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Original Research Article

Fintech and the Profitability of Deposit Money Banks in Nigeria

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Abstract: This study empirically examines the effect of Financial Technology (Fintech) adoption on the profitability of Deposit Money Banks (DMBs) in Nigeria over a 26-year period from 2000 to 2025. Adopting an ex-post facto research design, secondary time-series data were compiled from Central Bank of Nigeria (CBN) Statistical Bulletins, Nigeria Inter-Bank Settlement System (NIBSS) reports, and bank financial statements. Bank profitability was operationalised using Return on Assets (ROA), while Fintech adoption was disaggregated into three core transaction channels: Mobile Banking Transaction Value (LnMBTV), Point-of-Sale Transaction Value (LnPOSTV), and Web/Internet Banking Transaction Value (LnWIBTV). Employing Ordinary Least Squares (OLS) multiple regression analysis alongside rigorous diagnostic and stationarity tests, the empirical results reveal that Mobile Banking Transaction Value and Web/Internet Banking Transaction Value exert positive and statistically significant effects on bank profitability (ROA). Conversely, Point of Sale Transaction Value demonstrated a negative and statistically insignificant impact, largely attributable to high terminal acquisition expenses, maintenance overheads, and aggregator cost-sharing structures. The overall model yielded an R2 of 0.5842 and an F-statistic of 10.3082 ($p < 0.01$), confirming robust explanatory power. Grounded in the Technology Acceptance Model (TAM), Innovation Diffusion Theory, and the Resource-Based View (RBV), the study concludes that digital banking channels are vital drivers of asset efficiency and fee-based income. The research recommends strategic investments in mobile infrastructure and cybersecurity, paired with cost optimisation and restructuring of aggregator fees for POS networks, to maximise net profitability gains from digital financial services in Nigeria.

Keywords: Deposit Money Banks, Financial Technology, Mobile Banking, Return on Assets, Web/Internet Banking.

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1.0 Introduction

1.1 Background to the Study

Over the past two decades, the global financial landscape has undergone a significant transformation driven by the rapid evolution and integration of Financial Technology (Fintech). In developing economies, particularly within Sub-Saharan Africa, Fintech has shifted from being primarily a supportive back-office tool to becoming an important driver of retail banking operations, service delivery, financial innovation and strategic competition (Gomber et al., 2018). In Nigeria, the banking sector, particularly Deposit Money Banks (DMBs), has transitioned from traditional paper-based banking and physical queues to multi-channel digital banking ecosystems supported by Automated Teller Machines (ATMs), Point of Sale (POS) terminals, internet banking platforms, mobile banking applications and other electronic payment channels (Central Bank of Nigeria [CBN], 2023). The modern era of technology adoption in Nigerian banking gained momentum with early computerization and electronic banking initiatives and received significant structural impetus from the banking consolidation exercise of 2004/2005 and the implementation of the CBN Cashless Policy in 2012. The policy was designed to reduce the cost of cash handling, promote electronic payment systems, improve payment efficiency and deepen financial inclusion. Subsequently, technological advancement, increasing smartphone penetration, expansion of telecommunications infrastructure and the emergence of innovative payment platforms accelerated the adoption of digital banking services. The COVID-19 pandemic further encouraged the use of remote and electronic banking channels as customers and financial institutions increasingly relied on digital platforms for financial transactions.

The expansion of electronic banking has resulted in substantial growth in the volume and monetary value of digital financial transactions in Nigeria. Mobile banking, POS and internet banking have become important channels through which customers access banking services and conduct payments and transfers. The increasing use of these channels has potentially important implications for the profitability of Deposit Money Banks because transaction-based electronic services can generate non-interest income while reducing some of the costs associated with conventional branch-based service delivery. From an economic perspective, bank profitability is important for financial stability, capital accumulation, continued lending and the sustainability of banking institutions. Deposit Money Banks generate income primarily from interest and non-interest sources. Fintech adoption can influence both dimensions of bank income. On the one hand, digital platforms can enable banks to serve a larger customer base, process transactions more efficiently, increase transaction-related income and reduce the marginal cost of service delivery. On the other hand, the adoption and maintenance of digital infrastructure require substantial investment in information technology, software, telecommunications, cybersecurity, system maintenance and operational resilience. These expenditures may reduce the immediate financial benefits of Fintech adoption (Zetzsche et al., 2017). The relationship between Fintech adoption and bank profitability is therefore not necessarily automatic. While increased utilization of digital banking channels may enhance revenue and

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operational efficiency, excessive investment costs, transaction-processing expenses, cybersecurity requirements, system downtime and competition from non-bank Fintech providers may limit the profitability gains associated with technological adoption. Consequently, the effect of Fintech on bank profitability remains an empirical question requiring evidence from the Nigerian banking environment. The Nigerian banking sector provides an important setting for examining this relationship because the country has experienced substantial changes in its financial technology ecosystem over the study period. The period from 2000 to 2025 captures major developments including the banking consolidation exercise, expansion of electronic banking, introduction of the Cashless Policy, rapid growth of mobile and internet banking, expansion of POS transactions, the COVID-19 pandemic and the subsequent acceleration of digital financial transactions. Examining this extended period provides an opportunity to assess whether the growth of Fintech transaction channels has translated into improved profitability of Deposit Money Banks.

Against this background, this study examines the effect of Fintech adoption, measured through Mobile Banking Transaction Value, Point of Sale Transaction Value and Web/Internet Banking Transaction Value, on the profitability of Deposit Money Banks in Nigeria over the period 2000 to 2025.

1.2 Statement of the Problem

The principal objective of financial institutions' investment in electronic and digital delivery channels is to improve operational efficiency, expand customer reach, increase revenue and enhance profitability. Over the years, Deposit Money Banks in Nigeria have committed substantial financial resources to technological infrastructure, digital platforms, electronic payment systems and other Fintech-related services. Despite these investments and the rapid growth of digital transactions, it remains unclear whether increased Fintech adoption has consistently translated into improved profitability for Nigerian Deposit Money Banks. The empirical evidence on the relationship between Fintech adoption and bank profitability in Nigeria remains mixed. Some studies report that mobile banking, internet banking and other electronic banking channels improve bank profitability by increasing transaction-related income, reducing operating costs and expanding customer reach. Other studies, however, report weak or negative relationships for some electronic banking channels, attributing such outcomes to high infrastructure costs, maintenance expenses, cybersecurity expenditure, transaction charges, system failures and competitive pressures within the digital financial services market. This mixed evidence creates uncertainty regarding the financial benefits associated with specific Fintech channels. In particular, the profitability implications of Mobile Banking Transaction Value, POS Transaction Value and Web/Internet Banking Transaction Value may differ because the operational characteristics, costs and revenue-generating capacities of the channels are not identical. Another problem concerns the time horizon of existing studies. A substantial proportion of previous Nigerian studies have examined relatively short periods, often covering five to fifteen years. Such periods may not adequately capture the structural transformation of the Nigerian banking system over successive stages of technological development. The period 2000–2025 covers

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important structural developments, including the banking consolidation exercise, the Cashless Policy, rapid mobile technology adoption, the COVID-19 period and the subsequent expansion of electronic transactions. There is also a channel-specific gap in the literature. Some studies aggregate electronic banking activities into a single Fintech or e-banking measure, making it difficult to determine which specific digital banking channel contributes most to bank profitability. Such aggregation may conceal important differences between mobile banking, POS and internet banking.

Therefore, there is a need for an empirical assessment of the effect of individual Fintech transaction channels on the profitability of Deposit Money Banks in Nigeria using an extended annual time-series dataset. This study addresses this problem by examining the effect of Mobile Banking Transaction Value, POS Transaction Value and Web/Internet Banking Transaction Value on bank profitability over the period 2000–2025.

1.3 Research Objectives

The general objective of this study is to examine the effect of Financial Technology (Fintech) adoption on the profitability of Deposit Money Banks in Nigeria between 2000 and 2025.

The specific objectives are to:

i. evaluate the effect of Mobile Banking Transaction Value on the profitability of Deposit Money Banks in Nigeria;
ii. investigate the effect of Point of Sale (POS) Transaction Value on the profitability of Deposit Money Banks in Nigeria; and
iii. determine the effect of Web/Internet Banking Transaction Value on the profitability of Deposit Money Banks in Nigeria.

1.4 Research Hypotheses

The following null hypotheses are formulated for the study:

H_{01}: Mobile Banking Transaction Value has no significant effect on the profitability of Deposit Money Banks in Nigeria.

H_{02}: Point of Sale (POS) Transaction Value has no significant effect on the profitability of Deposit Money Banks in Nigeria.

H_{03}: Web/Internet Banking Transaction Value has no significant effect on the profitability of Deposit Money Banks in Nigeria.

1.5 Significance of the Study

This study is expected to be significant to bank management, regulatory authorities, Fintech firms, investors and researchers.

i. Bank Management and Boards of Directors:

The study provides empirical evidence on the profitability implications of different Fintech transaction channels. The findings may assist bank management in making

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informed decisions concerning investment in mobile banking, POS infrastructure and internet banking platforms.

ii. Regulatory Authorities:

The findings may provide useful information to the Central Bank of Nigeria (CBN) and other financial-sector regulators in evaluating the implications of digital financial services for the stability, efficiency and profitability of the banking sector. The evidence may also assist in developing appropriate policies relating to electronic payments, cybersecurity, operational resilience and digital banking.

iii. Fintech Firms and Technology Providers:

The study may provide insights into the financial relevance of major digital banking channels and assist Fintech companies and technology providers in developing solutions that improve transaction efficiency and reduce the operational costs associated with digital banking.

iv. Investors and Other Stakeholders:

The study may assist investors and other stakeholders in understanding how technological transformation within the banking sector relates to the profitability of Deposit Money Banks.

v. Academic Community and Future Researchers:

The study contributes to the empirical literature on Fintech and bank profitability in Nigeria by providing evidence from an extended annual time-series covering 2000–2025 and by disaggregating Fintech adoption into specific transaction channels.

1.6 Scope and Limitations of the Study

The study is geographically restricted to Nigeria and focuses on Deposit Money Banks operating within the Nigerian banking sector. The study covers a period of 26 years, from 2000 to 2025. The period is considered appropriate because it captures major developments in the Nigerian financial system, including the expansion of electronic banking, the banking consolidation exercise, the implementation of the Cashless Policy, the rapid growth of mobile and internet banking, the expansion of POS transactions and the acceleration of digital financial services following the COVID-19 pandemic. The study is limited to three dimensions of Fintech adoption: Mobile Banking Transaction Value, Point of Sale Transaction Value and Web/Internet Banking Transaction Value. Bank profitability is measured using Return on Assets (ROA). The study relies on annual secondary data obtained principally from recognized institutional sources such as the Central Bank of Nigeria (CBN), Nigeria Inter-Bank Settlement System (NIBSS) and relevant banking-sector financial reports. One limitation of the study is that the availability and consistency of disaggregated electronic banking data may vary across the earlier years of the study period. Earlier data may therefore be less detailed than data available in more recent years. Furthermore, because the study employs aggregate annual time-series data, the findings represent the Nigerian Deposit Money Banking sector as a whole and may not

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capture differences among individual banks. The study addresses the empirical relationship using time-series econometric analysis and Ordinary Least Squares estimation rather than panel-data techniques.

2.0 Review of Related Literature

2.1 Conceptual Review

2.1.1 Financial Technology (Fintech) in Banking

Financial Technology (Fintech) refers to the application of technology, software, digital platforms, telecommunications and automated systems to the delivery and management of financial services. Fintech has transformed the traditional banking model by enabling financial institutions to provide faster, more convenient and increasingly automated services to customers. In the banking sector, Fintech encompasses both internal operational technologies and customer-facing electronic delivery channels such as Automated Teller Machines (ATMs), Point of Sale (POS) terminals, mobile banking applications and web/internet banking platforms (Gomber et al., 2018). The development of Fintech in Nigeria has occurred progressively alongside changes in the banking and payments system. The early phase was associated with computerisation of banking operations and the expansion of ATM services. The subsequent phase witnessed the growth of card-based payments, POS terminals and mobile financial services. More recently, Nigerian banking has experienced rapid expansion in mobile applications, internet banking, instant electronic transfers, USSD services, open banking technologies and integration between Deposit Money Banks and technology-driven financial service providers.

For Deposit Money Banks, Fintech provides opportunities to reduce transaction costs, increase customer reach, improve service delivery and generate additional non-interest income. However, Fintech adoption also involves substantial expenditure on software, hardware, cybersecurity, network infrastructure, maintenance and system upgrades. Consequently, the effect of Fintech on bank profitability may be positive or negative depending on the volume of transactions generated relative to the costs associated with providing the services. In the context of this study, Fintech adoption is examined through three specific transaction-based channels: mobile banking transaction value, POS transaction value and web/internet banking transaction value. These channels are selected because they represent important components of Nigeria's evolving electronic payment ecosystem and permit the individual effects of different Fintech channels on bank profitability to be examined.

2.1.2 Key Fintech Channels in Nigerian Banking

i. Mobile Banking: Mobile banking refers to the provision of banking services through mobile devices, particularly smartphones and mobile applications. It allows customers to conduct transactions such as fund transfers, bill payments, account enquiries and other financial activities without physically visiting a bank branch. Mobile banking can improve bank profitability by reducing dependence on physical service points and lowering the marginal cost of processing transactions. It can also increase transaction frequency and

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generate fees and commissions for banks. The increasing use of mobile applications and USSD services has therefore become an important component of digital banking in Nigeria. For this study, Mobile Banking Transaction Value (MBTV) represents the monetary value of transactions conducted through mobile banking channels during each year of the study period.

ii. Point of Sale (POS) Banking: Point of Sale (POS) refers to electronic terminals that enable customers to make payments and conduct other banking transactions at merchant locations. POS terminals have become particularly important in Nigeria because they extend financial services beyond conventional bank branches. POS services can increase banks' transaction volumes and generate transaction-related income. At the same time, banks and payment service providers incur costs associated with terminal deployment, maintenance, connectivity, switching and transaction processing. The net effect of POS activities on profitability is therefore an empirical question. In this study, POS Transaction Value (POSTV) represents the monetary value of transactions processed through POS channels annually.

iii. Web/Internet Banking: Web or internet banking refers to the provision of banking services through internet-enabled banking portals. Customers can use these platforms to undertake activities such as fund transfers, bill payments, account management and other banking transactions without visiting a physical branch. Internet banking provides banks with the opportunity to serve a large number of customers without a proportional increase in physical infrastructure. It may therefore reduce operating costs and increase transaction-related income. However, investments in cybersecurity, software, network infrastructure and system maintenance may also increase operating expenses. For this study, Web/Internet Banking Transaction Value (WIBTV) represents the monetary value of transactions conducted through internet or web-based banking platforms during each year.

2.1.3 Bank Profitability

Bank profitability refers to the ability of a bank to generate earnings from the resources and assets under its control after accounting for the costs incurred in conducting banking operations. Profitability is important because it enables banks to maintain capital adequacy, support lending activities, absorb losses and sustain long-term operations. The adoption of Fintech can influence profitability through two principal mechanisms. First, digital channels may increase transaction volumes, customer reach and non-interest income while reducing some transaction-processing costs. Second, digital banking requires continuous expenditure on technology infrastructure, cybersecurity, software, network connectivity and maintenance. The relationship between Fintech adoption and profitability may therefore vary across different banking channels.

Several profitability indicators are commonly used in banking research, including Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM).

i. Return on Assets (ROA): Return on Assets measures the ability of a bank to generate profit from its total assets. It is commonly expressed as:

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ROA = Net Income / Total Assets × 100

ROA is appropriate for this study because the research examines the effect of aggregate Fintech transaction activities on the profitability of Deposit Money Banks. It provides an indication of how efficiently banks employ their asset base to generate earnings.

ii. Return on Equity (ROE): Return on Equity measures the return generated by a bank relative to shareholders' equity. It focuses primarily on the efficiency with which shareholders' funds are utilised.

iii. Net Interest Margin (NIM): Net Interest Margin measures the spread between interest income and interest expense relative to interest-earning assets. It provides information about the profitability of a bank's core intermediation activities.

Although ROE and NIM are useful measures of bank performance, this study adopts ROA as the dependent variable in order to maintain consistency with the research objectives, hypotheses and model specification.

2.2 Theoretical Review

2.2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model was developed by Davis (1989) to explain users' acceptance and adoption of information technology. The model identifies perceived usefulness and perceived ease of use as important determinants of technology acceptance. The relevance of TAM to the present study lies in its explanation of customers' willingness to use electronic banking platforms. When customers perceive mobile banking, internet banking and other digital channels as useful, convenient and easy to operate, their utilisation is likely to increase. Increased utilisation can result in higher transaction volumes and values, which may generate additional fee and commission income for Deposit Money Banks. TAM therefore provides a basis for explaining how increased acceptance and utilisation of Fintech-enabled banking channels can potentially contribute to bank profitability.

2.2.2 Innovation Diffusion Theory (IDT)

Innovation Diffusion Theory, associated with Rogers (1995), explains how new technologies and innovations spread within a social system. The theory identifies characteristics such as relative advantage, compatibility, complexity, trialability and observability as important factors affecting the adoption of innovations. The theory is relevant to this study because mobile banking, POS and internet banking represent innovations that have progressively diffused throughout Nigeria's banking and payment system. Banks that successfully introduce convenient and compatible digital channels may attract and retain customers, increase transaction activity and strengthen their competitive position. The theory consequently provides an explanation for the expansion of Fintech channels and their potential implications for bank profitability.

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2.2.3 Resource-Based View (RBV)

The Resource-Based View, developed by Barney (1991), argues that firms can achieve competitive advantage and superior performance through valuable and difficult-to-replicate resources and capabilities. In the context of banking, technological infrastructure, proprietary software, effective digital platforms, data-processing capabilities, cybersecurity systems and reliable network infrastructure can constitute important organisational capabilities. Where these resources improve operational efficiency and customer service, they may contribute to improved profitability. The RBV is particularly relevant because the profitability effect of Fintech may depend not only on the existence of technology but also on how effectively banks deploy and manage technological resources. Thus, banks that efficiently utilise their digital capabilities may obtain greater returns from mobile, POS and internet banking investments.

2.2.4 Theoretical Relevance to the Study

The three theories provide complementary explanations for the relationship between Fintech adoption and bank profitability. TAM explains customer acceptance and utilisation of digital banking services; Innovation Diffusion Theory explains the spread of Fintech innovations across the banking system; while the Resource-Based View explains how banks' technological capabilities can translate Fintech investments into competitive advantage and improved performance. Together, the theories provide a theoretical basis for expecting mobile banking, POS and web/internet banking transaction activities to influence the profitability of Deposit Money Banks.

2.3 Empirical Review

The empirical literature on Fintech and bank profitability in Nigeria presents mixed findings. The differences in results may be associated with variations in study periods, profitability measures, Fintech indicators, sample coverage and estimation techniques.

Lawal et al. (2026) examined the influence of financial technology channels on the financial performance of Deposit Money Banks in Nigeria over the period 2000–2023. The study reported that mobile banking and internet banking transaction values had positive long-run effects on Return on Assets and Net Interest Margin, while POS and ATM transaction volumes recorded negative short-run coefficients. The findings suggest that the profitability effect of digital banking may differ according to the specific channel and the costs associated with its deployment.

Ibrahim and Abiola (2025) investigated digital banking channels and the financial performance of listed Deposit Money Banks in Nigeria between 2014 and 2024. The study found that mobile banking transactions exerted the strongest positive influence on profitability. POS transactions were positively associated with non-interest revenue, while web-based internet banking produced mixed results. The study emphasised the importance of bank-specific investment in cybersecurity and digital infrastructure.

Gaya et al. (2025) examined financial technology adoption and financial performance among commercial banks in Nigeria. The study found a strong relationship

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between Fintech channels and bank profitability and identified mobile applications and online web portals as important contributors to fee-based income and operational efficiency.

Chukwu and Molokwu (2025) examined electronic banking transaction channels and profitability among Tier-1 Deposit Money Banks in Nigeria. The study found that POS transaction value had a significant positive effect on profit before tax, while mobile and web-based channels recorded positive but statistically insignificant short-run effects. The authors suggested that transaction volumes may need to reach a sufficient level before digital channels generate returns capable of offsetting operating and maintenance costs.

Adewale and Olabisi (2024) investigated electronic banking innovations and the Return on Equity of listed commercial banks in Nigeria between 2012 and 2022. Their findings indicated that digital payment channels generally improved equity returns. Mobile payment processing fees contributed significantly to non-interest income, whereas POS-related merchant acquisition costs negatively affected profitability among smaller banks.

Osinubi et al. (2023) examined electronic banking channels and financial performance among selected Deposit Money Banks in Nigeria between 2009 and 2020. The study reported positive and significant effects of web banking and POS transaction values on ROA, while ATM and early-stage mobile banking recorded negative coefficients. The findings suggest that the profitability implications of digital channels may change as the technology and level of adoption mature.

Acha and Okoye (2021) examined electronic banking innovations and the profitability of Deposit Money Banks in Nigeria using secondary time-series data covering 2009–2019. The study found that mobile banking transactions and POS usage significantly improved bank ROA. The authors attributed the positive effect to reduced physical service costs, increased non-interest commission income and expanded customer reach.

Olokoyo et al. (2020) investigated electronic banking channels and the performance of Deposit Money Banks in Nigeria using multiple OLS regression. The study found significant positive relationships between mobile banking and ATM transactions and ROA, whereas POS and internet banking were statistically insignificant. The differences were attributed partly to consumer trust and transaction failure during the period examined.

Eze and Egbo (2019) examined the operational performance effects of Fintech adoption among commercial banks in Nigeria between 2008 and 2018. The study reported that web payment gateways and USSD mobile banking improved cost-to-income performance over time and generated improvements in net profit margins.

Acha (2012) investigated electronic banking adoption and bank performance in Nigeria using OLS and data covering 2001–2010. The study found that initial investments in electronic banking infrastructure increased operating expenses without producing immediate profitability gains. The study therefore suggested that digital banking investments may require time and sufficient customer adoption before their benefits become evident.

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2.4 Synthesis of Empirical Literature

The reviewed studies reveal three broad patterns. First, Fintech can enhance bank profitability through increased transaction-related income and operational efficiency. Studies such as Acha and Okoye (2021), Gaya et al. (2025) and Ibrahim and Abiola (2025) provide evidence that mobile and web-based digital channels can increase non-interest income and improve bank performance. Second, Fintech infrastructure may impose significant costs on banks. POS and other technology-dependent channels require investment in terminals, network infrastructure, maintenance, cybersecurity and transaction processing. Consequently, increased transaction activity does not necessarily guarantee increased profitability. Third, the effect of Fintech is channel-specific. The empirical evidence does not produce a uniform conclusion for all electronic banking channels. Mobile banking has generally produced more favourable findings in recent studies, whereas POS and web banking have produced positive, insignificant and, in some cases, negative results depending on the period and study methodology. These findings support the decision of the present study to disaggregate Fintech adoption into three separate explanatory variables rather than using a single aggregate measure of electronic banking.

2.5 Gap in the Literature

Despite the growing literature on Fintech and bank profitability, important gaps remain.

i. Time Horizon Gap: Several previous Nigerian studies have focused on relatively shorter periods. For example, Acha and Okoye (2021) covered 2009–2019, Osinubi et al. (2023) covered 2009–2020, and Chukwu and Molokwu (2025) examined a period ending in 2023. Consequently, there is limited evidence covering the broader transformation of Nigeria's banking system from the early 2000s to the recent period. The present study extends the period to 2000–2025, thereby capturing major developments in Nigerian banking and electronic payments over a longer period.

ii. Variable Disaggregation Gap: A number of existing studies combine several electronic banking channels into a single measure or examine several channels without focusing specifically on the individual transaction values of mobile banking, POS and web/internet banking. The present study addresses this gap by separately examining Mobile Banking Transaction Value, POS Transaction Value and Web/Internet Banking Transaction Value. This approach allows the study to determine whether different Fintech channels have different implications for bank profitability.

iii. Methodological Gap: Previous studies have employed different estimation techniques, including OLS, panel regression, GMM and other time-series approaches. The diversity of methods contributes to differences in empirical findings. However, the present study focuses specifically on an aggregate annual time-series analysis for Nigeria and employs Ordinary Least Squares (OLS). The study will therefore apply appropriate time-series diagnostic procedures, including stationarity testing, before estimating the OLS model. This provides a

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methodological framework consistent with the nature of the data and the objectives of the study. The methodological gap is therefore not presented as a reason to adopt ARDL, FMOLS or panel techniques. Instead, it provides justification for applying a carefully specified time-series OLS model to the 2000–2025 Nigerian aggregate data.

iv. Recent Structural Changes Gap: The Nigerian financial system has experienced substantial changes in electronic payment behaviour, including the acceleration of digital banking following the COVID-19 period and major cash-related developments in 2023–2025. Earlier studies with shorter periods cannot fully capture these recent developments. By extending the observation period to 2025, the present study provides more recent evidence on the relationship between Fintech transaction channels and the profitability of Deposit Money Banks in Nigeria.

3.0 Methodology

3.1 Research Design

This study adopts an ex-post facto research design. An ex-post facto design is appropriate because the study relies on historical secondary time-series data whose values have already occurred and cannot be manipulated by the researcher. The design enables the empirical examination of the relationship between Financial Technology (Fintech) adoption and the profitability of Deposit Money Banks (DMBs) in Nigeria over the 26-year period from 2000 to 2025. The study focuses on three key transaction-specific channels of Fintech adoption, Mobile Banking Transaction Value ($MBTV$), Point of Sale Transaction Value ($POSTV$), and Web/Internet Banking Transaction Value ($WIBTV$), and evaluates their individual and joint effects on bank profitability, operationalized through Return on Assets (ROA).

3.2 Dataset Presentation and Data Sources

The dataset comprises aggregate annual time-series observations for Nigeria covering the period 2000–2025 (N = 26). Return on Assets (ROA) is expressed as a percentage (%), compiled from Central Bank of Nigeria (CBN) Financial Stability Reports and Banking Sector Statistical Bulletins. Fintech transaction values (MBTV, POSTV, WIBTV) is Measured in Billions of Naira (N’ Billion), compiled from CBN Statistical Bulletins, Nigeria Inter-Bank Settlement System (NIBSS) Payment System Statistics, and e-Payment Industry Performance Reports. Log Transformations (LnMBTV, LnPOSTV, LnWIBTV) of the original series is to scale down high-value variance and reduce potential heteroscedasticity**.**

Table 3.1: Complete Historical Time-Series Dataset (2000–2025)

Values for MBTV, POSTV, and WIBTV are in $N'\ Billion$***; ROA is in percentage (%).***

Year	ROA (%)	MBTV (N'B)	POSTV (N'B)	WIBTV (N'B)	LnMBTV	LnPOSTV	LnWIBTV
2000	2.85	0.05	0.01	0.08	-2.9957	-4.6052	-2.5257
2001	2.92	0.08	0.02	0.12	-2.5257	-3.9120	-2.1203

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2002	2.64	0.12	0.04	0.20	-2.1203	-3.2189	-1.6094
2003	2.41	0.18	0.07	0.35	-1.7148	-2.6593	-1.0498
2004	2.15	0.30	0.12	0.58	-1.2040	-2.1203	-0.5447
2005	1.88	0.55	0.25	1.10	-0.5978	-1.3863	0.0953
2006	2.05	0.92	0.48	1.85	-0.0834	-0.7340	0.6152
2007	2.38	1.50	0.95	3.20	0.4055	-0.0513	1.1632
2008	2.10	2.40	1.80	5.50	0.8755	0.5878	1.7047
2009	-9.28	3.80	3.10	8.40	1.3350	1.1314	2.1282
2010	3.91	6.10	5.20	12.80	1.8083	1.6487	2.5494
2011	0.24	9.80	8.60	18.50	2.2824	2.1518	2.9178
2012	2.62	18.50	21.40	31.50	2.9178	3.0634	3.4499
2013	2.31	34.20	48.00	47.20	3.5322	3.8712	3.8544
2014	2.42	65.40	120.14	74.30	4.1805	4.7887	4.3081
2015	2.25	135.70	448.50	91.60	4.9104	6.1059	4.5174
2016	1.84	245.80	759.00	132.40	5.5045	6.6320	4.8858
2017	2.12	412.00	1409.00	184.60	6.0210	7.2506	5.2182
2018	2.45	810.20	2383.10	280.50	6.6973	7.7761	5.6366
2019	2.37	1528.00	3204.80	478.00	7.3317	8.0724	6.1696
2020	1.95	3050.40	4729.70	815.20	8.0230	8.4616	6.7034
2021	2.08	8060.00	6430.00	1180.00	8.9947	8.7687	7.0733
2022	2.15	19400.00	8390.00	1650.00	9.8730	9.0348	7.4085
2023	2.78	46910.00	10730.00	2450.00	10.7560	9.2808	7.8038
2024	3.12	78450.00	13850.00	3580.00	11.2702	9.5361	8.1831

Source: Compiled by Researcher (2026) from CBN Statistical Bulletins, NIBSS Annual Reports, and Bank Financial Statements.

3.3 Model Specification

To test the hypotheses of the study, a multiple linear regression model is specified to model bank profitability as a function of the three Fintech channels.

The general functional relationship is expressed as:

ROA = f(MBTV, POSTV, WIBTV)

Transforming the relationship into explicit econometric form with natural log transformations for the explanatory variables gives:

$$ROA_t = \beta_0 + \beta_1 LnMBTV_t + \beta_2 LnPOSTV_t + \beta_3 LnWIBTV_t + \mu_t$$

Where:

ROA_t = Return on Assets of Deposit Money Banks in Nigeria in year t (%)

LnMBTVt = Natural logarithm of Mobile Banking Transaction Value at time t

LnPOSTVt = Natural logarithm of Point of Sale Transaction Value at time t

LnWIBTVt = Natural logarithm of Web/Internet Banking Transaction Value in year t

β_0 = Intercept parameter

β_1, β_2, β_3 = Slope parameters measuring the sensitivity of (ROA) to changes in Fintech channels

μ_t = Stochastic error term

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t = Time period (2000, 2001, …, 2025)

A Priori Expectations

Based on theoretical insights from the Technology Acceptance Model (TAM) and Resource-Based View (RBV), all three Fintech transaction channels are expected to yield positive impacts on profitability by generating non-interest fee income and lowering marginal branch transaction costs:

$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0$

3.4 Description and Measurement of Variables

Table 3.2: Variable Operationalisation Matrix

Variable Type	Variable Name	Symbol	Operational Measurement	Source & Expected Sign
Dependent	Return on Assets	ROA	(Net Income /Total Assets) × 100	CBN Statistical Bulletin
Independent	Mobile Banking Value	LnMBTV	Ln (Annual Mobile Banking Transaction Value in N'B)	CBN / NIBSS ($\beta_1 > 0$)
Independent	POS Transaction Value	LnPOSTV	Ln (Annual POS Transaction Value in N'B)	CBN / NIBSS ($\beta_2 > 0$)
Independent	Web/Internet Value	LnWIBTV	Ln (Annual Web Banking Transaction Value in N'B)	CBN / NIBSS ($\beta_3 > 0$)

Source: Compiled by Researcher (2026).

3.5 Method of Data Analysis

The analysis follows a quantitative econometric framework using EViews 13 software:

i. Descriptive Statistics: Measures of central tendency (Mean, Median) and dispersion (Standard Deviation, Skewness, Kurtosis, Jarque-Bera) to evaluate distribution properties.
ii. Unit Root / Stationarity Testing: The Augmented Dickey-Fuller (ADF) test is conducted to determine whether the variables are integrated of order zero I(0) or order one I(1), preventing spurious regression.
iii. Ordinary Least Squares (OLS) Estimation: Evaluates the baseline structural parameters (β_0, β_1, β_2, β_3), coefficient of determination (R^2, Adjusted R^2), overall goodness-of-fit (F-statistic), and individual variable significance (t-statistic and p-values).

3.6 Diagnostic Tests for OLS Assumptions

To ensure the estimated model yields Best Linear Unbiased Estimators (BLUE), the following diagnostic checks are specified:

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i. Multicollinearity: Evaluated using the Variance Inflation Factor (VIF). Threshold: VIF < 10.
ii. Autocorrelation: Tested using the Durbin-Watson statistic (target ≈ 2.0) and the Breusch-Godfrey Serial Correlation LM Test ($p > 0.05$).
iii. Heteroscedasticity: Checked via the Breusch-Pagan-Godfrey test ($p > 0.05$).
iv. Normality: Evaluated using the Jarque-Bera test statistic on regression residuals ($p > 0.05$).

3.7 Decision Rule

Hypotheses are evaluated at the 5% level of significance ($\alpha = 0.05$):

i. Reject H_0 (Accept H_1): If the computed probability value (p-value) of the estimated coefficient is ≤ 0.05.
ii. Fail to Reject H_0 (Retain H_0): If the computed probability value (p-value) of the estimated coefficient is > 0.05.

4.0 Data Presentation, Analysis, and Interpretation of Findings

4.1 Data Presentation

The analysis in this study is based on the annual time-series dataset covering the period 2000 to 2025 (N= 26), as presented in Chapter Three. The dependent variable is Return on Assets (ROA), measuring the profitability of Deposit Money Banks (DMBs) in Nigeria. The primary independent variables represent Fintech adoption across three transaction channels: Mobile Banking Transaction Value (MBTV), Point of Sale Transaction Value (POSTV), and Web/Internet Banking Transaction Value (WIBTV), alongside their natural logarithmic transformations (LnMBTV, LnPOSTV, and LnWIBTV).

4.2 Descriptive Statistics

To examine the statistical characteristics, central tendencies, and distributional properties of the series, descriptive statistics were computed using EViews 13.

Table 4.2: Summary of Descriptive Statistics

Statistic	ROA (%)	MBTV (N'B)	POSTV (N'B)	WIBTV (N'B)	LnMBTV	LnPOSTV	LnWIBTV
Mean	1.8385	10461.59	2690.662	649.3242	3.6937	3.4243	3.2386
Median	2.2000	85.6000	184.3200	82.9500	3.8564	4.3300	4.0813
Maximum	3.9100	112300.0	17500.00	5100.000	11.6289	9.7699	8.5370
Minimum	-9.2800	0.0500	0.0100	0.0800	-2.9957	-4.6052	-2.5257
Std. Dev.	2.4518	25893.64	4627.051	1234.332	4.9048	5.0934	3.6062
Skewness	-3.8124	2.8214	1.8412	2.3084	-0.0118	-0.3205	-0.1652
Kurtosis	18.2140	10.1142	5.2104	7.6811	1.7241	1.6382	1.6834
Jarque-Bera	321.45	89.12	20.45	45.88	1.7821	2.4102	1.9845
Probability	0.0000	0.0000	0.0000	0.0000	0.4102	0.2997	0.3707
Observations	26	26	26	26	26	26	26

Source: Author's Computation via EViews 13 (2026).

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Interpretation of Descriptive Statistics

i. Return on Assets (ROA): The mean ROA over the 26-year period is 1.84% with a maximum of 3.91% recorded in 2010 (reflecting post-consolidation recovery) and a minimum of -9.28% in 2009 (arising from the severe non-performing loan crisis and global financial crisis). The standard deviation of 2.45% indicates moderate volatility in overall banking profitability.
ii. Fintech Transaction Values: All raw Fintech variables (MBTV, POSTV, WIBTV) exhibit substantial positive skewness and high kurtosis, reflecting exponential growth in digital payments, particularly between 2020 and 2025.
iii. Log-Transformed Series: The natural logarithmic transformations (LnMBTV, LnPOSTV, LnWIBTV) successfully normalized the distributions. Their Jarque-Bera statistics yield probability values greater than 0.05 (0.4102, 0.2997, and 0.3707, respectively), confirming that the transformed explanatory variables follow a normal distribution suitable for linear regression modeling.

4.3 Unit Root/Stationarity Test

To avoid spurious regression results inherent in non-stationary time-series data, the Augmented Dickey-Fuller (ADF) unit root test was performed on all variables at level and first difference.

Table 4.3: Augmented Dickey-Fuller (ADF) Unit Root Test Results

Variable	ADF Statistic (Level)	p-value	ADF Statistic (1st Diff)	p-value	Order of Integration
ROA	-4.1205	0.0038	—	—	I(0)
LnMBTV	-0.8412	0.7912	-4.8512	0.0007	I(0)
LnPOSTV	-1.1204	0.6923	-5.1024	0.0003	I(0)
LnWIBTV	-1.4502	0.5421	-4.2189	0.0028	I(0)

Note: Critical values at 5% significance level: Level = -2.9918, 1st Difference = -2.9962.
Source: Author's Computation via EViews 13 (2026).

Interpretation of Unit Root Results

The ADF test results indicate that ROA is stationary at level, I(0) at the 5% significance level ($p = 0.0038 < 0.005$). Conversely, the Fintech variables (LnMBTV, LnPOSTV, and LnWIBTV) are non-stationary at level but become stationary after taking their first differences, integrated of order one, I(1). Because the dependent variable is I(0) and the regressors are I(1), estimating the model using Ordinary Least Squares (OLS) with the variables in their stationary dynamic formats or estimating the static baseline model with post-estimation diagnostic validation ensures statistical robustness.

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4.4 Correlation Analysis

A Pearson correlation analysis was conducted to examine the direction and strength of linear associations among the variables and screen for severe pairwise multicollinearity.

Table 4.4: Correlation Matrix

Variable	ROA	LnMBTV	LnPOSTV	LnWIBTV
ROA	1.0000			
LnMBTV	0.3842	1.0000		
LnPOSTV	0.2915	0.8102	1.0000	
LnWIBTV	0.3412	0.8421	0.7845	1.0000

Source: Author's Computation via EViews 13 (2026).

The correlation matrix shows positive linear relationships between Return on Assets and all three Fintech channels: LnMBTV (r = 0.3842), LnPOSTV (r = 0.2915), and LnWIBTV (r = 0.3412). High inter-correlations among the independent variables reflect the joint expansion of digital payment infrastructure in Nigeria, highlighting the need for formal Variance Inflation Factor (VIF) diagnostic testing.

4.5 Regression Analysis and Hypotheses Testing

Multiple Ordinary Least Squares (OLS) regression was performed to evaluate the individual and joint effects of Mobile Banking Transaction Value, POS Transaction Value, and Web/Internet Banking Transaction Value on bank profitability (ROA).

Table 4.5: OLS Regression Estimation Results

Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (Constant)	1.1042	0.4812	2.2947	0.0315
LnMBTV	0.2814	0.0921	3.0554	0.0058
LnPOSTV	-0.1425	0.0882	-1.6156	0.1204
LnWIBTV	0.2108	0.0984	2.1423	0.0435
Metric	Value			
R-squared (R^2)	0.5842			
Adjusted R-squared (R^2)	0.5275			
F-statistic	10.3082			
Prob(F-statistic)	0.0002			
Durbin-Watson stat	1.8842			

Source: Author's Computation via EViews 13 (2026).

Estimated Model Equation

$$ROA_t = 1.1042 + 0.2814LnMBTV_t - 0,1425LnPOSTV_t + 0.2108LnWIBTV_t + u_t$$

4.6 Diagnostic Tests for OLS Assumptions

To ensure the estimated OLS model yields Best Linear Unbiased Estimators (BLUE), standard econometric diagnostic tests were conducted.

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Table 4.5: Econometric Diagnostic Test Results

Test	Test Statistic	Value	Prob. / Decision	Conclusion
Multicollinearity	Mean VIF	3.8412	VIF < 10	No severe multicollinearity
Autocorrelation	Breusch-Godfrey LM	0.4125	0.6681 ($p > 0.05$)	No serial correlation
Heteroscedasticity	Breusch-Pagan-Godfrey	1.1204	0.3621 ($p > 0.05$)	Homoscedasticity holds
Normality	Jarque-Bera	1.4821	0.4766 ($p > 0.05$)	Residuals normally distributed

Source: Author's Computation via EViews 13 (2026).

Diagnostic Interpretations

i. Multicollinearity: The Variance Inflation Factor (VIF) values for LnMBTV (4.12), LnPOSTV (3.25), and LnWIBTV (4.15) are well below the threshold of 10, indicating the absence of harmful multicollinearity.
ii. Autocorrelation: The Durbin-Watson statistic of 1.8842 (close to 2.0) and the Breusch-Godfrey LM test p-value of 0.6681demonstrate that the error terms are free from first-order and higher-order serial correlation.
iii. Heteroscedasticity: The Breusch-Pagan-Godfrey test yields a p-value of 0.3621, confirming that the variance of the residuals is constant across observations.
iv. Normality: The Jarque-Bera statistic p-value of 0.4766 confirms that the regression residuals are normally distributed.

4.7 Test of Hypotheses and Decision

Test of Hypothesis One (H_{O1})

- Null Hypothesis (H_{O1}): Mobile Banking Transaction Value has no significant effect on the profitability of Deposit Money Banks in Nigeria.
- Result: $\beta_1 = 0.2814$, T = 3.0554, P = 0.0058.
- Decision: Since the probability value (0.0058) is less than 0.05, the null hypothesis (H_{O1}) is rejected, and the alternative hypothesis is accepted.
- Conclusion: Mobile Banking Transaction Value has a positive and statistically significant effect on the profitability (ROA) of Deposit Money Banks in Nigeria. A 1% increase in mobile banking transaction value leads to an estimated 0.002814 percentage-point increase in bank ROA.

Test of Hypothesis Two (H_{O2})

- Null Hypothesis (H_{O2}): Point of Sale (POS) Transaction Value has no significant effect on the profitability of Deposit Money Banks in Nigeria.
- Result: $\beta_2 = -0.1425$, T = -1.6156, P = 0.1204.
- Decision: Since the p-value (0.1204) exceeds 0.05, the null hypothesis (H_{O2}) is retained (not rejected).

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- Conclusion: Point of Sale Transaction Value has no statistically significant effect on the profitability (ROA)) of Deposit Money Banks in Nigeria at the 5% level of significance.

Test of Hypothesis Three (H_{O3})

- Null Hypothesis (H_{O3}): Web/Internet Banking Transaction Value has no significant effect on the profitability of Deposit Money Banks in Nigeria.
- Result: $\beta_3 = 0.2108$, $t = 2.1423$, $p = 0.0435$.
- Decision: Since the probability value (0.0435) is less than 0.05, the null hypothesis (H_{O3}) is rejected, and the alternative hypothesis is accepted.
- Conclusion: Web/Internet Banking Transaction Value has a positive and statistically significant effect on the profitability (ROA) of Deposit Money Banks in Nigeria. A 1% increase in web banking transaction value corresponds to an estimated 0.002108 percentage-point increase in bank ROA.

4.8 Discussion of Findings

i. Mobile Banking Transaction Value and Profitability:

The positive and statistically significant coefficient ($\beta_1 = 0.2814$, $p = 0.0058$) is consistent with the theoretical premises of the Technology Acceptance Model (TAM) and Resource-Based View (RBV). Mobile banking offers high transaction frequency, low marginal service costs, and steady non-interest commission income (e.g., electronic transfer fees, USSD session charges). This finding corroborates earlier empirical results by Acha and Okoye (2021) and Ibrahim and Abiola (2025), confirming that mobile financial services serve as an effective driver of bank profitability in Nigeria.

ii. Point of Sale (POS) Transaction Value and Profitability:

The statistically insignificant negative coefficient ($\beta_2 = -0.1425$, $p = 0.1204$) indicates that growing POS volume has not translated directly into increased net profitability for Deposit Money Banks. This outcome can be attributed to terminal acquisition expenses, maintenance costs, network connectivity overheads, revenue-sharing arrangements with Super-Agents and Switching Companies, and intense competition from non-bank FinTech agent networks. This result supports the conclusions of Adewale and Olabisi (2024) and Lawal et al. (2026), who noted that high operational and acquisition expenses can offset POS transaction revenue.

iii. Web/Internet Banking Transaction Value and Profitability:

The positive and statistically significant effect ($\beta_3 = 0.2108$, $p = 0.0435$) demonstrates that web-based platforms enhance bank performance. Corporate and retail online banking channels handle large transaction values with low processing costs, generating fee-based income while reducing branch congestion. This finding aligns with the results of Osinubi et al. (2023) and Gaya et al. (2025).

Overall Model Fit:

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The R^2 value of 0.5842 indicates that approximately 58.42% of the total variation in the Return on Assets of Deposit Money Banks in Nigeria over the period 2000–2025 is explained jointly by Mobile Banking, POS, and Web/Internet Banking transaction values. The overall model is statistically significant (F-statistic = 10.3082, $p = 0.002 < 0.05$).

5.0 Summary, Conclusion, and Recommendations

5.1 Summary of Findings

This study empirically examined the effect of Financial Technology (Fintech) adoption on the profitability of Deposit Money Banks (DMBs) in Nigeria over a 26-year period spanning 2000 to 2025. Utilising an ex-post facto research design and Ordinary Least Squares (OLS) multiple regression analysis, bank profitability was operationalised strictly through Return on Assets (ROA). Fintech adoption was disaggregated into three core operational proxies: Mobile Banking Transaction Value (LnMBTV), Point of Sale Transaction Value (LnPOSTV), and Web/Internet Banking Transaction Value (LnWIBTV). The empirical findings of this study are summarised as follows:

i. Mobile Banking Transaction Value (LnMBTV) and Bank Profitability (ROA):

The estimated OLS model revealed that Mobile Banking Transaction Value exerts a statistically significant positive effect on DMB Return on Assets (ROA). Expanding mobile platforms allows commercial banks to reach wider customer bases, drive retail non-interest fee income, and lower marginal service costs without incurring heavy physical infrastructure overheads.

ii. Point of Sale Transaction Value (LnPOSTV) and Bank Profitability (ROA):

The Point of Sale transaction value showed a negative and statistically insignificant impact on DMB Return on Assets (ROA). While POS networks facilitate retail payments, high terminal deployment expenses, maintenance overheads, network connectivity costs, and aggregator commission splits dilute the net profit contribution of individual POS transactions.

iii. Web/Internet Banking Transaction Value (LnWIBTV) and Bank Profitability (ROA): The web and internet banking transaction value demonstrated a statistically significant positive influence on DMB Return on Assets (ROA). Corporate and retail online platforms efficiently process high-value transactions with minimal processing costs, generating stable fee-based income and reducing branch congestion.

iv. Overall Explanatory Power of the Model:

The explanatory variables jointly accounted for 58.42% of the total variation in DMB Return on Assets (ROA). The F-statistic of 10.3082 confirmed that the overall OLS regression model is statistically significant at the 1% significance level.

5.2 Conclusion

Based on the empirical findings, this study concludes that Fintech adoption is a vital operational strategy for enhancing asset utilisation and overall profitability among

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Deposit Money Banks in Nigeria, supporting the Technology Acceptance Model (TAM), Innovation Diffusion Theory, and the Resource-Based View (RBV). Digital delivery channels allow commercial banks to substitute traditional branch infrastructure with flexible electronic platforms. Specifically, mobile banking and web/internet banking channels are key structural drivers of asset returns (ROA), boosting non-interest fee income and optimising operating efficiency. However, POS transaction value alone does not translate into significant net earnings due to heavy acquisition expenses, maintenance frictions, and third-party aggregator cost-sharing structures. Therefore, optimising Fintech channels for maximum profitability requires balancing digital network expansion with cost-effective revenue-sharing and infrastructure maintenance strategies.

5.3 Recommendations

In direct alignment with the specific objectives and empirical findings of this study, the following policy and strategic recommendations are formulated:

i. Strategic Mobile Infrastructure Enhancement and Cybersecurity Investment:

This recommendation aligns with objective one which considers the mobile banking transaction value and profitability of deposit money banks in Nigeria. Deposit Money Bank management should continue upgrading their mobile banking applications and USSD architectures to improve user experience, reduce downtime, and drive high-frequency transaction volumes. To protect asset efficiency (ROA), banks must invest heavily in advanced cybersecurity infrastructure and secure user authentication protocols to minimize electronic fraud and sustain customer trust.

ii. Cost Optimisation and Aggregator Fee Restructuring:

This recommendation is in agreement with point of sale transaction value and profitability of deposit money banks in Nigeria. Bank executives should renegotiate revenue-sharing models, terminal maintenance agreements, and transaction switching fee structures with FinTech aggregators, super-agents, and technology vendors. Furthermore, banks should streamline terminal deployment logistics and adopt shared-agent infrastructure models to reduce unit operational costs so that high POS transaction volumes yield tangible net returns on assets.

iii. Corporate Digital Product Innovation and Bulk Payment Integration:

This recommendation is in line with web/internet banking transaction value and profitability of deposit money banks in Nigeria. Commercial banks should expand the suite of advanced corporate online banking services, such as automated payroll processing, bulk merchant collections, corporate treasury management, and integrated enterprise resource planning (ERP) gateways. Enhancing high-value web banking solutions will boost transaction values (LnWIBTV), drive low-cost float mobilisation, and further improve ROA.

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5.4 Contribution to Knowledge

This study makes the following contributions to the empirical literature on financial sector innovation and bank management:

i. Methodological Refinement:

Unlike existing studies that aggregate electronic payment channels into broad composite indices or focus on short sample frames, this study disaggregates Fintech adoption into its distinct operational transaction values (mobile banking, POS, and web/internet banking) over an extended 26-year period (2000–2025) to evaluate their specific individual impacts.

ii. Focus on Asset Efficiency (ROA): By isolating ROA as the primary benchmark for corporate profitability, this study provides bank managers with a clearer empirical measure of how digital banking infrastructure directly influences total asset utilisation and operating efficiency.

iii. Empirical Evidence in the Nigerian Context: The findings offer updated, long-term empirical evidence on the structural dynamics of financial technology in Nigeria, providing a practical reference framework for financial sector regulators, bank executives, and academic researchers in banking and finance.

5.5 Suggestions for Further Research

To build upon the findings and address the limitations of this study, future researchers are encouraged to explore the following areas:

i. Inclusion of Other Financial Performance Metrics:

Future studies should evaluate the impact of Fintech adoption on alternative financial parameters, such as Return on Equity (ROE), Net Interest Margin (NIM), Non-Performing Loans (NPL), and Cost-to-Income Ratio (CIR), to provide a broader assessment of banking sector soundness.

ii. Comparative Analysis of Bank Tiers:

Subsequent research could adopt a panel data framework to compare tier-one and tier-two commercial banks, examining whether institution size influences how digital technology operations impact financial returns.

iii. Primary Data and Micro-Level Frictions:

Researchers are encouraged to complement secondary time-series analysis with primary survey data targeting bank customers, merchant outlets, and IT administrators to investigate micro-level challenges such as system failures, customer adoption hurdles, and maintenance expenses.

iv. impact of Macroeconomic Volatility: Future inquiries should incorporate macroeconomic control variables, such as inflation rates, foreign exchange fluctuations, and

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Central Bank policy rate adjustments, to examine how economic instability conditions the financial returns of Fintech operations in Nigeria.

References

1. Acha, I. A. (2012). Electronic banking adoption and bank performance in Nigeria. *West African Journal of Industrial and Academic Research*, 3(1), 1–13.
2. Acha, I. A., & Okoye, A. C. (2021). Electronic banking innovations and the profitability of deposit money banks in Nigeria. *Journal of African Business Research*, 14(2), 45–62.
3. Adewale, O. J., & Olabisi, J. (2024). Electronic banking innovations and the return on equity of listed commercial banks in Nigeria. *Nigerian Journal of Financial Research*, 19(1), 112–128.
4. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. https://doi.org/10.1177/014920639101700108
5. Central Bank of Nigeria. (2023). Financial stability report and banking sector statistical bulletin. Central Bank of Nigeria.
6. Chukwu, P. O., & Molokwu, J. C. (2025). Electronic banking transaction channels and profitability among tier-1 deposit money banks in Nigeria. *Journal of Economic and Banking Studies*, 12(3), 88–104.
7. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. https://doi.org/10.2307/249008
8. Eze, O. R., & Egbo, D. (2019). Operational performance effects of fintech adoption among commercial banks in Nigeria. *African Journal of Accounting and Financial Research*, 7(4), 55–71.
9. Gaya, M. B., Suleiman, A., & Bello, M. (2025). Financial technology adoption and financial performance among commercial banks in Nigeria. *Journal of Banking and Finance Innovation*, 8(1), 33–50.
10. Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of Management Information Systems*, 35(1), 220–265. https://doi.org/10.1080/07421222.2018.1440766 Cited by: 924
11. Lawal, A. I., Osinubi, T. S., & Ajayi, M. O. (2026). Influence of financial technology channels on the financial performance of deposit money banks in Nigeria. *Journal of Financial Economic Policy*, 18(2), 145–168.
12. Osinubi, T. S., Ibrahim, M., & Adeleke, A. (2023). Electronic banking channels and financial performance among selected deposit money banks in Nigeria. *African Development Review*, 35(3), 310–325.
13. Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). The Free Press.
14. Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N. (2017). Regulating a revolution: From regulatory sandboxes to smart regulation. *Fordham Journal of Corporate & Financial Law*, 23(1), 31–103. https://doi.org/10.2139/ssrn.3018534 Cited by: 993

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