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FINANCIAL TECHNOLOGY AND PROFITABILITY OF COMMERCIAL BANKS IN NIGERIA

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Abstract. Financial technology has fundamentally transformed Nigeria's banking sector, yet considerable uncertainty remains regarding its actual impact on commercial bank profitability. This Study analyze the impact of financial technology on the profitability of commercial banks in Nigeria from the p[eriod of 2012 to 2025. Focusing on ATM, POS, internet banking (INB), and mobile banking transaction (MB) values individually effect on EPS. The study employs Autoregressive Distributed Lag (ARDL) model. The finding reveal that ATM have a negative and statistically significant effect on EPS in both short and long run, MB, POS and bank size exert a positive and statistically significant effect on EPS in both short and long run however, INB exhibits a positive but statistically insignificant effect on EPS in a long run but statistical significance in short run The study concludes that fintech has a significant impact on the profitability of commercial banks in Nigeria. It was recommended that Commercial banks should strengthen the integration and coordination of their digital service channel in Nigeria.

Keywords: Financial technology, bank profitability, commercial banks, digital banking channels, ARDL bounds testing; Nigeria

TECHNOLOGIE FINANCIÈRE ET RENTABILITÉ DES BANQUES COMMERCIALES AU NIGERIA

Résumé. La technologie financière a profondément transformé le secteur bancaire nigérian ; toutefois, une incertitude considérable demeure quant à son impact réel sur la rentabilité des banques commerciales. Cette étude analyse l'incidence de la technologie financière sur la rentabilité des banques commerciales au Nigeria sur la période allant de 2012 à 2025. Elle examine, de manière individuelle, les effets des transactions effectuées via les guichets automatiques bancaires (GAB), les terminaux de paiement électronique (TPE), les services bancaires en ligne et les services bancaires mobiles sur le bénéfice par action (BPA). L'étude utilise le modèle autorégressif à retards échelonnés (ARDL). Les résultats révèlent que les GAB ont un effet négatif et statistiquement significatif sur le BPA, tant à court qu'à long terme. À l'inverse, les services bancaires mobiles, les TPE et la taille de la banque exercent un effet positif et statistiquement significatif sur le BPA, à court comme à long terme. Quant aux services bancaires en ligne, ils présentent un effet positif sur le BPA statistiquement significatif à court terme, mais non significatif à long terme. L'étude conclut que la technologie financière a un impact significatif sur la rentabilité des banques commerciales au Nigeria. Il est recommandé aux banques commerciales de renforcer l'intégration et la coordination de leurs canaux de services numériques au Nigeria.

Mots-clés : Technologie financière, rentabilité bancaire banques commerciales, canaux bancaires numériques, test de cointégration ARDL, Nigeria

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Introduction

The financial sector around the world has undergone unprecedented transformation in the last two decades, driven by rapid technological innovation and the emergence of financial technology solutions. Financial technology, commonly referred to as fintech, represents the integration of advanced technology into financial services delivery, fundamentally altering how banks operate and interact with customers (Soetan&Mogaji,2024). This digital revolution encompasses mobile banking applications, internet banking platforms, automated teller machines (ATMs), point of sale (POS) terminals, and electronic payment systems, that have collectively reshaped the traditional banking landscape. The growth of fintech in Nigeria's banking sector accelerated significantly following the Central Bank of Nigeria's launch of the Cashless Policy in 2012, which was deliberately designed to reduce cash-based transactions and promote electronic payments (CBN, 2012). According to Nigeria Inter-Bank Settlement System (NIBSS) data, the value of electronic transactions increased from ₦29.8 trillion in 2012 to ₦221.4 trillion in 2020, representing remarkable 643% growth (NIBSS, 2021). The COVID-19 pandemic sped up this changes, with mobile banking transaction volumes increasing 187% between Q2 2020 and Q2 2022, while internet banking volumes grew 164% over the same period (NIBSS, 2022). By Q1 2024, quarterly digital transactions exceeded ₦150 trillion across mobile banking, POS, and internet banking channels, demonstrating sustained adoption beyond temporary crisis responses (NIBSS, 2024).

However Financial technology has reshaped Nigeria's banking sector, yet there is still uncertainty regarding its actual impact on commercial bank profitability. Nigerian commercial banks have collectively invested over ₦2 trillion since 2012 in ATM networks, POS terminals, internet banking platforms, and mobile banking applications (Iwedi, 2024). Despite these massive investments, profitability outcomes remain unclear and contradictory. Bank profitability showed highly inconsistent patterns. GTBank's EPS improved from ₦8.34 to ₦11.67 (40% increase), while First Bank's declined from ₦2.15 to ₦1.89 (12% decrease) despite comparable digital transaction growth (Nigerian Exchange Group, 2024). This divergence creates a fundamental dilemma: banks cannot determine whether fintech investments generate positive returns or merely represent defensive expenditures (Soetan&Mogaji, 2024). The problem is compounded by fee compression, as POS merchant rates declined from 1.25% (2018) to 0.75% (2023) (CBN, 2024), and technology costs now consume 15-22% of operating budgets, up from 8-12% a decade ago (Olufemi et al., 2024).

Despite the strategic importance, significant gaps exist in empirical literature. Most Nigerian studies employ annual data over short periods using simple regression techniques (Aniekan et al., 2024; Ahmed et al., 2025). Existing research predominantly uses ROA and ROE as profitability measures (Chepkoech, 2022; Enadeghe& Mohammed, 2025), with limited focus on Earnings Per Share (EPS), a critical metric for shareholder value. Most studies treat fintech as monolithic or examine only one or two channels (Ekpuke&Ehiedu, 2025; Aisha et al., 2022), explicit examination of bank size as a moderating variable is rare (Ghajiga et al., 2024). This study fills these gaps by examining how ATM, POS, INB, and MB transaction values individually affect EPS of Nigerian commercial banks using quarterly data from Q1 2012 to Q4 2025, while controlling for bank size. Therefore, The main objective of this study is to analyze the impact of financial technology on the profitability of commercial banks in Nigeria. The findings will inform strategic decision-making by bank executives, guide regulatory policy formulation, assist investor

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assessments, and contribute to academic understanding of digital transformation in emerging market banking systems.

1. Literature Review

1.1 Theoretical and Conceptual Classification

The Technology Acceptance Model (TAM) was developed by Fred Davis in 1989 to explain the factors shaping users' acceptance and adoption of new technologies. The model emphasizes two major determinants of technology adoption: perceived usefulness and perceived ease of use. Perceived usefulness refers to how much an individual believes that a particular technology enhances performance, while perceived ease of use relates to the degree of effort required to utilize the technology (Davis, 1989). TAM provides a useful foundation for understanding customers' adoption of financial technology services in the Nigerian banking sector. Financial innovations such as ATM transactions, POS services, INB and MB are likely to be adopted when customers perceive them as efficient, convenient, and easy to use. Increased acceptance and usage of these technologies can improve transaction efficiency, service delivery, and revenue generation, thereby enhancing the profitability of commercial banks measured by EPS (Hussaini& Umar, 2025; Tarawneh et al., 2024). Several studies Alkadi and Abed (2023); Abbas et al. (2025); Yusuf and Bala (2021) have adopted TAM in explaining the acceptance of digital financial services.

The Diffusion of Innovation Theory was propounded by Everett Rogers in 1962 to explain how new ides spread across individuals, groups, and organizations over time. The theory identifies factors such as relative advantage, compatibility, complexity, observability, and trialability as key determinants influencing the rate of adoption of innovations (Rogers, 2003). The theory offers understanding of the spread and increasing acceptance of financial technology innovations within the banking industry. Innovations such as ATM services, POS terminals, INB, and MB continue to gain wider usage because they provide faster, more accessible, and convenient financial services. As the technologies become increasingly diffused among bank customers, commercial banks are able to improve operational efficiency, increase transaction volumes, and enhance profitability reflected through Earnings per Share (EPS) (Ologunwa et al., 2024; Iwedi, 2024). Empirical studies have frequently relied on the Diffusion of Innovation Theory in explaining financial technology adoption. Al-Jabri and Sohail (2021) applied the theory in examining electronic banking adoption and concluded that compatibility and perceived advantages significantly influence customers' acceptance of digital banking services. In the same vein, Abbas et al. (2025) reported that the rapid diffusion of fintech innovations contributes positively to banking performance through increased utilization of electronic payment channels. Nwayen et al. (2024) also found that the adoption of digital financial channels significantly improves banking operations and financial inclusion.

Transaction Cost Theory was introduced by Ronald Coase in 1937 and further expanded by Oliver Williamson in 1985. The theory explains that organizations seek to improve efficiency and maximize profitability by minimizing the costs associated with transactions and business operations. Such costs include information costs, monitoring costs, search costs, and enforcement costs (Williamson, 1985). The relevance of the theory to this study lies in its explanation of how financial technology reduces operational and transaction costs within the banking sector. Digital banking channels such as ATM services, internet banking, mobile banking, and POS systems reduce dependence on

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physical banking operations and manual transaction processes. Through automation and improved service delivery, banks are able to reduce operating expenses, enhance efficiency, and improve profitability measured by Earnings per Share (EPS) (Hussaini& Umar, 2025; Tarawneh et al., 2024). The application of Transaction Cost Theory is evident in studies relating to financial technology and banking performance. Tarawneh et al. (2024) observed that digital financial technologies contribute significantly to cost reduction and operational efficiency in banking institutions. Likewise, Hussaini and Umar (2024) found that fintech adoption improves the performance of deposit money banks by reducing service delivery costs and enhancing operational efficiency. Ihenyen et al. (2024) further argued that digital banking innovations positively influence banks' profitability through improved operational processes and reduced transaction costs.

Financial Technology (FinTech) refers to technology-driven innovation in financial services that enhances the efficiency, accessibility, and delivery of financial products and services. It encompasses digital payment systems, mobile banking, internet banking, and other electronic financial solutions that are reshaping traditional banking operations. Recent studies describe FinTech as a main driver of transformation in the financial sector, improving service delivery, financial intermediation, and operational efficiency (Tarawneh et al., 2024; Al-Hawary& Al-Saadi, 2024). In Nigeria, the adoption of FinTech has accelerated due to increasing demand for convenient and efficient financial services as well as the expansion of the cashless policy framework (Hussaini& Umar, 2025; Nwayen et al., 2024). However, the benefits of FinTech are sometimes offset by high implementation and operational costs, cybersecurity concerns, and technological infrastructure challenges. In this study, FinTech is operationalized through four digital banking channels: Automated Teller Machine (ATM) transactions, Point-of-Sale (POS) transactions, internet banking, and mobile banking.

Profitability refers to the ability of a bank to earn income from its operations over a given period. It reflects how well the bank performed financially and efficiently operate in using their resources to generate returns. Profitability is considered a major indicator of the overall performance, sustainability, and financial strength of commercial banks. In the banking sector, profitability is influenced by several factors, including operational efficiency, service quality, technological innovation, cost management, and revenue generation capacity (Ihenyen et al., 2024; Hussaini & Umar, 2025). In this study, the profitability of commercial banks is measured using EPS, which reflects the earnings attributable to shareholders and serves as an important indicator of financial performance.

1.2. Empirical Literature

Previous empirical studies examining the relationship between financial technology (FinTech) and the profitability of commercial banks, with specific attention to studies conducted in Nigeria and other emerging economies. Studies on FinTech and Bank Profitability in Nigeria such as Olatinwo et al. (2022) examined the impact of digital financial services on the financial performance of commercial banks in Nigeria. The results showed that there is no significant effect of POS service adoption on EPS of commercial banks in Nigeria. The research identified a conceptual gap, noting a lack of empirical evidence on how other critical digital financial services channels (mobile and internet banking) affect EPS or overall profitability. John et al. (2023) studied the effect of e-payment systems on the financial performance of deposit money banks in Nigeria. The results revealed a positive relationship between internet banking and profitability, and POS

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and internet banking have positive relationships with ROA, while ATM has a negative significant relationship with ROA. The study identified a time gap, noting that the data covered the period 2012 to 2021 and excluded the most recent years which this study covers. Otonne et al. (2023) revealed that FinTech channels together exert a significant impact on bank performance in both the short run and long run. However, the study was limited by a small sample size of only five listed deposit money banks out of eleven quoted on the Nigerian Exchange Group (NGX). Ajibola et al. (2024) showed that cashless economy initiatives positively correlate with improved profitability metrics. The research noted limitations of a five-year period and a sample of 14banks, which provides limited observations. Akintunde et al. (2024) revealed a significant relationship between FinTech expenditure and return on assets of Nigerian deposit money banks. The study identified a methodological gap, noting that it focused on ROA but did not integrate the concept of risk, which is intrinsically linked to the cost and sustainability of profitability. Aniekan et al. (2024) indicated that mobile pay has a positive but insignificant effect on profitability and correlation analysis showed ROE had a positive relationship of with profitability. The research identified a contextual gap, noting the use of only a single profitability measure (ROA) and a timeframe that does not cover recent years.

Abdullahi et al. (2025) revealed that ATM, POS, and Mobile Banking have significant positive effects on EPS, whereas Internet Banking has an insignificant negative relationship with EPS of deposit money banks in Nigeria. Abel et al. (2025) indicated that e-banking channels, particularly ATMs, internet banking, and instant payment, have become critical drivers of profitability and operational efficiency in Nigeria. The research identified a methodological gap, noting the failure to account for the impact of modern FinTech innovations such as AI and blockchain technology, which are critical drivers of profitability. Ekwunife (2025) reveals that the technology adoption index has no significant effect on sustainable growth of listed deposit money banks in Nigeria. The research identified a conceptual gap, noting that it focused on sustainable growth and combined profitability (ROE) with dividend retention policy, leading to indirect measurement. Enadeghe and Mohammed (2025) indicated that ATM, POS, and mobile banking have a positive and significant effect on the financial performance of deposit money banks in Nigeria. The research identified a conceptual and time gap, noting that variations in POS influence across studies underscore the channels relatively limited direct profitability impact. Irejeh et al. (2025) The results showed that ATM, POS, and mobile banking have positive effects on financial performance, while web pay has a negative effect. The research identified a geographical gap, noting that the use of quarterly data may not adequately capture bank-specific differences in digital adoption strategy. Olatoke et al. (2025) The findings showed that ATM, POS, and mobile banking each have significant positive effects on deposit money bank performance. The research acknowledged methodological and geographical gaps, noting that the study adopted only quantitative methods and was restricted to Katsina metropolis.

Studies on fintech and bank profitability in other African countries Chepkoech (2022) lts showed that financial technology has a major impact on ROA, and online banking had a positive and statistically significant influence on bank profitability in Kenya. The research identified contextual and empirical gaps, noting that the emphasis was placed on a few factors and qualitative data was disregarded. Mashamba and Chikutuma (2023) The results showed that bank-specific factors positively and significantly impact profitability, while industry concentration negatively impacts profitability. The research

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noted limitations in data availability and quality, as well as sample size and time span. Muttai et al. (2023) studied revealed that ATMs have a negative significant effect, while other channels were insignificant, and Fintech explains performance weakly. The study identified a gap, noting that it focused only on commercial banks in Kenya excluding other financial institutions, and financial performance was measured using only ROA.

Studies on fintech and bank profitability in other emerging economies such as Renu et al. (2021) measured the impact of Fintech adoption on banks' profitability in India. The result showed that there is a positive significant impact of FinTech adoption on bank profitability. The research identified a practical gap, noting a narrow sample of only eight Indian banks without cross-country comparison. Nguyen (2025) examined the impact of FinTech on bank profitability and bank stability in Vietnam. The results indicated that an increase in bank equity significantly leads to improvement in bank stability and profitability. The research identified time and geographical gaps, noting that the scope was limited to 14 listed commercial banks in Vietnam Yuan et al. (2025) conducted an empirical study on the impact of financial technology on the profitability of China's listed commercial banks. The results showed a negative and significant effect on ROA and FinTech. The research identified a research gap, noting limited attention to non-linear effects and imprecise measurement of the FinTech environment.

2. Methodology

A time series econometric approach was adopted to examine the relationship between financial technology and the profitability of commercial banks in Nigeria using quarterly data from 2012 to 2025. Secondary data was utilized for the study, Data on Earnings Per Share (EPS) and control variables (Bank Size) were sourced from the published annual reports and financial statements of selected commercial banks, and World Bank's Global Financial Development Database. Fintech indicators (ATM, POS, MB, IB) were gathered from Central Bank of Nigeria statistical bulletin. The study employs the Autoregressive Distributed Lag (ARDL) model stationarity is examined using the Augmented Dickey-Fuller (ADF) unit root tests (Dickey & Fuller, 1979; Desta &Fikreyohannes, 2025). The Bounds Cointegration Test is then applied to determine the existence of a long-run relationship among the variables (Pesaran et al., 2001; Muneer, 2024). This study adopts and modifies the model of Olatinwo et al., (2022) which analyzed the impact of digital financial services on the financial performance of commercial banks in Nigeria. Their model was specified as follows:

EPS = f (ATM, POS) ..... (1)

However, the study overlooked the role of mobile banking (MB), internet banking (IB), and bank size (BS) in influencing the relationship between financial services and the financial performance of commercial banks in Nigeria's banking sector. The revised model is thus specified as:

EPS=f (ATM, POS, MB, IB, BS) .....(2)

Banking sector profitability is measured by EPS. Thus, the model is broken down econometrically and expressed as:

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$$EPS = \alpha + \ln \beta_1 ln\, ATM_t + lnPOS_t + lnMB_t + lnIB_t + lnBS_t + \varepsilon_t \quad \ldots\ldots\ldots\

Table 2. Correlations Matrix

	EPS	LATM	LINB	LMB	LPOS	BSIZE	Vif	Tols
EPS	1.000000	-0.1745	0.4413	0.2013	0.0937	0.0739	1.41	0.71
LATM	-0.1745	1.000000	0.2480	0.2475	0.3182	0.1782	1.49	0.68
LINB	0.4413	0.2480	1.000000	0.3177	0.2755	0.1723	1.59	0.63
LMB	0.2013	0.2475	0.3177	1.000000	0.2075	0.6702	1.20	0.83
LPOS	0.0937	0.3182	0.2755	0.2075	1.000000	0.1703	1.57	0.66
BSIZE	0.0739	0.1782	0.1723	0.6702	0.1703	1.000000	1.33	0.77

Source: Author's Computation (2026)

Table 2 presents the result of correlation analysis and Variance Inflation Factor (VIF), among the explanatory variable in the study. As shown in the table, it revealed no evidence of severe multicollinearity. ATM transaction (lATM) are negative associated with EPS, internet banking transaction (lINB), mobile banking transaction (lMB) and POS transactions are positive associated with EPS. Suggesting that electronic payment activities may play a significant role in enhancing profitability. Since all correlation coefficients are well below the conventional threshold of 0.80, the VIF that provide a more reliable assessment of multicollinearity. The VIF values range from 1.20 to 1.59, which are substantially below the commonly accepted threshold of 10 and even below the more conservative threshold of 5. Similarly, the Tolerance values range from 0.63 to 0.83, all of which are well above the minimum acceptable value of 0.10. The low VIF values and high Tolerance values indicate the absence of serious multicollinearity among the explanatory variable. Therefore multicollinearity is unlikely to bias the regression estimates.

Table 3. Unit Root Test

Variables	*ADF Test At level*	*P-value At level*	*ADF Test 1st difference*	*5% Critical Value*	*P-value*	*Stationary*	*Order of integration*
EPS	1.643500	0.9994	-10.54588	-2.917	0.0000	1st difference	I (1)
LINB	-0.670742	0.8453	-7.710316	-3.495295	0.0000	1st difference	I (1)
LATM	0.252100	0.9735	-9.283284	-3.495295	0.0000	1st difference	I (1)
LPOS	-2.265598	0.1866	-7.635467	-2.916566	0.0000	1st difference	I(1)
LMB	-2.892958	0.0526	-3.210818	-2.917650	0.0248	Level	I (0)
BSIZE	-2.033921	0.2719	-5.124964	-2.916566	0.0001	1st difference	I (1)

Source: Author's Computation (2026)

Table 3 presents the results of the Augmented Dickey-Fuller (ADF) unit root test conducted to determine the stationarity properties of the variables employed in the study. The decision rule for the ADF test is to reject the null hypothesis of a unit root when the absolute value of the ADF test statistic exceeds the critical value at the 5% significance level and the associated probability value is less than 0.05. Under this condition, the variable is considered stationary. The results indicate that all variable became stationary after first differencing. Since the variables are integrated at I(1) and none is integrated at

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I(2), the data satisfy the preconditions for the application of the ARDL bounds testing framework.

Table 4. ARDL Bounds Cointegration Test

Test Statistic	Value	K
F-statistic	12.51023	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Source: Author's Computation (2026)

Table 4 presents the results of the ARDL Bounds Test conducted to determine whether a long-run equilibrium relationship exists between digital financial inclusion indicators and financial performance. The Bounds Test is based on the null hypothesis that no long-run relationship exists among the variables against the alternative hypothesis of cointegration. As shown in the table the estimated F-statistic is 12.5102, which is substantially higher than both the lower bound [I(0)] and upper bound [I(1)] critical values at all conventional significance levels, this means the null hypothesis of no cointegration is rejected and it implies that a stable long-run equilibrium relationship exists between Earnings per Share (EPS) and the explanatory variables, namely Automated Teller Machine transactions (LATM), Internet Banking transactions (LINB), Mobile Banking transactions (LMB), Point-of-Sale transactions (LPOS), and Bank Size (BSIZE).

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Table 5. Short Run Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EPS(-1))	-0.690259	0.172791	-3.994770	0.0005
D(EPS(-2))	0.298564	0.123174	2.423920	0.0196
D(EPS(-3))	-0.779193	0.156914	-4.965728	0.0000
D(LATM)	-1.383886	0.359235	-3.852320	0.0007
D(LMB)	0.843343	0.354044	2.382033	0.0248
D(LINB(-2))	0.206137	0.103827	1.985379	0.0577
D(LINB(-3))	0.487503	0.097972	4.975969	0.0000
D(LPOS)	1.970922	0.639513	3.081909	0.0048
D(LPOS(-3))	0.937994	0.259360	3.616574	0.0013
D(BSIZE)	4.865558	0.729377	6.670839	0.0000
CointEq(-1)	-0.702511	0.299466	-2.345882	0.0272

Cointeq = EPS - ((-0.8451*LATM -0.3923*LMB -4.1732*LINB + 4.6724*LPOS + 4.4942*BSIZE + 744.8251)

Long Run Coefficients Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LATM	-0.845147	0.246756	-3.425026	0.0014
LMB	0.392359	0.172718	2.271671	0.0282
LINB	4.173240	3.921536	1.064185	0.2970
LPOS	4.672435	2.063309	2.264535	0.0321
BSIZE	4.494235	0.298674	15.047288	0.0000
C	744.825072	600.289416	1.240777	0.2258

Source: Author's Computations (2026)

This study examined the impact of fintech on the profitability of commercial banks in Nigeria using ATM transactions, Internet Banking, Mobile Banking, Point-of-Sale (POS) transactions, and Bank Size over the period 2012–2025 as shown in table 5. The ARDL results indicate that fintech influences bank profitability differently across the various digital banking channels. The significant error correction mechanism further suggests that although short-run disturbances may occur, the banking sector possesses the capacity to return to its long-run equilibrium, reflecting the stability of the relationship between fintech adoption and financial performance.

The findings reveal that increased ATM transactions are associated with lower profitability. Economically, this suggests that expanding ATM operations does not necessarily translate into higher returns for banks because the costs of acquiring, maintaining, securing, and servicing ATM infrastructure may outweigh the income generated through ATM-related services. This finding agrees with the empirical evidence reported by Olatinwo et al. (2022), Otonne et al. (2023), and Abdullahi et al. (2025), who

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found that investment in certain electronic banking channels may adversely affect bank performance when operating and maintenance costs become excessive. The result also lends support to the Transaction Cost Theory, which argues that technological innovations improve organisational performance only when the efficiency gains exceed the associated implementation and operating costs.

Unlike ATM transactions, mobile banking contributes positively to bank profitability. This finding suggests that the growing use of mobile banking enables banks to process more transactions electronically, broaden financial service delivery, reduce dependence on physical banking channels, and generate additional non-interest income. This finding agrees with the studies of Ajibola et al. (2024), Akintunde et al. (2024), and Abel et al. (2025), who similarly reported that mobile banking improves bank performance by increasing transaction volumes and enhancing operational efficiency. The result is also inline with the Technology Acceptance Model, which argues that customers are more likely to adopt technologies they perceive as useful, convenient, and easy to use. As customer acceptance of mobile banking increases, banks benefit from greater usage and improved financial performance.

The findings further indicate that internet banking improves profitability in the short run but does not exert a statistically meaningful influence over the long run. This suggests that internet banking provides immediate operational benefits by improving service delivery, reducing customer waiting time, and facilitating convenient access to banking services. However, as internet banking becomes a standard service offered by virtually all commercial banks, its ability to create a sustained competitive advantage appears to diminish. This finding agrees with the studies of John et al. (2023), Enubrenyo and Obi (2025), and Nguyen (2025), who also found that although internet banking enhances operational efficiency, its contribution to long-run financial performance is often insignificant. The finding equally supports the Diffusion of InnovationTheory, which explains that once an innovation becomes widely diffused across an industry, its ability to generate superior competitive returns gradually declines.

POS transactions emerged as one of the strongest drivers of bank profitability. The finding implies that the increasing acceptance of electronic payments has created additional revenue opportunities for commercial banks through higher transaction volumes, increased commission income, and greater utilisation of digital payment services. This finding agrees with the empirical evidence provided by Ekwunife (2025), Irejeh et al. (2025), Olatoke et al. (2025), Nguyen (2025), Aniekan et al. (2024), Mashamba and Chikutuma (2023), Muttai et al. (2023), and Renu et al. (2021), all of whom concluded that digital payment technologies improve the financial performance of financial institutions. The result also supports both the Technology Acceptance Model and the Diffusion of Innovation Theory, as customers increasingly adopt POS technology because of its speed, convenience, reliability, and ease of use, thereby increasing transaction activity and bank earnings.

The study also establishes that larger banks are better able to translate fintech investments into improved financial performance. This finding suggests that banks with larger asset bases possess stronger financial capacity to invest in digital infrastructure, absorb technology-related costs, and exploit economies of scale. Such institutions are therefore better positioned to maximise the benefits of fintech adoption than relatively smaller banks. This finding agrees with Enadeghe and Mohammed (2025), Abdullahi et al. (2025), and Abel et al. (2025), who similarly found that larger financial institutions derive

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greater performance gains from digital innovation because of their superior financial, technological, and managerial resources. The finding is further supported by the Diffusion of Innovation Theory, which argues that organisations with greater resources are more capable of adopting and successfully implementing technological innovations.

Conclusion

The study concludes that fintech has a significant impact on the profitability of commercial banks in Nigeria. The increasing adoption of digital financial technologies has transformed banking operations by improving transaction efficiency, enhancing customer convenience, and creating alternative channels for financial service delivery. However, the findings suggest that the profitability gains from fintech are not automatic. While certain fintech innovations contribute positively to bank performance, others may generate substantial operational and maintenance costs that can reduce profitability if not effectively managed. Therefore, the overall impact of fintech on profitability depends son the ability of banks to strategically deploy digital technologies, maximize their benefits, and minimize associated costs. The study therefore concludes that fintech remains a valuable tool for improving the competitiveness and profitability of commercial banks, provided that adequate investments are made in digital infrastructure, innovation, security, and operational efficiency. It was recommended that Commercial banks should strengthen the integration and coordination of their digital service channels. Banks should continue to expand and modernize electronic payment systems. Management of commercial banks should regularly review the cost structure and operational efficiency of their fintech-related services. Regulatory authorities and commercial banks should work together to deepen digital financial inclusion by improving cybersecurity standards, strengthening consumer trust, and promoting wider access to digital financial services across different customer segments.

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