommends that Nigerian banks sustain investment in digital transformation.

Keywords---Digital channels, internet banking, financial performance, ATM, POS, ROA, ROE, Nigeria.

Introduction

Banking systems worldwide are being reshaped by digital technology, and ATMs, POS terminals, and internet banking platforms now sit at the center of that shift. In Nigeria, the pace of this transformation has picked up markedly since the early 2010s, driven jointly by regulatory encouragement, a wave of fintech innovation, and customers who increasingly expect banking to be fast, secure, and available around the clock. The past ten years have seen the ATM and POS terminal base expand substantially, while internet banking has moved from a peripheral offering to a core channel of service delivery. Beyond simply widening access to banking services, these changes have altered how banks incur costs, how they engage customers, and ultimately how they generate profit. Digital channels lower the cost of maintaining a physical branch network, support higher transaction throughput, and give customers more freedom in how and when they bank. Internet banking, in particular, cuts down the need for face-to-face branch visits, which in turn can improve operational efficiency and reduce costs for the bank.

What remains less settled, however, is whether these technological gains actually show up in measurable profitability outcomes. Some researchers argue that digital channels strengthen profitability by cutting costs and opening new revenue streams (Isa-Olatinwo, Uwaleke and Ibrahim, 2022; Otonne and Ige, 2023; Aniekan, Eno and Uwem, 2024), while others caution that the upfront investment and ongoing maintenance burden of digital infrastructure can erode short-term gains (Ogbonna, Okaro, and Igwe, 2021; Mbagwu & Obonofiemro, 2023). This study speaks to that disagreement by empirically testing how digital channels (ATMs and POS) and internet banking relate to the financial performance (ROA and ROE) of Nigerian deposit money banks between 2009 and 2024.

Literature Review

Conceptual Review

Digital Channels

Digital channels are the electronic touchpoints through which bank customers transact and access services without needing to enter a branch — ATM networks, POS devices, mobile apps, and online portals all fall under this umbrella. For the purposes of this study, digital channels are captured empirically through the number of ATMs and POS terminals a bank has deployed.

Internet Banking

Internet banking refers to the delivery of banking services over web-based platforms, letting customers transact, pay bills, and manage their accounts without visiting a branch in person. Because it removes the need for physical interaction, it tends to lower transaction costs for the bank while widening the pool of customers it can realistically serve — a customer only needs an internet-enabled device, whether a computer or a mobile phone, to reach their account at any time. In this study, internet banking is operationalized as the volume of transactions conducted through online banking platforms.

Financial Performance

A firm's financial performance is ultimately expressed through the profit it generates, and this can be captured either through accounting-based measures, which look backward at realized results, or market-based measures, which reflect investors' forward-looking expectations (Peloza, 2009). Profit is widely treated as the clearest single indicator of firm performance, resting on the underlying premise that, under competitive market conditions, the pursuit of profit maximization pushes firms toward a more efficient use of resources (Pandey, 2005). For banks specifically, profitability is most commonly assessed through ROA and ROE.

Return on Assets (ROA) captures how effectively a bank converts its asset base into profit; a higher ROA points to more efficient asset utilization, and it is calculated as net profit divided by total assets. Return on Equity (ROE) instead measures profitability relative to shareholders' equity, with a higher figure signaling stronger returns for shareholders; it is calculated as net profit divided by total equity.

Theoretical Framework

Diffusion of Innovation Theory

This study rests on Everett Rogers' Diffusion of Innovation (DOI) theory, which describes how a new idea or technology spreads over time among members of a social system, moving through particular communication channels as it goes (Rogers, 1995). In Rogers' formulation, adoption is shaped by five characteristics of the innovation itself: how much of an improvement it offers over what it replaces (relative advantage), how easy or difficult it is to understand and use (complexity — conceptually close to the perceived-ease-of-use construct in the Technology Acceptance Model), how well it fits with adopters' existing values, past experience, and needs (compatibility), whether it can be tried out on a small scale before full commitment (trialability), and how visible its results are to others (observability). The theory has been applied widely in information systems research to explain why some technologies are taken up quickly while others stall. Rogers identifies four elements that jointly drive how an innovation spreads: the innovation itself, the communication channels through which knowledge of it travels, the time it takes to be adopted, and the social system within which adoption occurs. Sustained adoption depends heavily on the people involved, and diffusion typically needs to cross a critical mass of adopters before it becomes self-sustaining. Adopters themselves are commonly grouped into innovators, early adopters, early majority, late majority, and laggards, based on how quickly they

take up a new idea relative to others in their system. Because the pattern of diffusion depends on both the type of adopters involved and the specifics of the innovation-decision process, it can look quite different across contexts.

Applied to this study, Diffusion of Innovation theory offers a lens for understanding why Nigerian banks have taken up ATMs, POS terminals, and internet banking at the pace they have: banks are more likely to adopt these technologies when they see them as compatible with existing operations, clearly advantageous, and visibly linked to improved performance. Internet banking and digital channels are treated here as exactly this kind of innovation within the financial sector.

Empirical Review

Existing empirical work on the link between financial innovation and bank performance is far from unanimous. A substantial body of studies reports a positive association between financial innovation and bank performance (Akani and Tony-Obiosa, 2020; Ibekwe, 2021; Isa-Olatinwo, Uwaleke, & Ibrahim, 2022; Mbagwu & Obonofiemro, 2023; Ashiru, Balogun and Paseda, 2023; Nwankwo and Okoli, 2023; Adesoye, Oluyemi and Obamuyi, 2024), while a smaller set finds a negative relationship (Odeleye and Oyeneye, 2022), and others find no statistically significant relationship at all (Nwankwo and Okoli, 2023; Monday, Dopemu and Ademola, 2024).

Several Nigeria-focused studies support the positive view. Isa-Olatinwo et al. (2022) linked the uptake of digital financial services to stronger bank performance, while Akani and Tony-Obiosa (2020) found that internet banking and ICT investment were positively associated with ROE. Working with time-series data and OLS regression, Ibekwe (2021) found that ATM, POS, web, and mobile banking channels each had a significant positive effect on the ROA of Nigerian DMBs. In a similar vein, Adesoye et al. (2024), studying banks in southwest Nigeria, found that ATM usage, mobile banking, internet banking, and POS transactions were all positively and significantly related to return on assets, return on equity, and net income. Outside Nigeria, Brian (2020) examined tier-two banks in Kenya and found that online banking, mobile banking, and ATM usage each had a significant positive effect on ROA. Mbagwu and Obonofiemro (2023) compared the pre- and post-COVID-19 periods for Nigerian DMBs between 2000 and 2020 and found that ATM, internet banking, POS, and mobile transactions were all positively and significantly related to ROA, though they cautioned that technological disruption tends to push up operational costs in the short run. Using an ARDL model on 2012–2021 data drawn from NDIC, NIBSS, and CBN sources, Ashiru et al. (2023) similarly found that ATM usage, mobile banking, POS, and online banking were all positively associated with both ROA and ROE.

Other studies complicate this picture. Dermaku, Hajdari and Dermaku (2023), examining Kosovar banks from 2010 to 2021 using OLS, found that e-payments boosted profitability, but that ATM usage actually reduced it, while POS transactions showed no significant relationship with profitability at all. Odeleye and Oyeneye (2022) found that financial technology was negatively associated with financial inclusion in Nigeria. Isaac, Adeniran, and Omotayo (2023) reported that internet banking adoption improves operational efficiency, a finding broadly

in line with Akani and Tony-Obiosa's (2020) earlier work using FGLS regression on a panel of fourteen Nigerian banks (2009–2017), which found that ATM and electronic funds transfer usage reduced ROE while internet and mobile banking increased it — illustrating that even within a single study, different digital channels can pull performance in different directions. Nwankwo and Okoli (2023), studying Nigerian DMBs from 2010 to 2021 with CBN data, found that internet banking had a significant positive effect on profitability, ATM usage had a positive but non-significant effect, and mobile banking and POS operations were both negatively (and non-significantly) related to profitability. Ameh, Thomas and Doshiro (2020), using OLS on CBN and NDIC data for 2008–2017, found that ATM and mobile banking adoption improved bank performance while POS usage had the opposite effect. Finally, Monday, Dopemu and Ademola (2024), applying FGLS regression to nine banks over 2008–2023, found that ATM and POS transactions were significantly related to both ROA and ROE, while web and mobile transactions showed no significant effect on either measure.

Taken together, this literature points to a genuinely mixed picture — not just across studies, but sometimes within them, where different digital channels move performance in opposite directions. This inconsistency is part of the motivation for the present study, which extends the observation window to 2009–2024 and examines digital channels and internet banking jointly to help clarify where the balance of evidence lies for the Nigerian banking sector.

Methodology

Research Design

The study adopts an ex-post facto research design, appropriate given its reliance on historical financial and technological data that the researchers did not manipulate.

Data Sources

Secondary data covering 2009–2024 were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin, Nigeria Inter-Bank Settlement System (NIBSS) reports, and the annual reports of the sampled deposit money banks.

Variables and Measurement

Dependent Variables: Financial performance is the dependent variable, proxied by return on assets (ROA), measured as profit after tax as a percentage of total assets, and return on equity (ROE), measured as profit after tax as a percentage of total equity.

Independent Variables: Two independent variables are examined as drivers of financial performance: digital channels, proxied by the number of ATM and POS terminals deployed, and internet banking, proxied by the volume of online banking transactions.

Control Variables: The model controls for bank-specific factors — leverage, size, and age — as well as macroeconomic conditions, namely GDP growth rate, inflation rate, and lending interest rate, all of which could plausibly influence the relationship between fintech adoption and bank financial performance.

Model Specification

The study is specified using the following econometric model:

$$FP_{it} = \beta_0 + \beta_1 DIC_{it} + \beta_2 IBT_{it} + \beta_3 FSIZ_{it} + \beta_4 LEV_{it} + \beta_5 AGE_{it} + \beta_6 GDPGR_{it} + \beta_7 INFR_{it} + \beta_8 INTR_{it} + \varepsilon_{it} \quad (1)$$

where FP denotes financial performance (ROA, ROE); DIC is the log of the number of digital channels (ATM and POS machines); IBT is the log of the volume of internet (web) banking transactions; FSIZ is the log of total assets; LEV is total liabilities divided by total assets (%); AGE is the number of years since incorporation; GDPGR is the percentage real GDP growth rate; INFR is the percentage change in the consumer price index; INTR is the percentage change in the lending interest rate; β_0 is the intercept; β_1 – β_8 are the coefficients of the independent variables; ε is the error term; and i denotes the firm observation. The a priori expectation is that β_0 through β_8 are all positive.

Estimation Technique

Ordinary least squares (OLS) regression was employed to estimate the model, and standard diagnostic tests confirmed its overall validity.

Results and Discussion

Descriptive Statistics

Table 1 summarizes the descriptive statistics for the study's variables.

Table 1. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Minimum	Maximum
ROA	220	1.336	2.659	-20.23	9.54
ROE	219	9.716	36.776	-394.32	122.8
DIC	89	4.306	1.168	2.16	7.58
IBT	221	7.922	1.594	6.2	10.38
LEV	220	90.948	19.184	28.43	254.75
SIZE	219	9.034	0.753	6.63	10.61
AGE	221	47.326	30.304	10	130
GDPGR	224	3.494	2.852	-1.79	8.04
INFR	224	14.79	6.168	8	32.5
INTR	224	16.014	2.065	11.48	18.99

Source: STATA 15 output (2025)

ROA, the first performance measure, averages 1.336 with a standard deviation of 2.659, ranging from a low of -20.23 to a high of 9.54. ROE, the second performance measure, is considerably more dispersed, averaging 9.716 with a standard deviation of 36.776 and a range spanning -394.32 to 122.8. Digital

channel deployment (DIC) has a mean of 4.306, a standard deviation of 1.168, and ranges from 2.16 to 7.58, while internet banking usage (IBT) averages 7.922 with a standard deviation of 1.594, ranging from 6.2 to 10.38.

Among the bank-specific controls, leverage averages 90.948 with a standard deviation of 19.184 (range: 28.43–254.75), bank size averages 9.033 with a standard deviation of 0.753 (range: 6.63–10.61), and bank age averages 47.326 years with a standard deviation of 30.304 (range: 10–130). Among the macroeconomic controls, real GDP growth averages 3.494% with a standard deviation of 2.852 (range: -1.79–8.04), inflation averages 14.79% with a standard deviation of 6.168 (range: 8–32.5), and the lending interest rate averages 16.014% with a standard deviation of 2.065 (range: 11.48–18.99).

Table 2. Correlation Matrix

Var.	ROA	ROE	DIC	IBT	LEV	SIZE	AGE	GDP	INFR	INTR
ROA	1.00									
ROE	0.86	1.00								
DIC	0.32	0.35	1.00							
IBT	0.26	0.44	0.31	1.00						
LEV	-0.27	-0.20	-0.07	0.29	1.00					
SIZE	0.41	0.27	0.04	0.23	-0.06	1.00				
AGE	-0.03	-0.03	-0.28	0.02	-0.09	0.53	1.00			
GDP	0.13	0.11	-0.17	-0.35	-0.05	-0.03	-0.08	1.00		
INFR	0.30	0.49	0.24	0.73	0.10	0.22	0.01	-0.09	1.00	
INTR	-0.02	-0.09	-0.16	-0.60	-0.32	-0.06	0.02	0.20	-0.01	1.00

Source: STATA 15 output (2025)

Note: Return on Assets (ROA); Return on Equity (ROE); Digital Channels (DIC); Internet Banking (IBT); Leverage (LEV); Bank Size (SIZE); Gross Domestic Product growth rate (GDP); Inflation Rate (INFR); and Interest Rate (INTR).

The correlation matrix points to a positive association between the dependent variables and both independent variables, while the pattern among the control variables is mixed: leverage, age, and the lending interest rate correlate negatively with performance, whereas size, GDP growth, and inflation correlate positively. Digital channels and internet banking both show a fairly strong positive correlation with ROA and ROE, a first indication that greater use of these technologies tends to go together with stronger profitability and shareholder returns.

Regression Analysis

The study uses OLS regression to test its hypotheses and to examine the cause-effect relationship between the dependent and explanatory variables. Table 3 presents the results.

Table 3. OLS Regression of Digital Channels and Internet Banking on ROA and ROE of DMBs

Variables	ROA	ROE
DIC	0.111 (0.096)*	1.340 (0.044)*
IBT	0.294 (0.047)**	4.252 (0.005)*
LEV	-0.019 (0.001)*	-0.201 (0.001)*
SIZE	0.399 (0.000)*	1.290 (0.172)
AGE	-0.005 (0.024)*	-0.016 (0.518)
GDPR	0.086 (0.007)*	1.143 (0.000)*
INFR	-0.024 (0.360)	-0.137 (0.599)
INTR	0.086 (0.206)	1.046 (0.127)
Constant	-4.269 (0.038)**	-38.155 (0.062)
F-Statistics	8.03 (0.0000)*	9.51 (0.0000)*
R-squared	0.4454	0.4873
Adj R-squared	0.3899	0.4361
VIF	3.80	3.80
Hettest	0.01 (0.9156)	2.28 (0.1313)
White IM Test	55.44 (0.1156)	57.25 (0.0867)
Obs	89	89

Source: STATA 15 output (2025)

Note: P-values are in parentheses; * and ** denote significance at the 1% and 5% levels, respectively.

Both digital channels and internet banking emerge as positive and significant predictors of financial performance. A one-unit increase in digital channel deployment is associated with a 0.111-unit rise in ROA and a 1.340-unit rise in ROE, while a one-unit increase in internet banking usage is associated with a 0.294-unit rise in ROA and a 4.252-unit rise in ROE. The model explains a substantial share of the variation in performance: the R-squared values of 0.4454 and 0.4873 indicate that roughly 44.54% and 48.73% of the variation in ROA and ROE, respectively, across the pooled banks from 2009 to 2024 is jointly accounted for by digital channels, internet banking, and the control variables. The remaining variation — 55.46% for ROA and 51.27% for ROE — is absorbed into the error term and likely reflects other explanatory factors not included in the model. The F-statistics of 8.03 and 9.51 (both significant at the 1% level) indicate that both models are well specified and suitable for statistical inference.

Overall, the regression results reinforce the correlation findings: digital channels and internet banking each exert a positive and statistically significant influence

on ROA and ROE, supporting their role as meaningful drivers of bank profitability.

Post-Estimation Diagnostic Tests

A battery of post-estimation diagnostics — a multicollinearity check, the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity, and the Breusch-Pagan Lagrangian Multiplier test for random effects — was run to confirm the validity of the OLS results. The Hausman test was also used to weigh the random-effects specification against the fixed-effects alternative.

Multicollinearity (Variance Inflation Factor) Test

A Variance Inflation Factor (VIF) test was used to check for multicollinearity among the independent variables. The mean VIF of 3.80 falls comfortably below the conventional threshold of 10, indicating that multicollinearity is not a concern.

Table 4. Variance Inflation Factor Test

Variable	VIF	1/VIF (Tolerance)
IBT	11.85	0.084404
INFR	6.73	0.148555
INTR	4.63	0.215928
AGE	1.66	0.603352
SIZE	1.59	0.628878
GDPR	1.45	0.691400
DIC	1.31	0.761093
LEV	1.20	0.830926
Mean VIF	3.80	

Source: STATA 15 output (2025)

Individual VIF values range from 1.20 to 11.85, with corresponding tolerance levels between 0.084404 and 0.830926. Because the mean VIF of 3.80 sits within the generally accepted range of 1 to 10, the explanatory variables do not exhibit problematic multicollinearity, supporting the reliability of the OLS estimates.

Heteroscedasticity Test

Both the Breusch-Pagan/Cook-Weisberg and White tests were used to check for heteroscedasticity in the dataset; the results appear in Table 5.

Table 5. Test for Heteroscedasticity (Hetteest)

Variable	Chi2(1) (BP/CW)	Prob>chi2 (BP/CW)	Chi2(1) (White)	Prob>chi2 (White)
ROA	0.01	0.9156	55.44	0.1156
ROE	2.28	0.1313	57.25	0.0867

Source: STATA 15 output (2025)

Neither test is significant at the 5% level for either dependent variable — the Breusch-Pagan/Cook-Weisberg test yields coefficients of 0.01 ($p = 0.9156$) for ROA and 2.28 ($p = 0.1313$) for ROE, while the White test yields 55.44 ($p = 0.1156$) for ROA and 57.25 ($p = 0.0867$) for ROE. Taken together, these results indicate that the residuals are homoscedastic, which supports the use of OLS for analysis and inference.

Hausman Test and Breusch-Pagan LM Test

The Hausman test was used to determine whether a fixed-effects or random-effects specification is more appropriate, with the null hypothesis favoring the random-effects model on efficiency grounds. The Breusch-Pagan Lagrangian Multiplier test was then used to compare the random-effects (GLS) model against the pooled OLS specification, with the null hypothesis being that no significant random effects are present in the model.

Table 6. Hausman Test and Breusch-Pagan Lagrangian Multiplier (LM) Test for Random Effects

Variable	Chi2(1) (Hausman)	Prob>chi2 (Hausman)	Chi2(1) (LM)	Prob>chi2 (LM)
ROA	2.48	0.9286	8.88	0.1014
ROE	3.56	0.8942	1.50	0.1104

Source: STATA 15 output (2025)

For both ROA and ROE, the Hausman test p-values exceed 0.05, favoring the random-effects model over fixed effects. The LM test likewise returns non-significant probabilities of 0.1014 (ROA) and 0.1104 (ROE), indicating no significant random effects in the model. On balance, these results support pooled OLS as the most appropriate estimator for this analysis.

Discussion

The finding that both digital channels and internet banking meaningfully improve bank profitability, as measured by ROA and ROE, sits comfortably within the Diffusion of Innovations framework, which holds that innovations perceived as clearly advantageous are adopted more readily and generate greater benefit for early adopters — often translating into a competitive edge over slower-moving rivals.

This result is broadly consistent with prior Nigerian evidence. It echoes Isa-Olatinwo et al. (2022) on the performance benefits of digital financial services and Akani and Tony-Obiosa (2020) on the ROE-boosting effect of internet banking; the particularly strong internet banking effect found here likely also reflects how much more Nigerian customers have come to rely on online banking since the COVID-19 pandemic, when digital channels became essential for keeping banking operations running. The result is also in line with Ibekwe (2021), who found positive effects of ATM, POS, and web banking on ROA, and with Mbagwu and Obonofiemro (2023), who reported similar positive effects for ATM, internet banking, POS, and mobile transactions on ROA while also flagging that technology disruption tends to raise costs in the short run — a caveat this study's findings do not contradict. It further aligns with Ashiru et al. (2023) on the positive ROA and ROE effects of ATM, mobile, POS, and online banking usage; with Nwankwo and Okoli (2023) on the profitability benefits of internet banking; and with Adesoye et al. (2024) on the positive effects of ATM, mobile banking, internet banking, and POS on ROA, ROE, and net income. It is also consistent with Okey-Nwala (2025), who identified digital banking adoption as a key driver of financial performance in Nigeria, and with Isaac et al. (2023), who linked online banking platforms to lower transaction costs and a wider customer base. That said, the upfront and ongoing costs of building and maintaining digital infrastructure remain non-trivial, underscoring the need for disciplined management and strong cybersecurity practices if banks are to sustain profitability over the long run.

The findings diverge, however, from Odeleye and Oyeneye (2022), who found a negative relationship between financial technology and financial inclusion, and from Monday et al. (2024), who found no significant effect of web and mobile transactions on ROA or ROE.

Conclusion and Recommendations

This study concludes that digital channels and internet banking make a significant positive contribution to the financial performance of deposit money banks in Nigeria. The expansion of ATM and POS networks alongside growing adoption of online banking platforms has strengthened bank profitability, underscoring the strategic value of continued fintech integration across the banking sector. Based on these findings, the study offers the following recommendations:

- i. Investment expansion: Banks should continue expanding their ATM and POS networks while improving the reliability and accessibility of this infrastructure.
- ii. Cybersecurity: Banks and regulators alike should strengthen cybersecurity frameworks to protect online platforms and safeguard digital transactions.
- iii. Customer awareness: Banks should invest in ongoing customer education and sensitization campaigns to build trust and confidence in digital banking channels.
- iv. Regulatory oversight: Regulators should develop stronger digital banking frameworks that encourage innovation while keeping systemic risks in check.
- v. Internet banking platforms should be continually upgraded to improve speed, security, and ease of use.

- vi. Bank management should integrate digital transformation initiatives more closely with broader performance objectives.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Adesoye, Y. R., Oluyemi, O. P. & Obamuyi, T. M. (2024). Effect of Financial Technology on Financial Performance of Deposit Money Banks in Southwest, Nigeria. *International Journal of Research and Innovation in Social Science*, 8(1), 2454-6186
2. Akani, H. W., & Tony-Obiosa, C. (2020). Financial innovation and bank profitability in Nigeria. *Journal of Banking and Finance Studies*, 7(3), 42–58.
3. Ameh, J., Thomas, K. B. & Doshio, M. U. (2020). *Effects of Bank's Electronic Innovations on the Financial Performance of Deposit Money Banks in Nigeria*. Nasarawa State University, Keffi, 1099
4. Ashiru, O., Balogun, G., & Paseda, O. (2023). Financial innovation and bank financial performance: Evidence from Nigerian deposit money banks. *Research in Globalization*, 2-7. <https://doi.org/10.1016/j.resglo.2023.100120>
5. Brian, N. M. (2020). *Effects of Financial Technology on the Financial Performance of Tier II Banks in Kenya*. United States International University-Africa, 1.
6. Central Bank of Nigeria (CBN). (2012). National Financial Inclusion Strategy. Abuja: Central Bank of Nigeria.
7. Central Bank of Nigeria (CBN). (2018). Revised National Financial Inclusion Strategy. Abuja: Central Bank of Nigeria.
8. Central Bank of Nigeria (CBN). (2024). *Statistical Bulletin*. Abuja.
9. Dermaku, H., Hajdari, M., Dermaku, K. & Hoti, L. (2023). An empirical analysis of Fintech's impact on financial performance of banks in Kosovo. *Journal of Emerging science*, 7(3), 890-896.
10. Ibekwe, A. O. (2021). Financial innovation and performance of deposit money banks in Nigeria. *International Journal of Business and Law Research*, 9(1), 162-173.
11. Isaac, O. I., Adeniran, A. A. & Omotayo, F. I. (2023). The effect of fintech services on financial performance of Nigerian deposit money banks. *International Journal of Research and Innovation in Social Science*, 1(1), 1-12
12. Isa-Olatinwo, A., Uwaleke, U., & Ibrahim, U. A. (2022). Impact of digital financial services on financial performance of commercial banks in Nigeria. *International Journal of Economics and Management Systems*, 7(1), 300–315.
13. Iyobo, E. B., & Shaba, M. (2025). Digital Banking and the Performance of Deposit Money Banks in Nigeria. *African Scholar Publications & Research International*, 9(7), 108-132.

14. Mbagwu, O. N., & Obonofiemro, G. (2023). Technological disruption and deposit money banks financial performance in the pre- and post-COVID-19 pandemic in Nigeria. *International Journal of Management & Entrepreneurship Research*, 5(4), 218–232.
15. Monday, J. U., Dopemu, O. S., and Ademola, B. I. (2024). Financial Innovation and Financial Performance of Nigerian Listed Deposit Money Banks: Evidence from Panel Data Modelling, *European Journal of Accounting, Auditing and Financial Research*, 12(9), 32-52.
16. Nigeria Inter-Bank Settlement System. (2024). *Industry Payment Report*.
17. Nwankwo, B. C. & Okoli, O. C. (2023). Effect of financial technology on the profitability of deposit money banks in Nigeria. *UBS Journal of Business and Economic Policy*, 1(2), 52 – 71.
18. Odeleye, A. T., & Oyeneye, I. (2022). Impact of financial technology (Fintech) on financial inclusion in Nigeria. *Fuoye Journal of Finance and Contemporary Issue*, 2(1), 72-86.
19. Okey-Nwala, P. O. (2025). Financial Technology and Banking Sector Performance in Nigeria. *IRASS Journal of Economics and Business Management*. 2(3), 8-14.
20. Pandey, I. M. (2005). *Financial Management*. (9th Ed) New Delhi: Vikas publishing House Pvt Limited.
21. Peloza, J. (2009). The Challenge of Measuring Financial Impacts from Investments in Corporate Social Performance. *Journal of Management*, 35(6), 1518–1541
22. Rogers, E. M. (1962). *Diffusion of Innovations*. New York: Free press of Glenco.
23. Rogers, E. M. (1995). *Diffusion of Innovations* (4 ed.). New York: The Free press.
24. Sopita, O. O, Sheriffideen, T. O, Oluwatoyin, D., Oluwabusola, O., Francis, A. S., & Ogunlade, E. S., (2025) Effect of Electronics payment Channels on the Performance of Commercial Banks in Nigeria: *Assian Journal of Probability and Statistics*, 27 (2); 123-137