DOI: https://doi.org/10.68022/kajofi.2026.pznrysa2

KASU JOURNAL OF FINANCE VOL 1(1) 2026 ISSN: 3141-2017

IMPACT OF FINANCIAL INCLUSION ON WEALTH CREATION IN NIGERIA

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Abstract

This study examines the relationship between financial inclusion and wealth creation in Nigeria, using bank account ownership, mobile money usage, and financial knowledge as indicators of financial inclusion and real gross domestic product (GDP) as a macroeconomic proxy for wealth creation. It uses reported quarterly time-series data from 2012Q1 to 2024Q4 and an autoregressive distributed lag (ARDL) approach. The reported long-run coefficients are positive and statistically significant for all three indicators. In the short run, bank account ownership and financial knowledge are significant at the 5% level; mobile money usage is positive but significant only at the 10% level ($p = 0.051$). The negative error correction coefficient indicates that approximately 62.15% of deviations from the estimated long-run relationship are corrected within one quarter. These findings suggest an association between financial inclusion and aggregate economic activity, but do not establish causal effects or directly measure household wealth. Policies that expand banking access, improve digital financial services, and strengthen financial literacy may support inclusive economic development.

Keywords: financial inclusion; wealth creation; bank account ownership; mobile money usage; financial knowledge; Nigeria

1 Introduction

Wealth creation in Nigeria is closely connected to access to productive assets, opportunities for investment, and financial services. Wealth creation refers to the accumulation and maintenance of income-generating assets and financial resources over time. At the household level, it includes saving, investing, and managing financial risks; at the business level, it includes expanding productive capacity and reinvesting profits (Burton, 2018; Kalunga, 2022). This paper examines the macroeconomic dimension of these processes using real gross domestic product (GDP) as a proxy. Real GDP measures economic production rather than net wealth, so the findings concern aggregate economic activity associated with wealth creation.

Financial inclusion involves access to affordable and relevant savings, credit, payment, insurance, and other financial services (Ozili, 2021). Such access can support investment and risk management, but its benefits depend on the services available, how they are used, and users' capacity to make financial decisions. This study distinguishes three dimensions: bank account ownership, mobile money usage, and financial knowledge.
Bank account ownership provides an entry point into the formal financial system. Accounts can facilitate secure saving, receipt of payments, access to credit, and records of financial transactions. Mobile money usage concerns financial transactions conducted through mobile devices and can reduce the time and cost of making payments, especially where physical banking infrastructure is limited. Financial knowledge covers understanding of budgeting, saving, borrowing, investment, and risk management. It can help users evaluate financial products and make effective use of banking and digital payment services (Burton, 2018; Ozili, 2021). These dimensions represent access, use, and the knowledge needed to use services effectively; they need not have identical relationships with economic activity.

Nigerian studies connect financial inclusion with economic welfare, savings, poverty reduction, and economic growth (Aribaba et al., 2020; Ogbonna et al., 2024). Research on financial technology also examines its relationship with financial inclusion (Osigwe et al., 2025). These related outcomes provide motivation for examining banking access, digital financial service usage, and financial knowledge together. The present study remains at the national level and does not claim to explain household wealth differences or rural–urban disparities. The study aims to examine the relationship between financial inclusion and wealth creation in Nigeria over 2012Q1–2024Q4. Its specific objectives are to estimate the separate long-run relationships of bank account ownership, mobile money usage, and financial knowledge with real GDP; examine their short-run relationships; and assess the speed of adjustment to the estimated long-run equilibrium.

The empirical strategy uses quarterly secondary time-series data and an autoregressive distributed lag (ARDL) framework. Unit root testing establishes the integration properties of the variables, bounds testing assesses a possible level relationship, and an error correction representation describes short-run dynamics and adjustment. The contribution is a joint assessment of the three financial inclusion indicators within one Nigerian time-series framework, distinguishing short-run associations from long-run associations and explicitly recognising the limits of real GDP as a wealth-creation proxy.

The remainder of the paper is organised as follows. Section 2 synthesises the empirical literature and identifies the research gap. Section 3 presents the conceptual and theoretical framework, data and variable descriptions, and estimation approach. Section 4 discusses the results, and Section 5 concludes with policy recommendations.

2 Empirical Literature Review

2.1 Evidence from Developed and Emerging Economies

Evidence from developed economies links financial access to asset accumulation, while illustrating the importance of research design. Célerier and Matray (2019) exploit US interstate branching deregulation between 1994 and 2005 to examine changes in bank access and household wealth. They find that expanded branch supply increases financial inclusion among low-income households and supports asset accumulation and financial security. Stein and Yannelis (2020) use historical Freedman's Savings Bank data and an instrumental variables strategy based on the staggered opening of branches to examine human capital, labour market, and wealth outcomes. These designs address the possibility that wealthier households are more likely to obtain financial services. Their institutional and historical settings nevertheless differ from contemporary Nigeria, limiting direct transfer of the estimated relationships.

In an emerging-economy setting, Li and Liu (2023) use the 2015–2019 China Household Finance Survey, fixed-effects models, and panel Tobit models to examine digital financial inclusion and income composition. Their results associate digital financial inclusion with higher income. This household-level evidence adds detail about income channels, but income is not identical to accumulated wealth, and the Chinese digital financial environment differs from Nigeria's. Taken together with the US studies, it suggests that physical banking access and digital services can matter through different channels; a single inclusion measure may conceal those differences.

Cross-country studies shift attention from household assets to aggregate growth. Karim et al. (2022) use dynamic panel threshold estimation for 60 countries over 2010–2017 and find that the relationship between financial inclusiveness and growth is not uniformly stronger at higher inclusion levels. Azimi (2022) also examines the financial inclusion–growth relationship globally. These studies provide evidence across institutional settings, but pooled relationships do not directly establish country-specific dynamics or the separate contribution of financial knowledge alongside banking access and mobile money usage. Threshold evidence further cautions against assuming that one linear relationship applies across all settings.

Duvendack and Mader (2020) provide a counterweight to uniformly positive interpretations. Their review of reviews finds that inclusion interventions are more often beneficial than harmful, yet effects on central economic and social poverty indicators are small and inconsistent. They also identify weaknesses in the underlying evidence. The synthesis therefore supports separating financial access from realised economic outcomes and assessing the quality of identification, measurement, and context. Positive associations in individual studies should not be treated as proof that all inclusion policies generate large or causal wealth gains.

2.2 Evidence from Nigeria

Nigerian research addresses related economic outcomes through different empirical questions. Ogbonna et al. (2024) analyse secondary time-series data for 1980–2022 using a vector error correction model, unit root tests, and cointegration analysis. They report positive relationships between financial inclusion and economic growth, poverty reduction, and savings. Their inclusion measures cover rural deposits and loans, account ownership, and electronic banking or payment services. This is relevant national evidence, but the reported variable set differs from the present paper's combination of bank account ownership, mobile money usage, and a financial knowledge index. It also examines a different observation period and specification.

Osigwe et al. (2025) focus on financial technology and financial inclusion in Nigeria over 2009–2023. This research is relevant to the expansion of digital financial services, but its central outcome is financial inclusion rather than the real-GDP proxy used here. The distinction matters: an improvement in access to financial services is an intermediate outcome and does not itself demonstrate a corresponding increase in wealth. Read alongside Ogbonna et al. (2024), these studies indicate that the inclusion–activity relationship and the technology–inclusion relationship need to be examined separately before drawing conclusions about economic outcomes.

The Nigerian evidence and the international studies are therefore complementary rather than directly interchangeable. National time-series models describe aggregate adjustment, whereas household studies examine individual income or assets, and studies of financial technology may explain changes in inclusion itself. These differences in outcome measures, units of analysis, periods, and identification strategies help explain why findings

cannot be compared solely by the signs or statistical significance of coefficients. They also support a cautious interpretation of the present ARDL estimates as conditional aggregate associations.

2.3 Research Gap and Contribution

The reviewed studies do not directly resolve the present paper's question: how bank account ownership, mobile money usage, and financial knowledge jointly relate to Nigerian real GDP in the short and long run over 2012Q1–2024Q4. The gap addressed here is specific to this combination of indicators, outcome proxy, period, and dynamic specification. The study applies an ARDL framework to distinguish the three conditional relationships and the rate of adjustment to a possible long-run equilibrium. It does not claim to fill a household-level or rural–urban evidence gap, establish causal effects, or provide a direct measure of net wealth.

3 Methodology

3.1 Conceptual and Theoretical Framework

The conceptual framework links bank account ownership, mobile money usage, and financial knowledge to wealth creation. Banking access can support saving and credit, mobile money usage can reduce payment frictions, and financial knowledge can improve financial decisions. Figure 3.1 presents these proposed relationships. In the empirical analysis, wealth creation is operationalised using real GDP, so the diagram expresses the conceptual relationship rather than a direct measure of household wealth.

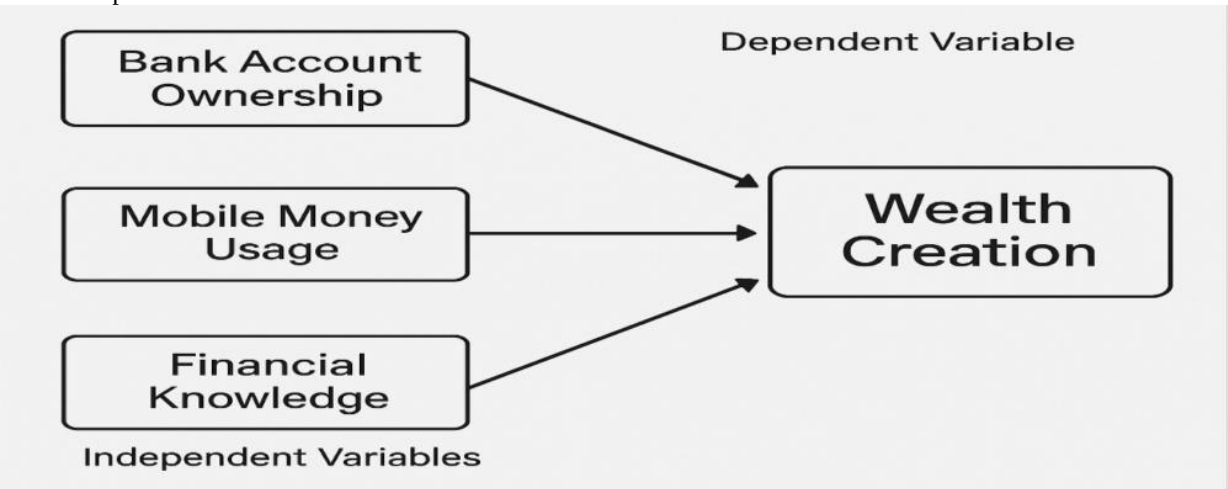


Figure 3.1 Conceptual framework
Source: Author's conceptualisation

This study draws on the access-to-finance perspective discussed by Beck and Demirgüç-Kunt (2008). This perspective links access to financial services with economic participation, saving, and productive investment. It provides a rationale for examining financial inclusion in relation to wealth creation.
In the context of Nigeria, the access-to-finance perspective explains how bank account ownership, mobile money usage, and financial knowledge facilitate wealth creation. Bank accounts provide a secure mechanism for savings and access to credit, while mobile money services enable convenient transactions and liquidity, especially for underserved populations (Osigwe et al., 2025). Financial knowledge enhances the effective use of these financial tools, ensuring that access translates into productive investments and sustainable wealth accumulation.

Empirical evidence supports this perspective. Studies show that increased access to financial services in Nigeria and other developing countries is associated with higher savings, entrepreneurial investment, and improved household welfare (Ogbonna et al., 2024; Kalunga, 2022). By providing both the means and the opportunity to participate in the financial system, the access-to-finance perspective provides a robust framework for understanding the relationship between financial inclusion and wealth creation.

3.2 Research Design Data Sources and Variable Descriptions

This study employs an ex-post facto research design, which is appropriate for investigating the impact of financial inclusion on wealth creation in Nigeria. The study uses secondary quarterly time-series data covering 2012Q1–2024Q4, corresponding to 52 observations before lag-related adjustments. The manuscript identifies the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), Nigerian Communications Commission (NCC), and World Bank as institutional data providers. Table 3.1 sets out the reported variables and their measurement. Real

GDP is treated as a proxy for aggregate economic activity associated with wealth creation; it is a flow measure and does not directly measure household net wealth.

Table 3.1 Variable measurement

Variable	Role	Reported measurement	Expected sign
WC	Dependent	Quarterly real GDP, 2012Q1–2024Q4	—
BAO	Independent	Percentage of adults with a formal bank account	Positive
MMU	Independent	Mobile money transaction volume/value or percentage of users	Positive
FKI	Independent	Index of financial literacy covering savings, budgeting and credit awareness	Positive

Source: Author's compilation (2025)

3.3 Technique of Data Analysis and Model Specification

The ARDL specification below estimates the conditional relationships of the financial inclusion indicators with real GDP. The selected lag orders and deterministic terms govern the estimated dynamics. WC denotes the real-GDP proxy; BAO denotes bank account ownership; MMU denotes mobile money usage; and FKI denotes the financial knowledge index. The full coefficient and lag notation is defined after the model.

The ARDL approach accommodates variables integrated of order zero, I(0), or order one, I(1), provided that none is I(2) (Pesaran et al., 2001). The general level specification is:

$$WC_t = \alpha_0 + \Sigma(i = 1,\ldots,p)\ \varphi_i WC_{t-i} + \Sigma(j = 0,\ldots,q_1)\ \beta_j BAO_{t-j} + \Sigma(j = 0,\ldots,q_2)\ \gamma_j MMU_{t-j} + \Sigma(j = 0,\ldots,q_3)\ \delta_j FKI_{t-j} + \varepsilon_t$$

Here, WC is real GDP, used as the wealth-creation proxy; BAO is bank account ownership; MMU is mobile money
usage; FKI is the financial knowledge index; α_0 is the intercept; ε_t is the error term; and p, q_1, q_2 and q_3 are the selected lag orders. The coefficients φ, β, γ and δ describe the lagged relationships. The expected long-run signs of the three financial inclusion coefficients are positive.

The corresponding unrestricted error correction representation is:

$$\Delta WC_t = c_0 + \lambda WC_{t-1} + \theta_1 BAO_{t-1} + \theta_2 MMU_{t-1} + \theta_3 FKI_{t-1} + \Sigma(i = 1,\ldots,p-1)\ a_i \Delta WC_{t-i} + \Sigma(j = 0,\ldots,q_1-1)\ b_j \Delta BAO_{t-j} + \Sigma(j = 0,\ldots,q_2-1)\ c_j \Delta MMU_{t-j} + \Sigma(j = 0,\ldots,q_3-1)\ d_j \Delta FKI_{t-j} + u_t$$

Δ denotes first differencing. The bounds test examines H_0: $\lambda = \theta_1 = \theta_2 = \theta_3 = 0$. Conditional on a valid long-run relationship, the long-run coefficients are $-\theta_1/\lambda$, $-\theta_2/\lambda$ and $-\theta_3/\lambda$. The error correction term is the lagged deviation from this estimated long-run relationship; its coefficient measures the rate of adjustment.

The analysis comprises ADF unit root tests, an ARDL bounds test, and estimation of the long-run and error correction coefficients. Tables 4.1–4.5 present the reported results.

4 Results and Discussion

4.1 Descriptive Statistics

Table 4.1 Descriptive statistics

Statistic	WC	BAO	MMU	FKI
Mean	39391.25	49.68530	25.78434	55.03716
Median	39294.77	50.62607	24.00167	55.75733
Maximum	76866.53	69.47548	49.35427	79.40323
Minimum	1549.671	30.22088	5.312846	20.92740
Standard deviation	22270.06	11.99276	13.14114	17.44006
Skewness	−0.002850	−0.118484	0.233513	−0.258002
Kurtosis	1.808025	1.640874	1.899891	1.846250
Jarque–Bera	3.078482	4.123985	3.094766	3.461030

Statistic	WC	BAO	MMU	FKI
p-value	0.214544	0.127200	0.212804	0.177193
Sum	2048345	2583.636	1340.785	2861.933
Sum of squared deviations	2.53E+10	7335.136	8807.162	15511.93
Observations	52	52	52	52

Source: Author's computation (2025)

The means and medians are relatively close and the reported skewness values are near zero, suggesting approximate symmetry. Kurtosis is below three for all variables. The reported Jarque–Bera p-values exceed 0.05, so these tests do not reject normality at the 5% level; this does not prove that the series are normally distributed. WC varies substantially over the observation period. Because WC is aggregate real GDP, this variation cannot be interpreted as differences in wealth across households, and raw standard deviations across differently scaled variables are not directly comparable.

4.2 Unit Root Tests

Table 4.2 Summary of ADF unit root test results

Variable	Level statistic	Level p-value	First-difference statistic	First-difference p-value	Order
WC	−1.002336	0.7458	−6.894397	<0.0001	I(1)
BAO	−6.343327	<0.0001	—	—	I(0)
MMU	−7.236081	<0.0001	—	—	I(0)
FKI	−6.950447	<0.0001	—	—	I(0)

Source: Author's computation (2025).
Note: Values reported as 0.0000 in the source output are displayed as <0.0001. A dash indicates that a first-difference result was not reported.

The reported ADF results indicate that WC is non-stationary at level but stationary after first differencing, whereas BAO, MMU and FKI are stationary at level. This mixture of I(0) and I(1) variables is compatible with ARDL estimation, subject to an appropriate deterministic specification and confirmation that no variable is I(2).

4.3 Bounds Test

Table 4.3 Reported ARDL bounds test

Significance level	Lower bound I(0)	Upper bound I(1)
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Reported F-statistic: 7.064759. Reported k: 5
Source: Author's computation (2025)

The reported F-statistic exceeds all the displayed upper-bound critical values. Under the reported test specification, this supports rejection of the null hypothesis of no level relationship. The inference remains conditional on matching the critical values to the estimated model's number of level regressors and deterministic specification.

4.4 Long Run Estimates

Table 4.4 Long-run ARDL estimates

Variable	Coefficient	Standard error	t-statistic	p-value
BAO	0.4521	0.1234	3.66	0.001
MMU	0.3185	0.1012	3.15	0.003
FKI	0.4012	0.1105	3.63	0.001
Constant	15432.76	4321.54	3.57	0.001

Source: Author's computation (2025).

All three reported long-run financial inclusion coefficients are positive and statistically significant at the 5% level. Their interpretation depends on the variables' measurement scales and transformations. In the stated level model, each coefficient represents the change in WC units associated with a one-unit increase in the corresponding explanatory variable, holding the other variables constant. These coefficients cannot be interpreted as percentage elasticities without a documented logarithmic specification, and their numerical sizes alone do not establish which variable has the greatest economic influence.

The positive associations are consistent with an access-to-finance perspective: banking access can support saving and credit, digital services can reduce transaction frictions, and financial knowledge can improve the use of available services (Beck & Demirgüç-Kunt, 2008). They are also broadly consistent with the financial inclusion literature reviewed above. Aggregate time-series relationships do not by themselves establish causality or household-level mechanisms.

4.5 Short Run Estimates

Table 4.5 Short-run ARDL error correction estimates

Variable	Coefficient	Standard error	t-statistic	p-value
ΔBAO	0.1867	0.0823	2.27	0.029
ΔMMU	0.1425	0.0711	2.00	0.051
ΔFKI	0.1724	0.0784	2.20	0.032
ECM_{t-1}	−0.6215	0.1023	−6.08	<0.001

Source: Author's computation (2025).
Note: Δ denotes first differencing. The ECM p-value, originally reported as 0.000, is displayed as <0.001.

The reported short-run coefficients are positive. Bank account ownership and financial knowledge are statistically significant at the 5% level. Mobile money usage has p = 0.051, so it is significant at the 10% level but not at the 5% level. Evidence for its short-run association is therefore weaker than for the other two indicators. The error correction coefficient is −0.6215 and statistically significant. Conditional on a correctly specified cointegrating model, approximately 62.15% of the preceding quarter's disequilibrium is corrected within one quarter. This supports convergence toward the estimated long-run relationship. It does not independently establish a causal effect of financial inclusion.

5. Conclusion and Recommendations

This study examines financial inclusion and wealth creation in Nigeria using reported quarterly data for 2012Q1–2024Q4 and an ARDL approach. Real GDP is the macroeconomic proxy for wealth creation. The reported long-run estimates show positive, statistically significant associations for bank account ownership, mobile money usage, and financial knowledge. Short-run associations are positive, but mobile money usage is significant only at the 10% level. The negative error correction coefficient suggests adjustment toward the estimated long-run relationship, conditional on the validity of the bounds-test specification.

The findings support further attention to banking access, digital financial services, and financial literacy. Their scope is aggregate economic activity; they do not directly demonstrate changes in household assets, causal effects, or differences across population groups. Future research could use household-level wealth data and designs that address endogeneity to examine these issues. The reported associations support policy attention to banking access, digital financial services, and financial education. Financial institutions and policymakers should implement inclusive banking strategies, such as simplified account opening procedures, low-cost accounts, and targeted outreach programs to encourage broader access to formal banking services.

Regulatory authorities and fintech companies should enhance mobile money infrastructure, reduce transaction costs, and improve awareness campaigns to encourage adoption, particularly in rural and underserved areas. Government agencies, financial institutions, and educational bodies should invest in financial education covering savings, budgeting, credit management, and digital financial services to help individuals use financial products effectively.

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