

Digital Banking Adoption, Financial Inclusion, and Economic Development Among Youths and Business Owners in Lagos, Nigeria

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ABSTRACT: The digitalisation of the banking sector represents one of the most consequential technological shifts in the Nigerian financial landscape. Despite the recognised potential of digital banking to accelerate financial inclusion and catalyse broader economic development, significant barriers persist. Inadequate digital literacy, infrastructural deficiencies, cybersecurity vulnerabilities, and systemic poverty are prominent. This study investigates the drivers of and resistance to digital banking adoption among youth and business owners in Lagos, Nigeria. It examines the implications of banking digitalisation for financial inclusion and national economic development.

A quantitative, cross-sectional research design was employed, utilising a structured questionnaire administered to 181 respondents drawn from tertiary institution students and mobile-phone traders at Saka Tinubu Market, Victoria Island, Lagos. Data were analysed using IBM SPSS, incorporating descriptive statistics, normality tests (Kolmogorov-Smirnov), ordinal regression analysis, and Spearman non-parametric correlation.

The results indicate that Improved Online Banking (IOB) infrastructure is a statistically significant positive predictor of customers opting for digital banking (OOB), whilst reluctance to adopt online banking (ROB) exerts a significant negative influence. The Spearman correlation coefficients for ROB and IOB with OOB were -0.168 and 0.159, respectively. Ordinal regression further revealed that IOB increased the odds of digital banking adoption by a factor of 2.983, whilst ROB reduced the odds by a factor of 0.523.

The findings underscore the necessity for Nigerian banks, financial regulators, and policymakers to invest strategically in digital infrastructure enhancement, customer-centred cybersecurity, and structured digital literacy programmes. Strengthened digital banking adoption holds significant promise for increasing financial inclusion and stimulating economic growth.

KEYWORDS: Banking Digitalisation; Financial Inclusion; Digital Literacy; Mobile Banking; Economic Development

INTRODUCTION

The global banking landscape has undergone a profound transformation driven by technological advancement, fundamentally altering the way financial institutions deliver services and customers engage with their finances. The banking digitalisation, broadly understood as the transition from analogue, branch-based service delivery to technology-enabled, multi-channel platforms. This has generated substantial economic efficiencies and expanded access to financial services across developed economies (Cuesta et al., 2015; Lines, 2016). In developing nations such as Nigeria, however, this transition remains incomplete, characterised by a hybrid system that blends traditional banking practices with gradually emerging digital offerings.

Nigeria occupies a strategically significant position within the African and global economic order. As the continent's largest economy and a major oil producer, its economic performance has implications beyond its borders (Manyika et al., 2016). The banking sector plays a pivotal intermediation role in mobilising savings, allocating capital, and facilitating the payment systems that underpin economic activity (Schumpeter, 1952; King & Levine, 1993). Accordingly, the extent to which Nigerian banks successfully digitalise their operations bears directly on the nation's capacity for inclusive economic growth.

Nigerian banks are yet to achieve full digitalisation comparable to their counterparts in advanced economies. Infrastructural deficiencies, policy inadequacies, digital illiteracy, and poverty collectively impede the pace of digital financial transformation. The consequences extend beyond operational inefficiency, as incomplete digitalisation constrains financial inclusion, limiting the participation of millions of Nigerians in the formal financial system. Understanding the specific factors that inhibit or facilitate digital banking adoption is therefore a matter of both scholarly and policy significance.

Despite the acknowledged importance of digital banking, the Nigerian financial sector confronts a constellation of structural challenges: limited digital infrastructure, high rates of digital illiteracy, widespread poverty that constrains access to smart devices, and persistent cybersecurity vulnerabilities (Anichebe, 2019; Ozili, 2020). These challenges are further compounded by the

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competitive incursion of FinTech companies, which offer agile, customer-centric alternatives to traditional banking services, intensifying pressure on incumbent banks to accelerate digital transformation (Thakor, 2020; Gomber et al., 2017).

Against this backdrop, the present study was undertaken to examine the use of digital banking among two demographically distinct but digitally engaged groups in Lagos, Nigeria: tertiary institution students and small business owners. The research fills an identifiable gap in the existing literature, which has tended to address digital banking adoption in large, developed economies whilst underexploring the contextual dynamics of developing nations such as Nigeria.

This study aims to determine the relationship between digital inclusiveness, customer security perceptions, and banking digitalisation in Nigeria, and to assess the implications of enhanced digital adoption for economic growth.

CONCEPTUAL AND THEORETICAL PERSPECTIVES ON BANKING DIGITALISATION

Banking digitalisation has transformed financial service delivery through the integration of digital technologies that improve transaction efficiency, accessibility, and customer experience (Liebana-Cabanillas et al., 2013; Boriseukov et al., 2021; Cuesta et al., 2015). This transformation has been accelerated by increasing mobile phone penetration, changing customer preferences, and the emergence of FinTech firms that challenge traditional banking models through more agile and customer-centred services (Chen et al., 2016; Gomber et al., 2017; Marous, 2019; Thakor, 2020). In developing economies such as Nigeria, digital banking is increasingly recognised as a critical mechanism for promoting financial inclusion and supporting broader socio-economic development (Ozili, 2020; Manyika et al., 2016).

The study is anchored primarily on the Technology Acceptance Model (TAM), which posits that technology adoption is driven by perceived usefulness and perceived ease of use (Davis, 1989). Within this framework, Opting for Online Banking (OOB) reflects positive adoption behaviour, Reluctance to Online Banking (ROB) captures perceived barriers such as security concerns and low confidence, while Improved Online Banking (IOB) represents institutional enhancements that increase perceived utility and ease of use. The Diffusion of Innovations (DOI) theory further explains how social influence, communication networks, and institutional support shape technology adoption patterns across different population groups (Rogers, 1983).

Empirical evidence suggests that digital literacy, trust, cybersecurity, and access to digital infrastructure significantly influence digital banking adoption (Eshet-Alkahi, 2002; Deng, 2010; Izogo et al., 2018). Studies from Nigeria and other emerging economies demonstrate that digital financial services can expand financial inclusion, reduce transaction costs, and stimulate economic participation, although persistent concerns regarding fraud, digital skills deficits, and infrastructure limitations continue to constrain adoption (Ondiege, 2010; Nuryakin et al., 2017; Ozili, 2020). Collectively, TAM and DOI provide a robust framework for understanding how individual perceptions and institutional conditions interact to influence digital banking adoption and its implications for social and economic development.

Research Questions

The study is guided by the following research questions:

1. What are the primary reasons for customers choosing online and mobile banking in Nigeria?
2. What factors contribute to reluctance in adopting online and mobile banking in Nigeria?
3. How can online and mobile banking services in Nigeria be improved?
4. Are there discernible differences between students and business owners in their views on digital banking adoption?

Research Hypothesis

H0₁: Full digitalisation of Nigerian banks will not encourage greater financial inclusion or contribute to economic development.

H0₂: Full digitalisation of Nigerian banks will encourage greater financial inclusion and contribute positively to economic development.

METHODOLOGY

Research Design

This study adopts a positivist epistemology, assuming social phenomena can be objectively investigated through quantifiable observation and statistical analysis (Saunders et al., 2007). It employs a deductive approach, testing theoretically derived hypotheses via survey data. A correlational, cross-sectional design examines relationships between adoption, reluctance, and online banking improvement at a single point in time. A mono-method quantitative approach is used for its suitability in testing hypothesised relationships and generating replicable, generalisable findings. The survey strategy enables standardised data collection and statistical comparisons across sub-groups (Saunders & Lewis, 2012).

Population and Sampling

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The target population is comprised of tertiary institution students and business owners in Lagos State. Samples from both groups were selected randomly. 181 respondents were sampled, 97 students from the tertiary institutions while 84 respondents were selected among the business owners. Hence, a total of 181 samples were used for the analysis.

Sampling proceeded through a combination of purposive and random sampling. Within the student sub-population, respondents were randomly selected from those meeting the sampling criterion of current or prior use of internet or mobile banking. Within the business owner sub-population, purposive sampling was employed owing to the accessibility of the trading forum. Whilst purposive sampling introduces limitations in terms of external validity, the use of a digitally engaged population ensures internal consistency in respondents' capacity to evaluate the constructs under investigation.

Data collection and instrumentation

Primary data were collected through a structured, self-administered digital questionnaire distributed via WhatsApp group forums affiliated with the Campus Forums and the Phones Dealers Associations in Lagos state. The questionnaire comprised 12 Likert-scale items (five-point scale: 1 = Strongly Disagree to 5 = Strongly Agree) and four demographic screening questions. Items were organised into three thematic sections corresponding to the study's three latent constructs: Opting for Online Banking (OOB), Reluctance to Online Banking (ROB), and Improved Online Banking (IOB). The word 'online' was substituted for 'digitalisation' in all survey items to minimise respondent ambiguity.

Secondary data, drawn from the Central Bank of Nigeria, the Nigerian Communications Commission, the Ministry of Education, and peer-reviewed academic sources, were utilised to contextualise and validate the primary findings.

Validity and reliability

Construct validity was enhanced through grounding the questionnaire items in established survey instruments from prior empirical studies, whilst content validity was ensured through careful alignment between questionnaire items, research objectives, and theoretical constructs. The standardised item wording, absence of ambiguous phrasing, and clear response categories further reinforced measurement validity (Middleton, 2022).

Reliability was secured through the consistency of data collection conditions, the use of a standardised digital questionnaire platform, and the adequacy of the sample size relative to the study population. The reproducibility of results under equivalent conditions is a further indicator of methodological reliability (Middleton, 2022). Secondary data sources were selected based on institutional authority and publication credibility to reinforce the overall trustworthiness of the evidence base.

DATA ANALYSIS

Data were analysed using IBM SPSS Statistics. The analytical strategy proceeded in four stages. First, descriptive statistics were computed for the three latent variables, including means and standard deviations, to characterise the central tendencies and dispersion of responses. Second, normality testing was conducted using skewness and kurtosis measures for initial screening, supplemented by the Kolmogorov-Smirnov test given the sample size of 181. Third, ordinal regression analysis was employed as the primary inferential technique, given that the dependent variable (OOB) is ordinal in nature and the normality assumption was violated. Fourth, Spearman's rank-order correlation was used to assess non-parametric associations between OOB and the independent variables ROB and IOB.

RESULTS AND DISCUSSION

Sample Characteristics

The final sample comprised 181 respondents. Gender distribution was near-equal: 96 respondents were male (53%) and 84 were female (47%). By category, 97 respondents were tertiary institution students (53.5%) and 83 were business owners at Phone Markets in Lagos (46.5%). Of the total sample, 98.9 per cent reported owning or using smartphones for online transactions, with only 1.1 per cent indicating no mobile banking usage. Similarly, 97.8 per cent expressed a preference for online or mobile banking over traditional branch-based banking, with 2.2 per cent preferring traditional banking. These figures reflect the digitally engaged nature of the sample, consistent with the sampling design.

Table 1: Demographic Characteristics and Digital Banking Profile of Respondents (N = 181)

Variable	Category	Freq. (n)	Percentage (%)
Gender	Male	96	53.0
	Female	84	47.0
Respondent Category	Tertiary Institution Students	97	53.5
	Phone Business Owners	83	46.5

Variable	Category	Freq. (n)	Percentage (%)
Smartphone Ownership/Usage for Online Transactions	Use Smartphones for Online Transactions	179	98.9
	No Mobile Banking Usage	2	1.1
Preferred Banking Method	Online/Mobile Banking	177	97.8
	Traditional Branch-Based Banking	4	2.2

Source: Field Survey Data (2025)

DESCRIPTIVE STATISTICS AND NORMALITY TESTING

Descriptive statistics were computed for the three latent constructs: Opting for Online Banking (OOB), Reluctance to Online Banking (ROB), and Improved Online Banking (IOB). Preliminary assessment based on skewness and kurtosis suggested approximate normality. For male respondents, skewness and kurtosis values were 0.691 and 0.075 respectively, while female respondents recorded values of -2.09 and 0.776. These results generally indicated acceptable distributional characteristics at the initial screening stage.

To verify these observations, a Kolmogorov–Smirnov (K–S) normality test was conducted. The results revealed statistically significant departures from normality for most study variables ($p < .05$). Although the OOB construct approached normality ($p = .058$), the ROB and IOB variables remained significantly non-normal. Subsequent logarithmic transformation of the variables failed to achieve normal distributions, as post-transformation K–S tests continued to produce significant results.

Table 2: Descriptive Statistics and Normality Test Results for Latent Variables

Variable	Skewness	Kurtosis	Kolmogorov–Smirnov Statistic (p-value)	Normality Decision	Analytical Approach
OOB (Opting for Online Banking)	Within acceptable range	Within acceptable range	$p = .058$	Approximately normal (K–S non-significant)	Retained for non-parametric analysis due to overall dataset characteristics
ROB (Reluctance to Online Banking)	Within acceptable range	Within acceptable range	$p < .05$	Non-normal	Ordinal Regression / Spearman Correlation
IOB (Improved Online Banking)	Within acceptable range	Within acceptable range	$p < .05$	Non-normal	Ordinal Regression / Spearman Correlation
Male Respondents (Overall Distribution)	0.691	0.075	—	Acceptable univariate normality	Preliminary screening only
Female Respondents (Overall Distribution)	-2.09	0.776	—	Marginal departure from normality threshold	Preliminary screening only

Decision Rule: Skewness and kurtosis values between approximately ± 1.96 indicate acceptable univariate normality. Kolmogorov–Smirnov significance values below .05 indicate violation of normality assumptions.

Given these findings, the assumptions required for parametric statistical procedures were not fully satisfied. Consequently, ordinal regression analysis and Spearman rank-order correlation were adopted as the primary inferential techniques, as these methods are more robust when analysing ordinal and non-normally distributed data (Field, 2018; Hair et al., 2019).

Ordinal Regression Analysis

An ordinal regression analysis was conducted to determine the extent to which Reluctance to Online Banking (ROB) and Improved Online Banking (IOB) predict Opting for Online Banking (OOB). The model fitting information showed that the final model significantly improved prediction relative to the intercept-only model ($p < .001$), indicating that the predictor variables contributed meaningfully to explaining online banking adoption.

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The goodness-of-fit statistics further demonstrated satisfactory model adequacy, with non-significant Pearson ($p = .053$) and Deviance ($p = 1.000$) values, suggesting that the observed data did not differ significantly from model expectations. The Nagelkerke pseudo R^2 value of 0.075 indicates that ROB and IOB jointly accounted for approximately **7.5%** of the variance in online banking adoption. Although modest, this level of explanatory power is consistent with behavioural technology adoption studies where decisions are influenced by numerous psychological, technological, and environmental factors.

Table 3: Ordinal Regression Results Predicting Opting for Online Banking (OOB)

Model Component	Statistic	Value	p-value	Interpretation
Model Information	Fitting Chi-Square	—	< .001	Model significantly improves prediction over the null model
Goodness-of-Fit	Pearson Chi-Square	—	.053	Adequate model fit
	Deviance	—	1.000	Adequate model fit
Pseudo R^2	Nagelkerke R^2	0.075	—	Predictors explain 7.5% of variation in OOB
Test of Parallel Lines	Chi-Square	—	.988	Proportional odds assumption satisfied
Parameter Estimates	Coefficient (B)			
Improved Online Banking (IOB)	B	1.108	.006	Significant positive predictor
Reluctance to Online Banking (ROB)	B	-0.628	.005	Significant negative predictor

Note: Dependent Variable = Opting for Online Banking (OOB). Significance level $\alpha = .05$.

The test of parallel lines was non-significant ($p = .988$), confirming that the proportional odds assumption underlying ordinal regression was satisfied. Examination of parameter estimates revealed that Improved Online Banking (IOB) exerted a significant positive influence on adoption ($B = 1.108$, $p = .006$), indicating that improvements in banking infrastructure, service quality, accessibility, and technological functionality increase the likelihood of customers adopting online banking services. Conversely, Reluctance to Online Banking (ROB) had a significant negative effect on adoption ($B = -0.628$, $p = .005$), suggesting that concerns relating to security, technological complexity, trust deficits, and user confidence reduce customers' willingness to engage with digital banking platforms.

Collectively, these findings underscore the importance of enhancing digital banking infrastructure while simultaneously addressing customer apprehensions and trust concerns to accelerate digital banking adoption and strengthen financial inclusion in Nigeria.

ODDS RATIO ANALYSIS

Route-Two analysis, examining the exponentiated coefficients, provides a more interpretable account of the practical magnitude of these effects. The odds ratio for IOB was 2.983, indicating that a one-unit increase in improved online banking increases the odds of a higher level of digital banking adoption by a factor of approximately three. This represents a substantively significant effect, underscoring the critical role that tangible service improvements play in driving adoption.

By contrast, the odds ratio for ROB was 0.523, indicating a probability reduction: each unit increase in reluctance reduces the odds of higher adoption by approximately half. This finding confirms that perceived barriers — including fraud susceptibility, technical unreliability, and low operational confidence — constitute powerful inhibitors of digital banking engagement. These results align with prior literature documenting the centrality of trust and perceived security in digital banking adoption decisions (Izogo et al., 2018; Yoon, 2010; Curran & Meuter, 2005).

SPEARMAN CORRELATION ANALYSIS

Spearman rank-order correlation analysis, conducted in recognition of the non-normal data distribution, yielded correlation coefficients between OOB and ROB of -0.168 ($p = 0.024$) and between OOB and IOB of 0.159 ($p = 0.032$). Both correlations are statistically significant at the 0.05 level, indicating moderate inverse and direct associations, respectively. These results confirm that reluctance is negatively associated with adoption intention, whilst perceived improvements in digital banking services are positively associated.

Whilst the magnitudes of these correlations are modest, they are consistent with the complexity of digital banking adoption, which is influenced by a wide range of individual, institutional, and contextual factors beyond those captured in the present study.

Hypothesis testing

The findings support the acceptance of H_{01} . The data demonstrate that improved online banking (IOB) is a statistically significant positive predictor of digital banking adoption (OOB), confirming that enhanced digital infrastructure encourages greater numbers

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of Nigerians to engage with formal financial services. Consistent with the theoretical proposition that financial inclusion supports broader economic development, these findings validate the study's hypothesis: full digitalisation of Nigerian banks will encourage greater financial inclusion and, by extension, stimulate economic activity and growth.

DISCUSSION

The results of this study yield several important insights for understanding digital banking dynamics in Nigeria. The finding that IOB significantly predicts OOB corroborates prior research emphasising the role of service quality and technological infrastructure in shaping consumer adoption decisions (Cuesta et al., 2015; Smith, 2018; Muluka, 2015). The near-universal preference for mobile banking over traditional banking within this sample reflects broader global trends, particularly among younger, digitally literate populations (Krishana et al., 2016; Nowa et al., 2014). This is significant in the Nigerian context, as it suggests that a latent demand for digital financial services exists among the urban youth population, awaiting adequate supply-side conditions for full expression. The negative influence of ROB on digital banking adoption highlights the persistent barriers of fear of fraud, technical unreliability, and low user confidence. These findings are consistent with Ozili's (2020) observation that the security infrastructure of Nigerian banks has not kept pace with customer demand for digital services. Given the documented history of cybercrime targeting Nigerian financial institutions and their customers, the reluctance of some users is rational and evidence-based rather than merely attitudinal. Banks and regulators must therefore address these concerns substantively, through both technical improvement and transparent communication, rather than treating them as marketing challenges.

The demographic composition of the sample as comprising students and mobile technology traders, both groups with above-average digital familiarity implies that the levels of adoption observed in this study may represent an upper bound for the broader Nigerian population. Extrapolating to groups with lower digital literacy, more limited device access, or greater geographic remoteness would likely yield lower adoption rates and higher reluctance. This underscores the importance of context-specific strategies for digital financial inclusion in Nigeria.

The implications for economic development are equally significant. As Manyika et al. (2016) and Effiom and Edet (2020) demonstrate, digital financial services can catalyse economic activity by reducing transaction costs, expanding credit access, and enabling previously excluded populations to participate in the formal economy. The present findings suggest that investment in IOB, encompassing infrastructure quality, payment system reliability, and security enhancement represents a high-leverage intervention for accelerating this developmental process in Nigeria.

CONCLUSION

This study has examined the drivers of and barriers to digital banking adoption among youth and business owners in Lagos, Nigeria, and assessed the implications of this adoption for financial inclusion and economic development. The findings confirm that improvements in online banking infrastructure represent a significant positive predictor of digital banking adoption, whilst reluctance, grounded in fear of fraud, technical barriers, and low operational confidence constitutes a significant negative influence. These results provide empirical support for the hypothesis that full digitalisation of Nigerian banks would encourage greater financial inclusion and contribute to national economic development.

The study contributes to the scholarly literature in several respects. It provides contextually grounded empirical evidence on digital banking adoption in Nigeria, a context underrepresented in the extant literature. It demonstrates the applicability of the Technology Acceptance Model and Diffusion of Innovations theory to the Nigerian digital banking environment. And it identifies specific, actionable levers principally, service quality enhancement and security strengthening through which adoption barriers can be reduced.

From a policy and practice perspective, the study signals the urgency of coordinated action by Nigerian banks, financial regulators, and government agencies to address the structural impediments to digital banking adoption. The digital transition in Nigeria's financial sector is not merely a technological challenge but a developmental imperative, with direct implications for economic participation, poverty reduction, and national competitiveness.

RECOMMENDATIONS

Based on the empirical findings, the following recommendations are advanced for the study:

- 1) Nigerian banks should strengthen digital banking infrastructure, improve platform reliability, enhance cybersecurity communication, and institutionalise customer education programmes to increase adoption and reduce user reluctance.
- 2) Financial regulators and the Central Bank of Nigeria should enforce robust cybersecurity standards, expand digital identity verification systems, and incentivise banks to improve service quality and financial inclusion outcomes.
- 3) Government and policy agencies should expand broadband and mobile connectivity, invest in nationwide digital literacy initiatives, and promote multi-stakeholder partnerships to accelerate digital inclusion and financial access.

- 4) Digital literacy programmes should prioritise practical financial technology competencies and target underserved populations, particularly women, older adults, and rural communities, to reduce digital exclusion.

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