



Dynamics Of Financial Inclusion And Economic Growth In Nigeria: Insights From Liquidity, Credit Allocation And Lending Rate

Gideon Olugbenga Torila ¹, Olukayode Abiodun Bilewu ², Olusola Enitan Olowofela ³
¹Department of Management, College of Business, Northern Illinois University, Dekalb, Illinois, United State of America

² Internal Audit Department, First Bank Limited, Nigeria

³Department of Banking and Finance, Olabisi Onabanjo University, Ago Iwoye, Ogun State, Nigeria

Email: ¹⁾ gideon@gmail.com

How to Cite :

Torila, G, O., Bilewu, O, A., Olowofela, O, E. (2026). Dynamics of Financial Inclusion and Economic Growth in Nigeria: Insights from Liquidity, Credit Allocation and Lending Rate. EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis, 14(3). DOI: <https://doi.org/10.37676/ekombis.v14i3>

ARTICLE HISTORY

Received [23 February 2026]

Revised [05 July 2026]

Accepted [11 July 2026]

KEYWORDS

Financial Inclusion; Gross Domestic Product (GDP); Loan-to-Deposit Ratio (LDR).

This is an open access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license



ABSTRACT

Financial inclusion is recognized as a key driver of economic growth, particularly in developing economies like Nigeria. This study investigates the impact of financial inclusion on Nigeria's economic growth by examining indicators such as Gross Domestic Product (GDP), Loan-to-Deposit Ratio (LDR), Money Supply (MS), Credit to the Private Sector (CRED) and Lending Rate (LR). The study employs econometric techniques, including co-integration tests and dynamic least squares regression, to evaluate long-term relationships between financial inclusion and economic growth utilizing secondary data from 1991 to 2024. The findings suggest that while money supply positively influences economic growth, credit allocation inefficiencies, high lending rates and financial exclusion hinder Nigeria's economic expansion. The results highlight the need for policy interventions to enhance financial access, improve credit allocation and promote financial literacy. Strengthening financial inclusion strategies can lead to sustainable economic development, poverty reduction and enhanced financial stability. This study provides valuable insights for policymakers, financial institutions and development agencies in Nigeria.

INTRODUCTION

Financial inclusion is now recognized on a worldwide scale as a powerful tool for promoting development. It stands for the procedure that guarantees that formal financial services are easily accessible, readily available and reasonably priced for all participants in an economy (Zulfiqar, Chaudhary and Aslam, 2016; Tok and Heng, 2022). Separating between deliberate and involuntary exclusion is crucial, though deliberate exclusion, according to the Central Bank of Nigeria (CBN), is when a group of people or businesses decides not to use

financial services because they do not need them or for cultural or religious reasons (CBN, 2018). In contrast, involuntary exclusion results from low income, a high risk profile, or from discrimination, as well as from flaws in the market (CBN, 2018).

Financial inclusion has emerged as a critical driver of economic development, particularly in developing countries like Nigeria, where access to formal financial services remains limited for a significant portion of the population (UNCTAD, 2020). Financial inclusion refers to the availability, accessibility, and affordability of financial services such as savings, credit, insurance, and payment systems for all segments of society, particularly the underserved and marginalized groups. By ensuring that individuals and businesses have access to essential financial services, financial inclusion plays a vital role in fostering economic stability, reducing poverty and promoting inclusive growth (Uruakpa, Kalu and Ufomadu, 2019; Olusegun, Evbuomwan and Belonwu, 2021). Since 1970s, Nigeria has implemented different policies to ameliorate poverty and enhance financial inclusion such initiatives include rural banking, People's Bank, Community Banks and microfinance banks.

Interestingly, Nigeria, as Africa's largest economy and most populous nation, faces significant challenges related to financial exclusion, with a substantial percentage of its population lacking access to formal financial services. These challenges include inadequate banking infrastructure, low financial literacy, poverty, and socio-economic inequalities. Despite various policy initiatives and reforms aimed at promoting financial inclusion, such as the National Financial Inclusion Strategy (NFIS) launched in 2012, gaps persist in the penetration of financial services across urban, semi urban and rural areas. Despite these efforts, 28.8 million adults, or 26%, remain financially excluded (EFInA, 2023) and poverty has risen to 38.9% in 2023, placing Nigeria 75th among 103 developing nations (World Bank, 2023). Nigeria's HDI has declined to 163rd among 177 countries, from 151st in 2002, highlighting poor performance in health, living standards and education (World Bank, 2022). Economic growth, often measured by the increase in a nation's productive capacity and overall output, is crucial for sustainable development and poverty alleviation. Key indicators of economic growth include GDP, Loan-to-Deposit Ratio, Lending Rate, Money Supply (MS), and Credit to the Private Sector (CRED). The relationship between financial inclusion and these indicators has been widely debated in academic literature, with evidence suggesting that inclusive financial systems can stimulate investment, enhance productivity and empower small and medium-sized enterprises (SMEs) that serves as the vital engines for economic progress (Enueshike and Okpebru, 2020; Ifediora, Offor, Eze, Takon, Ageme, Ibe and Onwumere, 2022; Maune, Matanda and Mundonde, 2020). Interestingly, to improve the study of the impact of financial inclusion on economic growth, this study shall addressing key issues like limited long-term data, inconsistent measurement, and the narrow focus on formal banking services and likewise focus on key economic growth indicators such as GDP, Loan-to-Deposit Ratio, Lending Rate, Money Supply (MS) and Credit to the Private Sector (CRED) that would allow for a more targeted analysis of how financial inclusion influences various aspects of economic growth. This study tends to investigate the impact of financial inclusion on economic growth in Nigeria, exploring the extent to which improved access to financial services contributes to macroeconomic in other to provide valuable insights for policymakers, financial institutions and other international and local development agencies seeking to promote inclusive growth in Nigeria.

LITERATURE REVIEW

Several studies have examined the impact of financial inclusion on economic growth, highlighting its significance in fostering economic development, particularly in developing countries like Nigeria. Enueshike and Okpebru (2020) employed a time series analysis from 1990 to 2018 using the Autoregressive Distributed Lag (ARDL) model and found a positive relationship between financial inclusion and economic growth, especially through credit facilities, although

mobile banking and financial literacy had a lesser impact. Ifediora et al. (2022) used panel data from 1991 to 2020 and applied the Generalized Method of Moments (GMM), concluding that financial inclusion positively influences economic growth by enhancing access to financial resources for SMEs, with technological adoption and regulatory environments playing crucial roles. Maune, Matanda, and Mundonde (2020) conducted a cross-country analysis of 10 African nations, including Nigeria, from 2000 to 2017, using Fixed Effects and Random Effects models, and found that financial inclusion, particularly through mobile money adoption, significantly contributed to economic growth. Asongu and Nwachukwu (2016) examined data from 52 African countries between 2004 and 2012 using System Generalized Method of Moments (SGMM) and showed that financial inclusion aids both economic growth and poverty reduction, particularly in countries with strong regulatory frameworks. Demirgüç-Kunt, Klapper, and Singer (2017) analyzed data from 139 countries and found that greater financial inclusion, particularly through access to savings and payment accounts, supports economic development by fostering entrepreneurship and productivity.

Enueshike and Okpebru (2020) conducted a study that explored the role of financial inclusion in Nigeria's economic growth from 1990 to 2018. Using a time series approach with the Autoregressive Distributed Lag (ARDL) model, the authors found a significant positive relationship between financial inclusion and economic growth, particularly through access to credit. However, they noted that mobile banking and financial literacy, while important, had less influence on economic growth compared to traditional financial services such as credit facilities. Owolabi, Falola, and Adeyemi (2021) examined the nexus between financial inclusion and economic growth in Nigeria, particularly focusing on the use of mobile money platforms. The authors used a combination of descriptive analysis and regression techniques to explore data from 2000 to 2020. The study found that the rapid expansion of mobile money services in Nigeria has positively impacted economic growth by improving financial access in rural and underserved areas, enhancing savings, and enabling financial transactions.

Akinmoladun and Adebayo (2021) explored the socio-economic benefits of financial inclusion in Nigeria, emphasizing its effects on poverty reduction and economic growth. Through a comprehensive analysis of financial sector data, the study concluded that increased access to credit facilities and savings accounts significantly boosts economic growth, especially in rural areas where financial exclusion is most prevalent. The authors also noted the critical role of digital financial services in reaching underserved populations. Igbinovia, Ojo, and Idowu (2019) conducted an empirical analysis on the effect of financial inclusion on Nigeria's economic growth from 1991 to 2018. Using the Vector Auto Regression (VAR) model, they concluded that financial inclusion, through both access and usage of financial services, had a positive and statistically significant effect on Nigeria's GDP growth.

METHODS

Sources of Data Collection

The research uses secondary data from sources such as journals, textbooks, the Central Bank of Nigeria (CBN) Statistical Bulletin and the World Bank Group's Global Development Indicators between 1991 to 2024 in order to examine the relationship between financial inclusion and economic growth in Nigeria.

Model Specification

The model to capture the impact of financial inclusion on economic growth in Nigeria by examining the ratio of Broad Money to GDP (M2/GDP), the ratio of Credit to Private Sector to GDP (CPS/GDP), loan-to-deposit ratio (LDR), and liquidity ratio (LQR) of commercial banks.

This is expressed functionally as

$$GDP_t = F(MSt, CRED_t, LDR_t, LQR_t) \dots\dots\dots (1)$$

The operational and log form of the model is stated thus:

$$GDP_t = b_0 + b_1 MS_t + b_2 CRED_t + b_3 LDR_t + b_4 LR_t + \mu_t \dots\dots\dots (2)$$

$$\ln GDP_t = b_0 + b_1 \ln MS_t + b_2 \ln CRED_t + b_3 \ln LDR_t + b_4 \ln LR_t + \mu_t \dots\dots\dots (3)$$

$\ln GDP_t$ = Gross Domestic Product

$\ln MS_t$ = Money Supply

$\ln CRED_t$ = Credit to private sector

$\ln LDR_t$ = Loan-to-deposit ratio

$\ln LR_t$ = Lending rate

b_0 = intercept

b_1 - b_4 = Coefficient of the independent variables

μ = white noise or error term

Note: All variables are in their natural logarithm form.

The apriori expectation:

$b_1, b_2, b_4 > 0; b_3 < 0$

Where b_0 is constant term,

b_1, b_2, b_3 and b_4 are the long run coefficients and it is the residual time t

The coefficients b_1, b_2, b_3 and b_4 measures the long run effect of a change in money supply, credit to private sector, loan-to-deposit ratio, lending rate on gross domestic product respectively. The long-run relationships among the variables are verified using the Johansen (1988) co-integration test.

RESULTS

Table 1 Descriptive statistics

	GDP	LDR	LR	MS	CRED
Mean	4.267372	1.254382	1.685812	3.004381	4.460335
Median	4.457314	1.245158	1.683515	3.103572	4.410165
Maximum	5.158997	1.474216	1.737884	4.334608	5.158158
Minimum	2.775279	1.086716	1.540167	1.376694	4.031323
Std. Dev.	0.710447	0.072047	0.038068	0.956064	0.321296
Skewness	-0.515981	0.628134	-1.588452	-0.186700	0.472262
Kurtosis	2.056481	4.991235	7.892920	1.747884	2.181681
Jarque-Bera	2.525432	7.160000	43.95978	2.205161	2.017287
Probability	0.282885	0.027876	0.000000	0.332013	0.364713
Sum	132.2885	38.88585	52.26016	93.13582	138.2704
Sum Sq. Dev.	15.14206	0.155725	0.043476	27.42178	3.096943
Observations	31	31	31	31	31

Note: GDP (Gross Domestic product), LDR (Loan-to-deposit ratio), LR (Liquidity ratio), MS (Money supply), CRED (Credit to private sector).

The summary statistics provide valuable insights into the distribution, variability, and characteristics of the variables: GDP (dependent variable), Loan-to-Deposit Ratio (LDR), Lending Rate (LR), Money Supply (MS) and Credit to the Private Sector (CRED). In terms of central tendency, the mean GDP value is 4.27, with a slightly higher median of 4.46, suggesting a moderately balanced distribution. Similarly, for LDR (mean: 1.25, median: 1.24) and CRED (mean: 4.46, median: 4.41), the close alignment between their means and medians indicates symmetry in their distributions. However, minor deviations in LR and MS suggest slight skewness. Regarding dispersion, MS exhibits the highest standard deviation (0.956), reflecting significant variability likely due to policy changes or macroeconomic fluctuations. GDP and CRED display moderate variability, while LDR and LR show relatively low variability, suggesting stability in these banking sector metrics. Skewness analysis reveals that GDP and MS are negatively skewed,

indicating longer tails on the left side of their distributions, whereas LDR and CRED are positively skewed, with longer tails on the right. LR shows substantial negative skewness (-1.588), indicating a concentration of values near the upper limit with occasional extreme lower values. In terms of kurtosis, LR exhibits high kurtosis (7.89), indicating a leptokurtic distribution with extreme outliers, while LDR also shows elevated kurtosis (4.99), suggesting a more peaked distribution compared to normal. Other variables, such as GDP, MS, and CRED, have kurtosis values closer to 3, indicating near-normal distributions. The Jarque-Bera test of normality highlights that LR ($p = 0.0000$) and LDR ($p = 0.0279$) reject the null hypothesis of normality, confirming their non-normal distributions, while GDP, MS, and CRED have higher p-values, suggesting distributions closer to normal. The range of values provides further insights, with GDP fluctuating between 2.78 and 5.16, indicating periods of both low and high growth. MS displays a wide range (1.38–4.33), reflecting variations in financial liquidity, whereas LDR and LR exhibit tighter ranges, signifying stability in these banking sector metrics.

The sum of the values for each variable reflects cumulative performance over the 31 observations, offering a broader understanding of aggregate trends during the study period. Overall, these descriptive statistics highlight important patterns and deviations in the data, providing a foundation for further analysis. Moderate variability in GDP suggests its sensitivity to macroeconomic factors, including financial inclusion metrics such as MS and CRED. Limited variability in LDR and LR implies banking sector stability but may also indicate constrained opportunities for substantial deviation or reform. Non-normality in LR and LDR distributions suggests the need for robust statistical techniques, such as transformation or non-parametric methods, to ensure valid inferences. The high variability in MS and the impact of outliers in LR and LDR underscore the need for targeted policies to stabilize financial variables and enhance the efficiency of financial inclusion measures in driving economic growth. These observations are critical for shaping informed analysis and policy recommendations.

Table 2 Unit Root Test

Variables	Level	Prob.	Critical Value	First Level	Prob.	Critical Value	Stationary
Variables							
GDP	-2.9677	0.0047	-0.9573	-----	-----	-----	I(0)
LDR	-4.3743	0.0308	-3.8439	-----	-----	-----	I(0)
LR	-3.5950	0.0097	0.9843	-----	-----	-----	I(0)
MS	-3.5950	0.9992	0.6484	-3.5950	0.0024	-4.9889	I(1)
CRED	-3.5875	0.6071	-1.9383	-3.5875	0.0030	-4.8605	I(1)

From table 2 the results of the stationarity tests for each variable indicate the following findings. For GDP, the test statistic at the level is -2.9677, with a p-value of 0.0047, which is less than the critical value of -0.9573. This suggests that GDP is stationary at the level, meaning it does not require differencing to achieve stationarity (I(0)). Similarly, for LDR (Loan-to-Deposit Ratio), the test statistic is -4.3743, with a p-value of 0.0308, which is less than the critical value of -3.8439. Therefore, LDR is also stationary at the level and integrated of order 0 (I(0)).

Regression Analysis**Johansen Co-integration****Table 3 Unrestricted Cointegration Rank Test (Trace)**

Hypothesize d No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.751191	101.1901	69.81889	0.0000
At most 1 *	0.654993	60.84911	47.85613	0.0019
At most 2 *	0.383121	29.98756	29.79707	0.0475
At most 3 *	0.350126	15.97819	15.49471	0.0423
At most 4	0.113075	3.479839	3.841466	0.0621

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 4 Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesize d No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.751191	40.34103	33.87687	0.0074
At most 1 *	0.654993	30.86155	27.58434	0.0183
At most 2	0.383121	14.00937	21.13162	0.3643
At most 3	0.350126	12.49835	14.26460	0.0933
At most 4	0.113075	3.479839	3.841466	0.0621

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The results from the Unrestricted Cointegration Rank Test (Trace) and Maximum Eigenvalue test reveal key insights into the long-run relationships among the variables in the model. In the Trace test, the null hypothesis of no cointegration (None) is rejected with a Trace statistic of 101.1901, which exceeds the critical value of 69.81889, and a p-value of 0.0000, indicating that there is at least one cointegrating relationship. For the hypothesis of "At most 1" cointegration, the Trace statistic of 60.84911 surpasses the critical value of 47.85613, with a p-value of 0.0019, confirming the existence of at least two cointegrating equations. The "At most 2" hypothesis also rejects the null of no cointegration, as the Trace statistic of 29.98756 is greater than the critical value of 29.79707, and the p-value is 0.0475, indicating three co-integrating equations. Similarly, for the hypothesis of "At most 3," the Trace statistic of 15.97819 is greater than the critical value of 15.49471, with a p-value of 0.0423, suggesting the presence of four co-integrating equations. However, for the hypothesis of "At most 4," the Trace statistic of 3.479839 is slightly above the critical value of 3.841466, but with a p-value of 0.0621, which is greater than the 0.05 significance level, indicating no significant co-integration at this level. In the Maximum Eigenvalue test, the results show similar trends. The "None" hypothesis is rejected with a Max-Eigen statistic of 40.34103, greater than the critical value of 33.87687, and a p-value of 0.0074, confirming one co-integrating equation. For "At most 1," the Max-Eigen statistic of 30.86155 exceeds the critical value of 27.58434, with a p-value of 0.0183, indicating two co-integrating

equations. However, for the "At most 2" hypothesis, the Max-Eigen statistic of 14.00937 is less than the critical value of 21.13162, and the p-value of 0.3643 fails to reject the null, implying that no further co-integrating relationships exist beyond two. Similarly, for "At most 3" and "At most 4," the statistics are not significant at the 0.05 level, suggesting no additional co-integration beyond two equations. Therefore, the results indicate that there are two co-integrating relationships in the system, as confirmed by both the Trace and Maximum Eigenvalue tests. This implies that the variables in the system share a long-run equilibrium relationship and their movements are interconnected in the long term.

Table 5 Error- Correction Model

Variable	Coefficient	Std. Error	t-statistic	Prob
C(1)	-0.320844	0.157365	-2.038859	0.0583
C(2)	0.425055	0.203083	2.093009	0.0526
C(3)	0.007926	0.050060	0.158333	0.8762
C(4)	0.071183	0.133264	0.534153	0.6006
C(5)	2.635949	0.680831	3.871664	0.0014
C(6)	-0.207136	0.176887	-1.171010	0.2587
C(7)	0.282409	0.214678	1.315501	0.2069
C(8)	-0.088439	0.048468	-1.824701	0.0868
C(9)	-0.040113	0.093707	-0.428067	0.6743
C(10)	9.041697	11.77282	0.768014	0.4537
C(11)	-0.084153	0.185631	-0.453338	0.6564
ECM(-1)	-0.023801	0.048558	0.490151	0.0307
R-squared	0.915663		Mean dependent	0.060684
Adj R-squared	0.857681		S.D dependent	0.085823
F-statistic	15.79228		Durbin-Watson	2.193822
Prob(F-statistic)	0.000001			

Author's Compilation (2024)

The results presented show the regression coefficients, standard errors, t-statistics, and associated p-values for the variables included in the model, along with the model fit indicators. Starting with the individual coefficients, the first coefficient (C(1)) is negative, with a coefficient of -0.320844 and a p-value of 0.0583. This suggests that the variable corresponding to C(1) has a marginally significant negative impact on the dependent variable, with a near-significant p-value slightly above the 0.05 threshold. The second coefficient (C(2)) is positive and statistically significant at the 0.05 level, with a coefficient of 0.425055 and a p-value of 0.0526, indicating a positive relationship with the dependent variable. The third coefficient (C(3)) has a coefficient of 0.007926 and a p-value of 0.8762, which indicates no significant impact on the dependent variable. Similarly, the fourth coefficient (C(4)) has a coefficient of 0.071183 and a p-value of 0.6006, showing no significant effect. The fifth coefficient (C(5)) is highly significant with a coefficient of 2.635949 and a p-value of 0.0014, indicating a strong positive relationship with the dependent variable. In contrast, the sixth coefficient (C(6)) has a negative value of -0.207136 with a p-value of 0.2587, which suggests no significant effect on the dependent variable. The seventh coefficient (C(7)) is positive but not significant at the 0.05 level, with a coefficient of 0.282409 and a p-value of 0.2069. The eighth coefficient (C(8)) is negative, with a coefficient of -0.088439 and a p-value of 0.0868, suggesting a marginally significant negative effect on the dependent variable. The ninth coefficient (C(9)) is negative but not significant, with a coefficient of -0.040113 and a p-value of 0.6743. The tenth coefficient (C(10)) shows a positive relationship, but the high standard error (11.77282) and the p-value of 0.4537 indicate that the effect is not statistically significant. The coefficient for the error correction term (ECM(-1)) is -0.023801, and its p-value of 0.0307 is

statistically significant, indicating that the system corrects for disequilibrium, with the negative sign suggesting a stable adjustment process towards long-run equilibrium. In terms of model fit, the R-squared value of 0.915663 indicates that approximately 91.57% of the variance in the dependent variable is explained by the model, suggesting a good fit. The adjusted R-squared of 0.857681 indicates that the model accounts for the explanatory power, adjusting for the number of predictors. The F-statistic of 15.79228 and its associated p-value of 0.000001 show that the overall model is statistically significant, indicating that the variables included in the model collectively have a significant effect on the dependent variable. The Durbin-Watson statistic of 2.193822 suggests that there is no significant autocorrelation in the residuals. In summary, the results indicate a robust model with several significant predictors, particularly C(5), with strong explanatory power and a good fit, as evidenced by the high R-squared and F-statistic values. However, some variables, such as C(3), C(4), C(6), C(9), and C(10), show no significant effect, suggesting that they may not be influential in explaining the dependent variable. The significant error correction term highlights the dynamic adjustment towards equilibrium in the system.

Table 6 Dynamic Least-square regression model

Variable	Coefficient	Std.Error	t-Statistic	Prob
MS	0.725877	0.067879	10.69375	0.0000
CRED	-0.151980	0.068546	-2.217200	0.0486
LDR	-0.893310	0.261998	-3.409612	0.0058
LR	-5.498726	2.498120	-2.201145	0.0500
C	13.04088	4.330115	3.011672	0.0118
R-squared	0.998748		Mean dependent var	4.348396
Adjusted R-squared	0.996928		S.D. dependent var	0.630610
S.E. of regression	0.034953		Sum squared resid	0.013439
Long-run variance	0.000641			

Source: Author's Computation

The regression results reveal key insights into the relationships between the independent variables and the dependent variable, as well as the overall strength of the model. Money Supply (MS) has a positive and statistically significant impact on the dependent variable, with a coefficient of 0.7259 and a p-value of 0.0000. This implies that a 1-unit increase in MS leads to a 0.7259-unit increase in the dependent variable, holding other factors constant. In contrast, Credit to the Private Sector (CRED) shows a negative and significant relationship with the dependent variable, as indicated by its coefficient of -0.152 and p-value of 0.0486. Similarly, the Loan-to-Deposit Ratio (LDR) has a negative and statistically significant effect, with a coefficient of -0.8933 and a p-value of 0.0058. Lending Rate (LR) also exerts a strong negative influence, with a coefficient of -5.4987 and a marginally significant p-value of 0.0500. These results suggest that increases in CRED, LDR, and LR adversely affect the dependent variable, highlighting areas for potential policy intervention. The constant term (C) is also significant, with a coefficient of 13.0409 and a p-value of 0.0118, indicating that the baseline value of the dependent variable is 13.0409 when all independent variables are zero. The model demonstrates an exceptional fit, with an R-squared value of 0.9987, meaning that 99.87% of the variance in the dependent variable is explained by the independent variables. The adjusted R-squared, accounting for the number of predictors, is similarly high at 0.9969, underscoring the model's robustness. The low standard error of regression (0.034953) and minimal sum of squared residuals (0.013439) further indicate a high level of accuracy in the model's predictions. Additionally, the long-run variance of 0.000641 suggests stability in the model's performance over time.

Economic Implications of Findings

The regression results have important economic implications for understanding the relationship between financial inclusion and economic growth in Nigeria. The positive and significant coefficient of Money Supply (MS) indicates that an increase in financial liquidity enhances economic growth, emphasizing the importance of expanding access to financial services and improving liquidity in the economy aligning with the study of (Adekunle, 2024; Beck, Döttling, Lambert and Van Dijk, 2023) and contrarily to the study of (Asuzu and Anyanwu, 2023). This suggests that policies promoting financial inclusion through digital financial services, mobile banking, and responsible monetary expansion can drive economic activity and development. Conversely, the negative and significant impact of Credit to the Private Sector (CRED) on economic growth suggests inefficiencies in credit allocation or misalignment between credit usage and productive economic activities in line with the previous study of Cecchetti, Klapper and Özsayın (2024) contrarily to the finding of Amali, Alymkulova, and Ejila (2023). This may stem from high interest rates, non-performing loans, or credit being channeled into unproductive sectors. To address this, policymakers should ensure that credit facilities are accessible to productive sectors such as agriculture, manufacturing, and SMEs, which are critical for sustainable economic growth. In addition, the negative effect of the Loan-to-Deposit Ratio (LDR) underscores the need for financial institutions to maintain a balance between lending and deposit mobilization to avoid overexposure to risks aligning with the study of Ogbuji (2025). Overall, the findings emphasize the need for targeted financial inclusion strategies that not only expand access to financial services but also ensure the efficient and productive use of financial resources to foster economic growth in Nigeria.

CONCLUSION

This study examines the impact of financial inclusion on economic growth in Nigeria, focusing on key financial indicators such as GDP, Loan-to-Deposit Ratio (LDR), Money Supply (MS), Credit to the Private Sector (CRED), and Lending Rate (LR). The findings indicate that financial inclusion plays a crucial role in fostering economic stability and growth, yet significant challenges remain. While money supply positively influences economic expansion, inefficient credit allocation, high lending rates and financial exclusion hinder sustainable growth.

The empirical analysis shows that financial inclusion enhances economic activities by providing individuals and businesses with access to formal financial services. However, in Nigeria, a considerable portion of the population remains unbanked due to inadequate banking infrastructure, financial illiteracy, and socio-economic inequalities. These limitations reduce the effectiveness of financial inclusion policies and restrict economic participation, particularly in rural and underserved areas. Although the Central Bank of Nigeria (CBN) and other regulatory bodies have implemented initiatives such as the National Financial Inclusion Strategy (NFIS), progress has been slow, and gaps persist in financial service accessibility.

One key finding of this study is that while money supply (MS) significantly contributes to economic growth, credit to the private sector (CRED) negatively impacts GDP. This suggests that the allocation of financial resources in Nigeria may not be fully optimized to support productive economic activities. High lending rates and strict credit conditions also limit borrowing capacity for small and medium-sized enterprises (SMEs), which are vital for economic development. Therefore, policies aimed at lowering interest rates and promoting inclusive lending practices are necessary to enhance financial inclusion's contribution to economic growth. Moreover, the study underscores the importance of technological innovation in expanding financial access. The rapid adoption of mobile banking, digital payment platforms, and fintech solutions can bridge the financial inclusion gap, especially in remote areas. Encouraging the adoption of digital financial services can enhance access to credit, savings, and insurance, thereby fostering inclusive economic growth.

To maximize the benefits of financial inclusion, the Nigerian government and financial institutions must implement targeted reforms to improve banking accessibility, financial literacy, and credit availability. Strengthening regulatory frameworks, incentivizing digital financial services, and promoting financial education are essential steps toward achieving inclusive economic growth. In conclusion, financial inclusion is a key driver of economic development in Nigeria, but its full potential remains unrealized due to structural and policy-related constraints. Addressing these challenges through strategic interventions will enhance financial sector efficiency, stimulate economic activity, and promote sustainable growth.

Based on the findings of this study, in other enhance financial inclusion and its impact on economic growth in Nigeria, strategic measures must be implemented. Firstly, expanding banking infrastructure, particularly in rural and underserved areas, is essential. Financial institutions should leverage digital financial services such as mobile banking, fintech solutions, and digital payment platforms to increase accessibility. The adoption of digital financial services will enable more individuals and businesses to participate in the formal financial system, reducing financial exclusion.

Secondly, improving credit accessibility is crucial for economic growth. Financial institutions should implement inclusive lending practices by lowering interest rates, reducing collateral requirements, and providing tailored financial products for small and medium-sized enterprises (SMEs) and low-income individuals. By easing access to credit, more businesses can thrive, leading to increased employment and economic productivity. Furthermore, financial literacy programs should be strengthened to equip individuals with the necessary knowledge to effectively utilize financial services. Nationwide financial education initiatives by the government, banks, and educational institutions can promote responsible borrowing, savings culture, and investment, thereby improving financial decision-making among Nigerians.

Thirdly, regulatory frameworks should also be reinforced to ensure that financial institutions adopt inclusive practices. The Central Bank of Nigeria (CBN) and other regulatory bodies must implement clear policies on responsible lending, consumer protection, and financial transparency to build public confidence in the financial system. Additionally, fostering public-private partnerships between the government, financial institutions, and technology firms can accelerate financial inclusion. These collaborations can facilitate the development of innovative financial products and enhance financial service delivery, particularly through digital means.

Lastly, financial inclusion strategies must prioritize gender and social inclusion. Special initiatives should be introduced to increase financial access for marginalized groups, including women, the elderly, and individuals in remote areas. Providing gender-responsive financial products and eliminating barriers to account ownership can foster greater economic participation. By implementing these recommendations, Nigeria can strengthen its financial inclusion efforts, drive sustainable economic growth, and reduce poverty, ultimately fostering long-term financial stability and development.

REFERENCES

- Adekunle, A. (2024). Banking, Money Supply and Economic Growth: An Empirical Analysis from Nigeria. *Reviews of Management Sciences*, 6(2), 01-12.
- Ademola, O. A., & Alimi, O. S. (2020). The role of financial inclusion in Nigeria's economic growth. *African Journal of Economic Review*, 8(2), 45-61.
- Akinmoladun, O. L., & Adebayo, T. T. (2021). Socio-economic benefits of financial inclusion in Nigeria: Impact on economic growth and poverty reduction. *Journal of Economics and Development Studies*, 9(1), 22-35. <https://doi.org/10.14303/jeads.2021.04>

- Amali, E., Alymkulova, N., & Ejila, S. A. (2023). Banks' credit to the private sector and economic growth in Nigeria: The moderating role of digitalization. *Journal of Global Economics & Business*, 4(13), 17-35.
- Asongu, S. A., & Nwachukwu, J. C. (2016). Financial inclusion, economic growth, and poverty reduction in Africa. *African Governance and Development Institute (AGDI)*.
- Asuzu, O. C., & Anyanwu, S. O. (2023). Empirical investigation of money supply, inflation and economic growth nexus in Nigeria. *Journal of Economics and Allied Research*, 8(2), 1-18. Retrieved from <https://jearecons.com/index.php/jearecons/article/view/296>
- Beck, T., Döttling, R., Lambert, T., & Van Dijk, M. (2023). Liquidity creation, investment, and growth. *Journal of Economic Growth*, 28(2), 297-336.
- Cecchetti, A., Klapper, E., & Özsayın, B. (2024). Credit allocation and macroeconomic fluctuations. *The Review of Economic Studies*, 91(6), 3645
- Demirgüç-Kunt, A., Klapper, L., & Singer, D. (2017). Financial inclusion and economic development. *World Bank Policy Research Working Paper No. 8243*.
- EFinA. (2023). Access to Financial Services in Nigeria Survey. Enhancing Financial Innovation & Access
- Enueshike, M., & Okpebru, E. (2020). Financial inclusion and economic growth in Nigeria: A time series analysis. *International Journal of Economics and Finance Studies*, 12(2), 45-60.
- Enueshike, P., & Okpebru, O. O. (2020). Effects of financial inclusion on economic growth in Nigeria (2000-2018). *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 10(1), 44-49.
- Igbinovia, F. G., Ojo, A. M., & Idowu, M. A. (2019). Financial inclusion and its impact on economic growth in Nigeria. *International Journal of Financial Studies*, 7(3), 1-14. <https://doi.org/10.3390/ijfs7030032>
- Ifediora, C., Offor, K. O., Eze, E. F., Takon, S. M., Ageme, A. E., Ibe, G. O., & Onwumere, J. U. J. (2022). Financial inclusion and its impact on economic growth: Empirical evidence from sub-Saharan Africa. *Cogent Economics & Finance*, 10(1), 2060551. <https://doi.org/10.1080/23322039.2022.2060551>
- Kim, D.-W., Yu, J.-S., & Hassan, M. K. (2018). "Financial Inclusion and Economic Growth in OIC Countries." *Research in International Business and Finance*, 43, 1-14.
- Maune, A., Matanda, E., & Mundonde, J. (2020). Does financial inclusion cause economic growth in Zimbabwe? An empirical investigation. *AUDOE*, 16(1), 195-215.
- Maune, S., Matanda, P., & Mundonde, S. (2020). Financial inclusion and economic growth: A cross-country analysis in Africa. *African Journal of Economic and Management Studies*, 11(2), 134-150. <https://doi.org/10.1108/AJEMS-09-2019-0295>
- Ogbuji, I. A. (2025). The Impact of Banks' Liquidity on Economic Growth in Nigeria. *Global Journal of Accounting*, 11(1), 1-8.
- Okon, E. V., & Umoh, E. D. (2023). Effect of Fintech and Financial Inclusion on Economic Growth in Nigeria. *International Journal of Economics, Commerce and Management*, 11(9), 281-295.
- Olusegun, T. S., Evbuomwan, O., & Belonwu, M. C. (2021). Does financial inclusion promote financial stability in Nigeria? *Central Bank of Nigeria Economic and Financial Review*, 59(1), 77-99.

- Owolabi, A. A., Falola, T., & Adeyemi, A. A. (2021). Mobile money and financial inclusion: A catalyst for economic growth in Nigeria. *Journal of Financial and Economic Policy*, 13(4), 283-297. <https://doi.org/10.1108/JFEP-07-2020-0142>
- Ozili, P. K. (2022). Financial inclusion in Nigeria: An overview. *Munich Personal RePEc Archive (MPRA)*. <https://mpra.ub.uni-muenchen.de/113572/>
- Tok, Y. W., & Heng, D. (2022). Fintech: Financial inclusion or exclusion? *International Monetary Fund (IMF) Working Paper, WP/22/80*. Institute of Capacity Development.
- UNCTAD. (2020). Financial inclusion for development: Better access to financial services for women, the poor, and migrant workers. *United Nations Conference on Trade and Development*. https://unctad.org/system/files/official-document/ditctncd2020d6_en.pdf
- Uruakpa, N. I., Kalu, U. K., & Ufomadu, O. A. (2019). Impact of financial inclusion on economic growth of Nigeria. *International Journal of Sustainable Development*, 12(2), 46–58.
- Zulfiqar, K., Chaudhary, M. A., & Aslam, A. (2016). Financial inclusion and its implications for inclusive growth in Pakistan. *Pakistan Economic and Social Review*, 54(2), 297–325. <https://www.jstor.org/stable/26616711>