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The Efficacy of Online Banking as a Payment Method in Nigeria: An Empirical Analysis from Delta State

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ABSTRACT
This study examines the efficacy of online banking as a payment method in Nigeria, focusing on user engagement across urban and rural divides, preferences of customers and commercial banks, the impact of Central Bank of Nigeria (CBN) policies, and profitability compared to traditional banking. Employing a descriptive survey design, primary data were collected from 120 respondents (56 bank staff and 64 customers) in Delta State using structured questionnaires. Quantitative analyses, including mean scores, t-tests, and ANOVA, revealed significant urban-rural disparities in adoption, driven by infrastructure and digital literacy gaps. Customers preferred online banking for speed and accessibility, but valued traditional methods for high-value transactions. Commercial banks favored online platforms for efficiency and cost savings. CBN policies were positively perceived, though implementation challenges persisted. Online banking demonstrated higher profitability through reduced operational costs and increased transaction volumes. The findings advocate for enhanced digital infrastructure, improved policy communication, and hybrid service models to promote financial inclusion in Nigeria's evolving financial landscape.
Keywords: Online Banking, Digital Divide, Financial Inclusion, CBN Regulations, Bank Profitability.

INTRODUCTION

The Nigerian banking sector has undergone a transformative evolution over the past two decades, propelled by rapid advancements in information and communication technology (ICT). This technological revolution has redefined financial service delivery, positioning online banking, often referred to as electronic banking (e-banking), as a pivotal innovation. Online banking encompasses digital platforms, including internet banking websites, mobile applications, and automated teller machines (ATMs), that enable customers to perform financial transactions such as fund transfers, bill payments, balance inquiries, and loan applications remotely (Agbada, 2008). In Nigeria, this shift aligns with national objectives to modernize the payment system, reduce cash dependency, and enhance financial inclusion, particularly for the unbanked and underbanked populations.

The Central Bank of Nigeria (CBN) has been a key driver of this transformation through policies like the 2012 Cashless Policy, designed to curb physical currency circulation and promote electronic payments (CBN, 2023). As of August 2025, Nigeria records over 109 million active internet users, representing about 50% of the population, fueled by widespread smartphone adoption. This digital infrastructure has facilitated online banking, with debit and credit cards accounting for a significant portion of online retail payments. Mobile money has also surged, with over 37 million registered accounts in Nigeria by 2023, and further growth is projected in 2025, where the industry has evolved into a thriving sector with vast

business potential. Over 200 licensed mobile money operators are active across the country, and the CBN has approved 13 Payment Service Banks to boost inclusion. By 2025, formal financial inclusion is expected to have increased to around 64%, reflecting the impact of CBN's ongoing cashless policy updates, which now prioritize open banking, contactless payments, and regulatory sandbox expansion.

Online banking offers significant advantages over traditional methods, including speed, 24/7 accessibility, reduced transaction costs, and convenience, particularly in a geographically diverse nation like Nigeria, where physical banking infrastructure is often limited (Okifo & Igbunu, 2015). Customers can bypass long queues at branches, performing transactions via smartphones or computers, which enhances efficiency and accessibility. For banks, online platforms reduce operational costs, streamline service delivery, and expand market reach (Udeze et al., 2013). However, the adoption of online banking faces substantial challenges. Cybersecurity threats, including phishing, hacking, and identity theft, undermine user trust, with 70,111 fraud cases reported in 2024, resulting in losses surging by 350%. The digital divide further complicates adoption, with urban areas enjoying higher internet penetration compared to rural regions (NBS, 2022). Digital illiteracy, particularly in rural areas, increases vulnerability to fraud and limits effective platform use (Adeoye & Elegbeleye, 2021).

Regulatory frameworks play a critical role in addressing these barriers. The CBN has implemented measures such as the Nigeria Electronic Fraud Forum (NeFF), guidelines for electronic payment channels, and the Payment Card Industry Data Security Standard (PCI DSS) to enhance security and reliability (CBN, 2023). Despite these efforts, gaps in infrastructure, policy implementation, and public awareness persist. Online banking's potential to foster financial inclusion is significant, as it offers a viable solution to reach unbanked and underbanked populations, reduce cash-handling costs, combat corruption, and improve payment system efficiency (CBN, 2023). With BVN-linked bank accounts reaching 66.2 million as of July 2025, and fintech developments emphasizing digital currencies and cryptocurrencies for inclusion, the landscape is ripe for innovation. This study investigates the efficacy of online banking in Nigeria, focusing on Delta State, to provide empirical insights into its adoption, user preferences, regulatory impacts, and profitability, captivating readers with the promise of a digitally empowered future.

Statement of the Research Problem

Despite its transformative potential, online banking in Nigeria faces persistent challenges that undermine its efficacy as a payment method. Unreliable network infrastructure, particularly in rural areas, leads to frequent transaction failures and user dissatisfaction (Nwuezeigwe & Obisue, 2020). Cybersecurity threats, including phishing, hacking, and identity theft, erode consumer confidence, with significant financial losses reported annually (NIBSS, 2023). The digital divide, characterized by disparities in internet access and digital literacy, restricts adoption, leaving rural populations underserved despite CBN's financial inclusion objectives (NBS, 2022). While customers value online banking's convenience, many prefer traditional methods for high-value transactions due to perceived security and reliability concerns (Bagudu & Okolie, 2022). Commercial banks benefit from reduced operational costs but face challenges in scaling digital platforms due to infrastructure deficits. The effectiveness of CBN's regulatory policies, such as the Cashless Policy, remains debated due to implementation gaps and communication challenges (CBN, 2023). These issues necessitate a comprehensive evaluation of online banking's engagement levels, user and bank preferences, policy impacts, and profitability to inform strategies for enhancing its adoption and effectiveness in Nigeria, inspiring a vision of inclusive economic growth.

Research Questions

This study aims to answer the following questions:

1. How successful is Nigeria's e-banking system?
2. How much do people in rural and urban areas use online banking?
3. Do bank customers favour online payment methods over conventional ones?
4. Do commercial banks favour online banking over conventional banking?
5. Do commercial banks benefit from CBN E-banking policies?

6. Does the e-banking payment system increase commercial banks' profits?

Objectives of the Study

The main goal of this study is to examine the efficacy of Nigeria's e-banking payment system using a few chosen commercial banks. In particular, it seeks to: i. Ascertain the level of participation in the e-banking system among both urban and rural residents. j. Determine whether, despite its drawbacks, bank customers prefer the electronic banking payment system over the traditional banking payment system. k. Assess whether commercial banks generate higher profits from e-banking compared to the conventional banking payment system.

Research Hypotheses

The following hypotheses are proposed in light of the study's goals:

1. H1: Neither urban nor rural residents use online banking.
2. H2: E-banking payment systems are not preferred by bank consumers over traditional banking payment systems.
3. H3: E-banking payment systems are not preferred by commercial banks over traditional banking payment systems.
4. H4: Commercial banks do not benefit from CBN's internet banking policies.
5. H5: When compared to traditional banking systems, commercial banks do profit more from online banking payment systems.

Significance of the Study

This study is crucial for advancing Nigeria’s digital payment ecosystem and supporting financial inclusion goals. By identifying barriers to online banking adoption, it provides actionable insights for financial institutions to enhance service delivery, improve user experience, and address cybersecurity concerns (CBN, 2023). For policymakers and regulators, the findings offer guidance on fostering an enabling environment for online banking, tackling issues like the digital divide and regulatory gaps. The study’s focus on Delta State, with its urban-rural diversity, ensures relevance to Nigeria’s broader financial landscape. Academically, it contributes empirical evidence to the literature on digital finance in developing economies, facilitating comparative studies and informing global discourse on e-banking’s socioeconomic impacts. By highlighting customer and bank preferences, it aids in designing hybrid service models that cater to diverse needs, ultimately promoting a more inclusive and efficient payment system that captivates with its potential to empower millions.

Scope of the Study

The study focuses on Delta State and uses primary data gathered from a few chosen commercial banks and bank clients in both urban and rural areas of the state. A thorough analysis of how online banking can be enhanced for the bank's and its clients' benefit will be conducted using the information supplied.

Operational Definition of Terms

- Traditional banking payment: A banking payment method that necessitates in-person bank visits for customers to complete their banking activities.
- Online banking payment system: A digital platform that enables consumers to safely transfer money between a buyer and a seller via bank apps, credit cards, or debit cards to pay for goods or services online.
- Digital illiteracy: The lack of ability to locate, assess, and share information using digital technology, combining cognitive and technical skills.
- Digital divide: The disparity in access to digital technologies (e.g., internet, laptops, tablets, cellphones) between rural and urban residents.
- Financial inclusion: Access to practical and affordable financial services and products for people and companies that are banked.

LITERATURE REVIEW

Conceptual Issues

Electronic banking (e-banking) involves conducting financial transactions via ICT-enabled platforms, including internet banking, mobile apps, ATMs, and electronic fund transfers (Agbada, 2008). It ranges from informational websites (Level 1) to fully transactional services (Level 3) (Ria, 2021). Key e-payment categories include internet payments, mobile payments, bank transfers, e-wallets (e.g., PayPal, Google Pay), and cards (Kinyanjui, 2018).

In Nigeria, e-payments encompass digital transactions via computers, the internet, or mobile devices, facilitating real-time transfers, bill payments, and account management (Kulkarni, 2004; Sadr, 2013). Since 2005, e-banking has accelerated global competitiveness, reducing costs and boosting profits (Udeze et al., 2013; Saleh & Alipour, 2010). Classified as mobile, internet, and card-based e-payments, it supports the CBN's cashless initiative (Bankole et al., 2011).

The importance of e-payments includes strengthening cashless policies to curb inflation, improving liquidity, increasing deposits, generating revenue, and enhancing bank efficiency (Rasiah, 2010; Berger & Humphrey, 2012). Nigeria's e-payment evolution from manual to digital began around 2007, driven by globalization and technology (Amudi, 2015; Salawu & Salawu, 2007).

Empirical Review

Empirical studies reveal mixed impacts of e-payments on bank efficiency. Ehiedu et al. (2023) found no significant effect on operational efficiency in Nigerian banks from 2012-2016. Josephine (2021) reported insignificant impacts, recommending campaigns for e-payment adoption. Moses et al. (2024) noted positive effects from mobile applications but negative from POS and web payments, suggesting infrastructure investments.

Nwuezeigwe and Obisue (2020) highlighted benefits like reduced cash transactions but challenges, including infrastructure deficits and security concerns, advocating IT integration to combat corruption. Zango (2019) found positive associations between e-payment values and GDP contributions, urging public-private collaborations for literacy.

Bagudu and Okolie (2022) emphasized e-payments' advantages in safety, accessibility, and economic growth under the cashless policy. Gbanador (2023) demonstrated long-term positive impacts on deposit money banks' performance via mobile banking. Frank and Binaebi (2019) linked ATM, internet, and mobile banking to asset growth, though POS had negative effects.

Okifo and Igbunu (2015) noted exponential growth in e-transactions but security/privacy issues. Amos et al. (2020) found no significant e-banking impact on performance metrics like ROE and ROA. Amu et al. (2016) observed cointegration between POS and demand deposits. International studies, such as Ozsoz and Helvacioglu (2008) in Turkey and Francesca and Peter (2008) in Europe, showed delayed but positive profitability effects.

Enoruwa et al. (2019) confirmed positive correlations between electronic channels and bank deposits. Abaenewe et al. (2013) reported improved ROE post-e-banking adoption in Nigeria.

Theoretical Framework

The study adopts the Technology Acceptance Model (TAM) (Davis, 1989), which posits that perceived usefulness (PU) and ease of use (PEOU) influence behavioral intention (BI) and actual system use. External variables like social influence and cognitive factors enhance adoption (Chutur, 2009). Complementary theories include Diffusion of Innovations (Rogers, 1962), emphasizing relative advantage, compatibility, complexity, trialability, and observability, and Active Financial Development Theory, advocating supply-driven financial tools for inclusion (Inyang, 2017).

METHODOLOGY

Research Design and Data Sources

A descriptive survey design was utilized, with primary data sourced from questionnaires administered to bank staff and customers in Delta State, Nigeria. Delta State, spanning latitudes 5°00' to 6°45'N and

longitudes 5°00' to 6°45'E, comprises 25 LGAs and borders several states, making it representative for urban-rural analysis.

Sampling Procedure and Sample Size

Multi-stage random sampling was employed as follows: (1) selection of Delta Central and North senatorial zones; (2) five LGAs (Ughelli North, Sapele, Ethiope East, Ukwani, and Ndokwa West); (3) one community per LGA (urban: Sapele, Ughelli, Kwale; rural: Abraka, Obiaruku); and (4) one bank per community (First Bank, Zenith Bank, Unity Bank, Access Bank, and Ecobank) selected using convenience and judgment sampling. The sample size of 120 respondents (56 staff and 64 customers) was determined using Cochran's sample size calculation, with parameters set at $z = 1.96$, $p = 0.5$, $q = 0.5$, and margin of error $(e) = 0.09$ (Cochran, 1977; Chanuan et al., 2021).

Data Collection and Validation

Questionnaires featured Likert-scale items, differentiated for staff and customers. A pilot study at Polaris Bank and United Bank for Africa validated the instrument. Content and face validation were conducted by three experts. Ten trained research assistants distributed questionnaires.

Data Analysis

Descriptive statistics (mean, SD) evaluated responses against a 2.50 benchmark. Inferential statistics included t-tests and ANOVA at $\alpha=0.05$, analyzed via SPSS.

RESULTS

Presentation of Findings

Urban engagement (mean=3.33) exceeded rural (mean=3.09), with urban users citing convenience (mean=3.30) and security trust (mean=3.33), while rural users faced access issues (mean=2.48) but appreciated reduced visits (mean=3.35).

Customers preferred online for speed (mean=3.36) but traditional for large transactions (mean=3.46).

Banks favored online for efficiency (mean=3.21) and cost savings (mean=2.89).

Staff rated CBN policies higher (mean=3.28) than customers (mean=3.14), praising security (mean=3.54) but noting compliance challenges (mean=2.39 for customers).

Online banking was more profitable (mean=2.76), via cost reductions (mean=2.82).

The following tables summarize the SPSS outputs:

Research Question	Key Metric	Mean (Urban/Staff)	Mean (Rural/Customer)
Engagement	Grand Mean	3.33	3.09
Customer Preference	Grand Mean	3.25	-
Bank Preference	Grand Mean	3.09	-
CBN Policy	Grand Mean	3.28	3.14
Profitability	Grand Mean	2.76	-

Hypothesis Testing

All hypotheses were rejected based on the statistical tests, indicating significant differences and preferences in favour of online banking.

ANOVA for HO1

ANOVA of Differences in the Extent to Which Urban and Rural Dwellers Are Involved in the Online Banking System.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	89.745	1	89.745	11.807	.001
Within Groups	471.255	62	7.601		
Total	561.000	63			

One-Sample Statistics for HO2

	N	Mean	Std. Deviation	Std. Error Mean
HO2	64	32.25	3.256	.407

One-Sample Test for HO2

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval Lower	Upper
HO2	79.232	63	.000	32.250	31.44	33.06

One-Sample Statistics for HO3

	N	Mean	Std. Deviation	Std. Error Mean
HO3	**56**	**30.86**	**3.210**	**.429**

One-Sample Test for HO3

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval Lower	Upper
HO3	71.927	55	.000	30.857	30.00	31.72

ANOVA for HO4

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	91.910	1	91.910	5.038	.028
Within Groups	1350.024	118	18.244		
Total	1441.934	119			

One-Sample Statistics for HO5

	N	Mean	Std. Deviation	Std. Error Mean
HO5	56	27.64	3.729	.498

One-Sample Test for HO5

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval Lower	Upper
HO5	55.471	55	.000	27.643	26.64	28.64

DISCUSSION

The results align with the Technology Acceptance Model (TAM), where perceived usefulness and ease of use drive adoption, with urban advantages reflecting better access (Davis, 1989; NBS, 2022). Rural gaps echo digital divide literature, emphasizing the need for infrastructure investments to achieve 80% financial inclusion targets (Adeoye & Elegbeleye, 2021). Customer preferences for online banking's speed and accessibility, while retaining traditional methods for security-sensitive transactions, support hybrid models that blend digital and physical services (Bagudu & Okolie, 2022). Commercial banks' endorsement of online platforms for efficiency and cost savings highlights profitability gains, consistent with mobile-driven increases in transaction volumes (Moses et al., 2024).

CBN policies, positively rated but with implementation challenges, underscore the need for better communication and enforcement, especially in light of rising fraud losses (CBN, 2023). The study's findings contribute to understanding digital finance dynamics, revealing that online banking not only boosts profitability through operational savings but also advances financial inclusion, as evidenced by the rise in BVN-linked accounts to 66.2 million in 2025.

Limitations include the regional focus on Delta State, potentially limiting generalizability, and reliance on self-reported data, which may introduce bias. Future research should incorporate nationwide samples, objective transaction data, and longitudinal analyses to track post-2025 trends in fintech innovations like open banking.

CONCLUSION AND RECOMMENDATIONS

In conclusion, online banking emerges as a highly efficacious payment method in Nigeria, demonstrating superior engagement in urban areas, situational user preferences, beneficial CBN policies, and enhanced profitability. These insights captivate with the promise of a digitally inclusive economy, where technology bridges gaps and empowers communities.

RECOMMENDATIONS

- Strengthen digital infrastructure in rural areas through public-private partnerships to close the digital divide.
- Improve CBN regulations by enhancing cybersecurity measures and policy communication to build trust and reduce fraud.
- Preserve hybrid service alternatives, combining online and traditional banking to accommodate diverse client demands and ensure comprehensive financial inclusion.

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