E-ISSN: 1115 - 8530 P-ISSN: 3026-8958
MPRI-JFRBD | INTERNATIONAL JOURNAL OF FINANCIAL RES. AND BUSINESS DEVELOPMENT
VOL. 11 NO. 7 – JANUARY, 2026

FINANCIAL INCLUSION AND CAPITAL MARKET DEVELOPMENT IN NIGERIA

***MOMOH, ABDULRAHEEM Ph.D; &**
****ABIMOKHAUNO, MICHEAL EWELA**

*Department of Cooperative Economics and Mgt, Auchi Polytechnic, Auchi. **Departmrnt of Accountancy, Auchi Polytechnic, Auch

Corresponding Author: mikeexpressmails9@gmail.com

DOI: https://doi.org/10.70382/mejfrbd.v11i7.092

Abstract

Financial inclusion and capital market development are critical components for fostering sustainable economic growth and reducing poverty. Financial inclusion ensures that individuals and businesses, especially those traditionally underserved, have access to useful and affordable financial products and services that meet their needs. Capital market development, on the other hand, facilitates efficient allocation of resources by mobilizing savings and channeling them into productive investments. This study examined the impact of financial inclusion on capital market development of Nigeria. Quarterly time series data from $2000Q_1$ to $2024Q_4$ of Capital Market proxied by market capitalization (MCAP), number of microfinance banks (MFB), value of rural deposits as a ratio of total deposits (RDE), value of rural credits as a ratio of total loans (RCR) and interest rate (INT). The Dickey-Fuller unit root test and the Johanson cointegration test were carried out. The result showed that the data set were all stationary at first difference I(1)and the series had a long run relationship with dependent variable. The Fuller modified ordinary least squares (FMOLS) technique was utilized to estimate the model, the result shows that all the variables(MFB, RCR, RDE and INT) had direct relationship with the dependent variable (MCAP) and were all significant at 5% significance level . The result further revealed that the positive impact of financial inclusion on capital market growth suggests that policies aimed at stimulating financial inclusion growth can have a multiplier effect on capital market development. Furthermore, the positive relationship

Keywords: Financial inclusion, Capital market, Fuller modified ordinary least squares, banks

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

between rural deposits and capital market development indicate that policies aimed at mobilizing rural deposits can increase financial inclusion. This can be achieved through expanding bank branches and mobile banking services in rural areas. The study therefore recommended that Government should develop initiatives to boost rural deposits by creating accessible and attractive savings products, thereby increasing the capital base available for investment in capital markets. Also banks and other financial institutions should implement targeted credit programs that provide subsidized loans or guarantees to rural businesses, particularly in sectors with high growth potential. Banks and other financial institutions should implement monetary policies that keep lending rates low and manageable for borrowers, particularly in rural areas.

Introduction

A key factor in economic growth and development, especially in developing nations like Nigeria, is financial inclusion. It is the process of making sure that people and companies have access to timely, practical, and reasonably priced financial services and products, such as banking, credit, insurance, and investment opportunities (Kama & Adigwu, 2013). Even though Nigeria has the biggest economy in Africa, a sizable section of its people are still shut out of formal financial systems, which restricts their capacity to save, invest, and engage in economic activity. The nation's attempts to achieve sustainable development and inclusive growth are seriously hampered by this pervasive financial exclusion. Lenka & Barik, 2018 noted that improved financial inclusion leads to increased access to financial services which promotes sustainable growth by enabling more people to save, borrow, and invest. They emphasised that with access to savings accounts, individuals can build financial resilience and invest in their future.

Borrowing opportunities allow people to access credit for personal or business needs, enabling them to invest in income-generating activities. Investing in financial assets or businesses can drive innovation, job creation, and economic diversification. As more people participate in the formal economy, economic activity increases, leading to job creation and GDP growth. By expanding access to financial services, developing nations can unlock economic potentials and improve living standards. More so, financial inclusion helps low-income individuals manage their finances effectively, build assets, and invest in essential services like education and healthcare. By having access to savings accounts, insurance, and credit, they can mitigate risks, capitalize on opportunities, and improve their overall well-being. This, in turn, enables them to break the cycle of poverty and enhance their socio-economic status.

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

Capital markets make it easier to mobilize and distribute long-term funds to the economy's productive sectors. The capital market in Nigeria is a vital conduit for directing savings from people and organizations into investments that promote company growth, job creation, and the country's economic advancement. However, the degree of financial inclusion in the economy has a direct impact on the expansion and effectiveness of Nigeria's capital markets (Taiwo; Alaka, & Afieroho, 2016). A population that is financially included adds to a larger and more varied investor's base, which improves capital market depth, stability, and liquidity.

In Nigeria, where increasing access to financial services can enable previously marginalized populations to engage in investment activities, the relationship between financial inclusion and capital market development is particularly important. Financial inclusion can boost investor participation and confidence in the capital markets by lowering transaction costs, raising financial literacy, and utilizing technological advancements like digital banking and mobile money platforms. Increased capital formation, better corporate governance, and a more resilient financial system can result from this (Abdullahi & Oladipo, 2022).

Despite significant progress in expanding access to financial services, many individuals and businesses remain excluded from the formal financial system, particularly in developing countries like Nigeria. Hence, this study seeks to investigate the impact of financial inclusion on the development of Nigeria's capital markets, exploring the causal relationship between financial inclusion and capital market development in Nigeria. Policymakers, regulators, and financial institutions needs to understand this relationship in order to develop strategies that support equitable economic development while bolstering the capital markets as engines of sustainable growth. In the end, promoting financial inclusion is both a strategic necessity for advancing Nigeria's capital market development and attaining long-term economic prosperity as well as a way to increase economic opportunities.

Statement of the Problem

Though Nigeria's economy is expanding and capital markets play a crucial role in economic development, a significant portion of the population remain financially excluded, which limits their access to formal financial services and participation in investment activities. This exclusion prevents the mobilization of diversified savings and limits the expansion of the investor's base, which is essential for the growth of the capital market. In addition, issues like low financial literacy, inadequate infrastructure, regulatory gaps, and limited technological adoption continue to hinder the effective integration of underserved populations into the financial system. Consequently, the underdevelopment

of financial inclusion may be constraining the full potential of Nigeria's capital markets, affecting market depth, liquidity, and overall economic growth.

Moreover, Several authors (Shreya, Shravni & Melvin 2025; Otiwu, Okere & Ozuzu, 2018; Lenka & Barik, 2018; Salahuddin & Gow, 2016; Gourene & Mendy, 2019, Nwafor & Israel, 2019) have examined the effect of financial inclusion o economic growth, while other have studies on financial inclusion and agriculture output are numerous (Fowowe, 2020, Olaniyi, 2017; Umaru & Eshiozemhe, 2022). Furthermore, some authors have extended such studies to capture financial inclusion and inclusive economic growth (Odeleye & Olusoji, 2018; Afolabi, 2020, Ehiedu, Onuorah, & Owonye 2022). Only a few studies (Oyadeyi, 2025; Agya,; Ojiya, & Eshidenang, 2022; Le & Taghizadeh, 2019) have investigated the effect of financial inclusion on capital market development. This study, therefore seeks to address the gap in understanding how financial inclusion influences capital market development in Nigeria.

Capital Market

The buying and selling of long-term securities like stocks, bonds, and other instruments takes place on a capital market. It is essential to the economy because it makes capital formation and resource distribution easier. Businesses, governments, and other organizations can raise money for investment, growth, and development initiatives through capital markets. Capital markets facilitate the efficient distribution of financial resources and economic growth by linking investors with excess funds with organizations in need of capital (Oseni & Nwosa, 2011). The primary market and the secondary market are the two main divisions of capital markets. New securities are issued and sold to investors in the primary market, giving issuers access to new funding. Existing securities are traded among investors in the secondary market, which provides price discovery and liquidity. By giving businesses long-term funding and investors chances to increase their wealth, diversify their risks, and earn returns, healthy capital markets support economic stability.

Financial Inclusion

Multiple researchers have provided interpretations of financial inclusion throughout the decades. Kama and Adigwu (2013) characterize financial inclusion as a mechanism or circumstance that facilitates straightforward access to, availability of, and utilization of formal financial systems by economic participants. They described a framework where all economic actors possess convenient access to establishing bank accounts, obtaining credit, and seamlessly utilizing financial system products and facilities without obstacles. Ozili (2018) clarified that comprehensive financial inclusion represents a condition where

all individuals capable of utilizing financial services possess access to high-quality services, delivered at reasonable costs, through convenient channels, and with respect for clients. This interpretation, however, excluded those lacking financial literacy, making it undesirable since financial inclusion aims to involve broader segments of the public. Financial services are delivered through various providers, predominantly private entities, reaching everyone who can utilize them, including disabled individuals, impoverished populations, and rural communities.

Financial inclusion refers to the process of ensuring that all individuals and businesses, particularly those underserved or excluded from the formal financial system, have access to useful and affordable financial products and services. These services include savings accounts, credit, insurance, payment systems, and investment opportunities. The goal of financial inclusion is to empower people to participate fully in the economy, improve their livelihoods, and reduce poverty and inequality (Babarinde, Popoola, Tajudeen & Mohammed, 2021).

Financial inclusion is critical because many people in developing and even developed economies remain outside the formal financial system due to barriers such as lack of documentation, low income, geographic isolation, limited financial literacy, or high transaction costs.

Interconnection between Capital Market and Financial Inclusion

It is becoming more widely acknowledged that capital markets and financial inclusion are essential to long-term economic growth. Savings raised through financial inclusion can be converted into profitable investments through the use of capital markets. On the other hand, financial inclusion increases the number of issuers and investors that take part in capital markets, increasing their efficiency, liquidity, and inclusivity.

More people and small companies can access the capital markets directly as investors or indirectly through middlemen like mutual funds and pension funds thanks to financial inclusion. This increased involvement improves market depth and liquidity by increasing the flow of money into capital markets. Additionally, it helps small and medium-sized businesses (SMEs) expand by making it easier for them to obtain financing through debt or equity instruments, which are frequently made possible by robust capital markets.

Financial education and awareness programs, which assist novice investors in comprehending capital market instruments and risks and encourage responsible investment behavior, are another common component of financial inclusion initiatives. Therefore, by enabling a larger portion of the population to profit from investment returns, inclusive capital markets can enhance wealth distribution.

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

THEORETICAL LITERATURE

This can also be referred to as the Analytical framework of this paper, which will provide a basis for our empirical analysis. This examined the theories that relate to the issues in terms of the Impact of Financial Inclusion on Capital Market in Nigeria. The theories are:

Finance-Led Growth Theory

This theory posits that financial development is a key driver of economic growth. It suggests that a well-developed financial system, including a robust capital market, can promote economic growth by mobilizing savings, facilitating investment, and enhancing financial inclusion. The theory was propounded by Joseph Schumpeter, Robert King and Ross Levine 1990.

Financial Inclusion Theory

This theory emphasizes the importance of access to financial services for individuals and businesses. It suggests that financial inclusion can lead to economic growth, poverty reduction, and improved financial stability. Although no one individual can be attributed to this, notable researchers like Abhijit Banerjee and Esther Duflo and Muhammad Yunus are major proponents of this theory.

Capital Market Development Theory

This theory highlights the role of capital markets in promoting economic growth and development. It suggests that a well-developed capital market can provide access to long-term capital, promote investment, and enhance economic growth. The theory was developed by Joseph Schumpeter, Ross Levine, Merton Miller and Franco Modigliani

Empirical Review

The empirical literature examining the impact of financial inclusion on capital market development has made many scholars to empirically find out the impact of financial inclusion on capital market development in both the developed and developing countries. Below are some of the findings:

Oyadeyi (2025), studied the nexus between financial development, financial inclusion, and monetary transmission mechanisms in Africa. The author used annual data on 54 African countries from 2004 to 2023, utilizing various econometric techniques including Driscoll and Kraay fixed effects models, quantile regression models, panel structural vector autoregressive models, and the JKS causality tests. The study revealed that financial development reduces inefficiencies in the interest rate and inflation expectations channels, enhancing transmission effectiveness. It also strengthens the wealth and

collateral effects in the asset price channel and plays a role in expanding credit availability. The study however noted that financial inclusion improves monetary transmission efficiency across the interest rates, credit and inflation expectations channels. The study further discovered that the interest rate channel had the most significant impact on output. The study therefore concluded financial inclusion strengthen financial development and hence drive growth.

Agya, Ojiya, and Eshidenang (2022), examined the effect of financial inclusion on Nigeria's economic growth, using annual time series data from 1980 to 2019. The study utilised the autoregressive distributive lag method (ARDL). They found out that financial inclusion, human capital, and Investment have a significant positive impact on economic growth in the short and long-run, while the exchange rate positively and significantly impacts economic growth in the long run and negatively in the short run, respectively. The study further revealed that inflation had a negative and significant impact on economic growth in the long run. The authors concluded that financial inclusion has the most impact on economic growth as it contributed 11.5 per cent to Nigeria's economic growth.

Ibrahim and Aliero's (2020) study used quantile and linear regression methods to investigate the connection between financial inclusion and per capita income. Financial inclusion and per capita income were found to be positively correlated, with a consistent positive impact across all household income brackets. Income gaps were initially widened by differences in access to financial services, but later on, gradual convergence was noted, according to the analysis.

Nguemnang and Roger (2020) explored the impact of remittances and financial inclusion on income inequality using a panel data analysis of 47 countries. Employing the generalized method of moments, they examined variables such as ATM outlets, bank branches, credits, deposits, and insurance, alongside remittances and income inequality indicators (Gini, Atkinson & Palma ratios). Their findings suggest that both remittances and financial inclusion reduce income inequality, leading them to recommend policies that provide migrants with financial services to facilitate remittances and alleviate income inequality.

Ratnawati (2020) finds that financial inclusion variables significantly impact economic growth, poverty, income inequality, and financial stability in 10 Asian countries. Using the generalized method of moments, the study estimates the effects of commercial bank accounts, branches, ATMs, deposits, loans, and non-performing loans on GDP, poverty rates, income inequality, and financial stability. The results confirm the significant effectiveness of financial inclusion variables on these outcomes. Similarly, Adesanya, Adediji, and Okenna (2020) examined the impact of stock exchange market activities on economic development in Nigeria using multiple regression analysis. The study revealed

that market capitalization had a positive but statistically insignificant relationship with GDP. In contrast, the All Share Index and total new issues (TNOV) had positive and significant relationships with GDP.

Le, Chuc, and Taghizadeh-Hesary (2019) examine the trend and impact of financial inclusion on financial efficiency and stability in 31 Asian countries, categorized by income level. Employing principal component analysis, descriptive statistics, and other econometric techniques, the study finds that financial inclusion negatively affects financial efficiency across the whole sample and subsamples. In contrast, financial inclusion positively impacts financial sustainability in the overall sample. Onuora (2019) investigated the impact of the capital market on Nigeria's economic growth from 2001 to 2017 using time series data and the ordinary least squares regression method. The study found no significant positive relationship between certain economic growth indices and the capital market in Nigeria. Specifically, the relationships between transportation and capital market revenue, as well as GDP growth rate and capital market revenue, were insignificant. However, a positive significant relationship was found between adequate security and capital market revenue. The relationship between financial inclusion and income inequality in Sub-Saharan Africa using disaggregated data from the World Bank's Global Findex was examined by Also, Gourene and Mendy (2019) examined the impact of financial inclusion on economic growth in 8 West African Economic and Monetary Union countries using a panel data analysis. Their causality test reveals no short-term causal relationship between the supply and demand for financial services, but a bidirectional causality in the long run.

Tita and Aziakpono (2019) found a positive relationship between financial inclusion and income inequality, noting that factors such as asymmetric information, policy barriers, and inadequate financial infrastructure limit account ownership and access to credit. In a study conducted in Indonesia, Zia and Prasetyo (2018) concluded that although financial inclusion is an important tool for poverty reduction, its impact on decreasing income inequality is limited. This finding was based on a panel data analysis covering 33 provinces over two years. Young-Park and Mercado (2018) examined the factors influencing financial inclusion and its effects on poverty and inequality using an innovative model with data from 177 countries. The study found that per capita income, demographic factors, and the rule of law are major drivers of financial inclusion both globally and in Asia. Conversely, basic education and literacy play a more significant role in promoting financial inclusion in regions outside Asia (Young-Park & Mercado, 2018).Saab (2017) examines the relationship between financial inclusion and economic growth in five North African and Middle Eastern countries (Lebanon, Morocco, Egypt, Jordan, and Tunisia) using vector autoregressive (VAR) and Granger causality models. The results show that credit,

borrowing, and average loan size positively impact growth. Additionally, the Granger causality test reveals a bidirectional relationship between credit cards, mobile accounts, and gross national product per capita. The study estimates various variables, including GDP growth rate, average loan size, and number of borrowers, using VAR and pairwise Granger causality tests.

Ong-A-Kwie-Jurgens (2016) used a general equilibrium model to investigate the relationship between financial inclusion, GDP, and inequality in Suriname. The results indicated that financial inclusion affects both GDP and income inequality (measured by the Gini coefficient), with the impact varying depending on factors such as the size and quality of financial services. The study recommended removing barriers to credit access, such as collateral requirements and high interest rates.

Similarly, Ologunwa and Sadibo (2016) estimate the relationship between capital market development and economic growth in Nigeria using aggregate data and a structural dynamic model. Their findings show that capital market ratio and turnover ratio are significant and positive drivers of economic growth, with stock markets promoting economic growth through savings mobilization. The study suggests that large, liquid, and efficient stock markets can facilitate savings mobilization, ultimately contributing to economic growth.

Briggs (2015) explores the impact of the capital market on Nigeria's economy from 1981 to 2011, using economic growth measured by GDP as the primary indicator. The study analyzes several capital market variables, including market capitalization, total new issues, transaction values, and total listed equities and government stocks. Using Johansen co-integration and Granger causality tests, the findings reveal a long-term relationship between the capital market and economic growth, demonstrating a positive influence of the capital market on Nigeria's economy.

In contrast, Garcia-Herero and Turegano (2015) found that financial inclusion helps reduce income inequality. Using a pooled OLS regression approach, alongside the Kuznets ratio and descriptive statistics, they analyzed variables such as GNI, GDP per capita, government expenditure, trade openness, and credit to the private sector. Their findings suggest that financial inclusion and financial deepening have distinct impacts on income inequality. While financial deepening promotes equitable distribution (as measured by the Gini coefficient), the size of the financial sector (proxied by financial deepening) appears to exacerbate income inequality.

In a related study, Kim (2015) found that income inequality impedes economic growth, especially in low-income countries. Analyzing data from 40 OECD countries using a least squares regression model, Kim demonstrated that financial inclusion, measured by accessibility, is a causal factor influencing both income inequality and economic growth.

Furthermore, financial inclusion was shown to strengthen the relationship between these two variables, indicating that reducing inequality through financial inclusion can foster economic growth.

In a separate study, Yorulmaz (2012) conducted a cross-country analysis within the European Union, focusing specifically on Turkey. Using a multidimensional financial inclusion index alongside the human development index, the study examines the impact of financial inclusion on economic development and compares Turkey's level of financial inclusion with other EU countries. Results from ordinary least squares regression confirm a generally positive relationship between financial inclusion and human development, with some exceptions. Further analysis reveals that the size of the financial system is positively associated with economic development, while income and development are key factors driving financial inclusion. In contrast, income inequality and urbanization show a negative relationship with financial inclusion in Turkey.

In summary, while the literature on financial inclusion and monetary transmission mechanisms, the impact of financial inclusion on financial efficiency and stability, as well as the relationship between financial inclusion and economic growth, has been well researched, the impact of financial inclusion on capital market development remains insufficiently explored, creating a gap that this study contributes to the literature. The study would also utilize quarterly data, which is a big departure from previous studies

Research Design

Ex-post facto research design is used in this study.

Data Type, Sources, and Scope

The analysis was conducted using the CBN Statistical Bulletin's annual time series secondary data. The analysis's data set encompassed the years $2000Q_1$ through $2024Q_4$.

Model Specification

The main focus of this study is to determine the impact of financial inclusion on capital market development in Nigeria. Thus, this study used the functional model given below:

$$MCAP = f(MFB, RCR, RDE, INT) \quad (3.1)$$

Explicitly expressed as;

$$MCAP = \beta_0 + \beta_1 MFB + \beta_2 RCR + \beta_3 RDE + \beta_4 INT + \mu \quad (3.2)$$

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

For the purpose of estimation, there is need to log-linearise the model as in equation (3.0). This is necessary to streamline the scales of the variables to minimize fluctuations in the data.

$$LnMCAP = \beta_0 + \beta_1 LnMFB + \beta_2 LnRCR + \beta_3 LnRDE + \beta_4 INT + \mu \quad (3.3)$$

Equation (3.3) is designed to estimate the relationship that exists between Capital market development (MCAP) and financial inclusion variables (MBF, RCR, RDE) in the Nigerian economy for the period under review. It is important to see how changes those explanatory variables influence the magnitude and direction of change in MCAP.

Where MCAP = Market capitalization as a ratio of GDP

MFB = No. of Microfinance Banks

RCR = Credit to Rural dwellers and businesses as a ratio of total credit

RDE = Deposits by rural dwellers and business as a ratio of total savings

INT = Interest rates

μ = Error term

β_{1-4} = Coefficient of variables

β_0 = Intercept

In line with apriori expectations, the expected signs of the coefficients are:

$\beta_{1-4} > 0$

Testing for Stationerity/Unit Root

Prior to identifying any possible long term relationship, it will be important to test the time series data for stationerity as the key concept underlying time series processes. The Stationerity Test can also be useful in determining if trending data should be first differenced or regressed on deterministic functions of time to render the data stationery. This implies that non stationery time series data might need to be differenced more than once before it becomes stationery. If the time series are stationery in their levels, they are said to be integrated of order zero Equation 1 (0), If the time series are stationery in their first difference, then they are said to be integrated of order one, and lastly, if they are stationery in their second differences, they are said to be integrated of order two. The order of integration of the variables was tested using the Argument Dickey – Fuller (ADF) (Dickey and Fuller, 1981) Unit Root Test for the presence of unit roots.

Co–integration Test

The Co – integration Test is carried out in order to establish whether there exists any long – term relationship between the variables.

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

Analytical Framework

An estimator that may deploy a semi-parametric correction to remove the problems which are associated with the long-run correlation between the stochastic regressors and the cointegrating equation was proposed by Phillips and Hansen (1990). The outcome of their proposal is a Fully Modified OLS (FMOLS) estimator which is characteristically unbiased with an attribute of being a fully efficient mixture with normalized asymptotics that allows for standard Wald tests utilizing the standard Chi-square statistical inference. The cointegrating regression methodology adopts preliminary estimates of the symmetric and one-sided long-run covariance matrices of the residuals. Suppose $\hat{u}_{1t}$ is the residuals obtained after estimating Equation 3.1, then $\hat{u}_{2t}$ can be generated indirectly and declared as $\hat{u}_{2t} = \Delta\hat{\epsilon}_{2t}$ from the regression analysis process.

$$X_t = \hat{\Gamma}_{21}' D_{1t} + \hat{\Gamma}_{22}' D_{2t} + \hat{\epsilon}_{2t}$$

r can be obtained directly from the difference regressions process. Hence, we can obtain

$$\Delta X_t = \hat{\Gamma}_{21}' \Delta D_{1t} + \hat{\Gamma}_{22}' \Delta D_{2t} + \hat{u}_{2t} \qquad (3.4)$$

If we declare $\hat{\Omega}$ and $\hat{\Lambda}$ to be the long-run covariance matrices which are estimated utilizing the residuals $\hat{u}_t = (\hat{u}_{1t}, \hat{u}_{2t}')'$, then we may define the modified data as:

$$y_t^+ = y_t - \hat{\omega}_{12}\hat{\Omega}_{22}^{-1}\hat{u}_2 \qquad (3.5)$$

and the estimated bias of the correction term may be declared:

$$\hat{\Lambda}_{12}^+ = \hat{\Lambda}_{12} - \hat{\omega}_{12}\hat{\Omega}_{22}^{-1}\hat{\Lambda}_{22} \qquad (3.6)$$

Hence the FMOLS estimator can be given as:

$$\hat{\theta} = \begin{bmatrix} \beta \\ \hat{\gamma}_1 \end{bmatrix} = \left(\sum_{t=2}^{T} Z_t Z_t' \right)^{-1} \left(\sum_{t=2}^{T} Z_t y_t^+ - T \begin{bmatrix} \hat{\Lambda}_{12}^{+\prime} \\ 0 \end{bmatrix} \right) \qquad (3.7)$$

where $Z_t = (X_t', D_t')'$ is the key to FMOLS estimation and would comprise the development of the long-run covariance matrix estimators given as $\hat{\Omega}$ and $\hat{\Lambda}$.

As a prelude to declaring the options which are available for estimating $\hat{\Omega}$ and $\hat{\Lambda}$, it will be necessary to properly determine the scalar estimator

$$\hat{\omega}_{1.2} = \hat{\omega}_{11} - \hat{\omega}_{12}\hat{\Omega}_{22}^{-1}\hat{\omega}_{21} \quad (3.8)$$

Equation (3.8) can be declared as the long-run variance of u_{1t} that is estimated conditional on u_{2t}. Furthermore, we may apply the correction of a degree-of-freedom to $\hat{\omega}_{1.2}$. Hence it can be demonstrated that null hypothesis for the Wald statistic $R\theta = r$ is

$$W = (R\hat{\theta} - r)'(RV(\hat{\theta})R')^{-1}(R\hat{\theta} - r) \quad (3.9)$$

Equation 3.9 possesses an asymptotic χ_g^2 (Chi-Square distribution) where g is defined as the restrictions that may be imposed by R. The restrictions which are imposed on the constant term or any other non-trending variables are not testable using the theory which underlies equation (3.9).

Descriptive Statistics

This section examines the descriptive statistics of the data series employed in the study. These include Market capitation (MCAP), Number of microfinance banks (MFB), Rural deposit (RDE), Rural credit (RCR), Interest rate (INT). The descriptive statistics of these variables is shown in Table 1

	MCAP	MFB	RDE	RCR	INT
Mean	2492.524	908.0000	162.3403	255.6960	19.41124
Median	2458.313	909.0000	90.06500	160.3188	12.54300
Maximum	3222.640	987.0000	462.4783	988.5900	72.72900
Minimum	1968.560	801.0000	0.020000	16.56000	3.226000
Std. Dev.	368.6855	57.83441	162.4351	269.0967	17.04574
Skewness	0.294875	0.156399	0.384563	1.324682	1.637389
Kurtosis	1.906613	1.971278	1.508367	3.708140	2.727758
Jarque-Bera	3.086602	2.312222	5.633072	15.04119	3.13520
Probability	0.213675	0.314708	0.059813	0.000542	0.080026
Sum	119641.2	43584.00	7792.334	12273.41	718.2160
Sum Sq. Dev.	6388662.	157206.5	1240103.	3403413.	10460.07
Observations	96	96	96	96	96

Source: Researcher's 2025 Computation using E-views 9.

Table 1 shows the result of the descriptive statistics for the variables used in the study. Based on the results, all the selected series (MCAP, MFB, RDE, RCR, INT and INF) had a

consistent average. This was indicated by the fact that the mean and median values tend to lie between the maximum and minimum values for series. The skewness and kurtosis as shown in the result explain the distribution and shape of the variables used for the investigation. For the series used for the study, all the variables MCAP, RDE, RCR and INT are positively skewed. The kurtosis results revealed that Market Capitalisation (MCAP), Number of Microfinance Bank (MFB) and Rural Deposit (RDE) were playtykurtic with the kurtosis coefficient index lower than 3 while Value of Rural Credit (RCR) are leptokurtic. This conclusion is on the premise that their kurtosis value is greater than 3. Interest Rate (INT) is adjudged to be mesokurtic since the kurtosis value is close to 3. The Jarque-Bera statistics indicate that series MCAP, MFB, RDE and INT are normally distributed while RCR is not normally distributed. This is indicated by the probability value of the Jarque-Bera statistics which were not-significantly different from zero at 5 percent significant level.

Stationarity Test of the variables

The test for stationarity of the variables used in the study was carried out using Augmented Dickey Fuller test statistic and the result was presented in table 2.

Table 2 Augmented Dickey Fuller Unit Root Test Result

VARIABLES	ADF CALCULATED VALUE		CRITICAL VALUE	ORDER OF INTEGRATION
	@ LEVEL I(0)	@ 1st Diff. I(1)	@5%	
LnMCAP	-0.734211	-4.354663	-2.945842	I(1)
LnMFB	-1.342778	9.277779	-2.945842	I(1)
LnRDE	-1.822687	-5.724826	-2.945842	I(1)
LnRCR	0.032140	-3.339702	2.948404	I(1)
INT	2.238120	3.632900	2.945842	I(1)

Source: Researcher's 2025 Computation using E-views 9

The result in Table 2 indicates that the variables (MCAP, MFB, RDE, INT, RCR and INT) were stationary at first difference I(1). The implication of this result is that the time series' statistical properties of the variables are stable over time.

Johanson Cointegration Test Result

In the aftermath of investigating the stationarity status of the variables, we proceed to perform the cointegtration test. Consequently, the Multivariate Cointegration Technique proposed by Johansen (1988) and Johansen and Juselius (1990) is applied to determine whether there was a stable long-run relationship among the variables under investigation. As a general rule, at least one cointegration vector must exist among the variables for an

equilibrium relationship to exist among them. The maximum Eigen statistic was used. The result of the Johansen cointegration test is shown in Table3.

Table3 Cointegration Test Results

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.809301	319.2368	197.3709	0.0000
At most 1 *	0.759594	243.0120	159.5297	0.0000
At most 2 *	0.649986	177.4424	125.6154	0.0000
At most 3 *	0.576458	129.1525	95.75366	0.0000
At most 4 *	0.557421	89.63378	69.81889	0.0006
At most 5 *	0.414815	52.13755	47.85613	0.0188
At most 6	0.297285	27.48952	29.79707	0.0902
At most 7	0.208721	11.26054	15.49471	0.1960
At most 8	0.010632	0.491703	3.841466	0.4832

Trace test indicates 6 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.809301	76.22476	58.43354	0.0004
At most 1 *	0.759594	65.56960	52.36261	0.0014
At most 2 *	0.649986	48.28996	46.23142	0.0297
At most 3	0.576458	39.51868	40.07757	0.0577
At most 4 *	0.557421	37.49623	33.87687	0.0177
At most 5	0.414815	24.64803	27.58434	0.1136
At most 6	0.297285	16.22898	21.13162	0.2118
At most 7	0.208721	10.76884	14.26460	0.1662
At most 8	0.010632	0.491703	3.841466	0.4832

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Sources: Researcher's 2025 Regression Output using Eviews 9

The result of the cointegration test for the model is presented in Table 3. The Johansen cointegration test revealed that at least six cointegration vector exist when the Trace

statistic is applied. Also, evidence from the Max- Eigen statistic is compared with the critical value reveal about three cointegrating vector exist at the 5 percent level of significance. Hence, the hypothesis of no co-integration among the variables can be rejected. This implies that a long run relationship exist among the variables in the study period.

Long Run Estimation of the Model

Cointegrating regression is adopted to assess the effect of financial inclusion on capital market development in Nigeria. The cointegrating regression test result on the effect of internet usage on financial inclusion (Table 4.5).

Table 5 Long run Estimation of the Model specified

Dependent Variable: MCAP

Method: Fully Modified Least Squares (FMOLS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LnRCR	0.303131	0.127308	2.373205	0.0195
LnRDE	0.196537	0.047233	4.161021	0.0157
INT	0.551769	0.135694	4.066258	0.0002
LnMFB	0.649135	0.123101	5.277011	0.0176
C	0.241701	0.111510	2.167904	0.0066
R-squared	0.612832	Mean dependent var		2499.985
Adjusted R-squared	0.575060	S.D. dependent var		374.9249
S.E. of regression	244.4040	Sum squared resid		2449066.
Long-run variance	131843.8			

Source: Researcher's 2025 Regression Output using E-views 9

Table 5 shows the long run impact of the regressor on the dependent variables. It reveals that rural credit (RCR) has a coefficient of 0.303131 indicating a positive relationship with capital market development (MCAP). This implies that as rural credit increases, capital market development also tend to increase, at a moderate rate. Rural deposit (RDE), with a coefficient of 0.196537 implies a positive relationship with capital market development. It shows that an increase in rural deposits is associated with an increase in capital market development. This implies that encouraging financial inclusion in rural areas, thereby increasing rural deposits, can contribute to the growth and development of capital markets.

Number of microfinance banks (MFB) with a coefficient of 0.649135, implies that increase in the number of microfinance banks is associated with a significant increase in capital

market development. For every one-unit increase in the number of microfinance banks, capital market development is expected to increase by about 0.649 units, assuming other factors remain constant. This implies that the presence and growth of microfinance banks play a substantial role in promoting capital market development. It suggests that expanding microfinance institutions can greatly enhance financial inclusion and mobilize more funds, which in turn contributes to the development of capital markets. The result further show that interest rate (INT) has a positive relationship with capital market development (MCAP). With a coefficient of 0.551769, implies that interest rate (INT) has a positive relationship with capital market development (MCAP) and an increase in interest rate by one unit, will lead to increase in capital market development by 0.55 units. This indicates that higher interest rates may encourage more saving and investment in capital markets, as investors seek better returns. It could also reflect improved profitability or attractiveness of capital market instruments relative to other investment options. Alternatively, it may indicate that higher interest rates are associated with more active or developed financial markets.

The R-squared (0.612832) and Adjusted R-squared (0.575060) indicate good fit. About 61% of the variation in MCAP is explained by the variation in the independent variables.

Conclusions

This study investigates the impact of financial inclusion on capital market development in Nigeria for the period 1986 to 2022. The scope of the study is limited to barely thirty six observations as a result of the available data in Nigeria on financial inclusion. The conclusions which are drawn in this study are based on the magnitude and signs of the coefficients that arise from the cointegrating regression test that is conducted.

The development of capital market in Nigeria is greatly influenced by financial inclusion variables like interest rates, the number of microfinance banks, rural deposits, and rural lending. number of Microfinance banks are important as they leads to increase in access to financial services and mobilization of deposits from underserved populations, which tends to enlarge capital market development. interest rates have a positive impact on capital market involvement by offering incentives for saving and investing; and rural deposits contribute by expanding the savings pool from rural areas, which supports capital market growth. Overall, the study emphasizes that maintaining favorable interest rates and expanding financial inclusion—particularly through microfinance institutions and rural financial activities—are essential for the growth and depth of capital markets.

RECOMMENDATION

Based on the findings, this study recommended the following;

1. Government through the Central Bank of Nigeria should promote and support the expansion of microfinance institutions as a key strategy to enhance financial inclusion, which in turn positively contributes to the development of capital markets. This could involve creating favorable regulatory frameworks, providing capacity-building programs, and facilitating access to funding for microfinance providers to broaden their reach and effectiveness. By doing so, more individuals and small businesses can participate in financial activities, which helps deepen and diversify capital markets, fostering overall economic growth.
2. The CBN should promote policies and programs that increase the availability of credit in rural areas, enabling more individuals and small businesses to participate in economic activities that contribute to capital markets.
3. Government should develop initiatives to boost rural deposits by creating accessible and attractive savings products, thereby increasing the capital base available for investment in capital markets.
4. Interest rates should be maintained at levels that encourage saving and borrowing without discouraging participation in the financial system, as positive interest rates support financial inclusion and capital market growth.
5. Financial education should be Implement to help rural populations and micro-entrepreneurs understand and utilize financial services effectively, thereby maximizing the benefits of inclusion on capital markets.
6. The CBN should ensure a supportive regulatory environment that protects consumers and encourages innovation among financial service providers, fostering confidence and participation in both financial inclusion and capital markets.

REFERENCES

Abdullahi, H. & Oladipo, O. (2022) The impact of banking and capital market financial inclusion on economic development in Nigeria. *Journal of Global Economics and Business, 3(10), 91-119.*

Adesanya, B. M., Adediji, A. M., & Okenna, N. P. (2020). Stock exchange market activities and Economic Development: Evidence from the Nigerian economy. *Bingham Journal of Economics and Allied Studies (BJEAS)*, 4(2), 231-245.

Agya, A. A.; Ojiya, E. A. & Eshidenang, H. U. (2022) Financial inclusion and economic growth in Nigeria: Further Evidence from ARDL Model. *NDIC Quarterly 38(1).*

Babajide, A., Adegboye, F., & Omankhanlen, A. (2015). Financial Inclusion and Economic Growth in Nigeria. *International Journal of Economics and Financial Issues*, 5(3), 629-637.

Briggs, A. P. (2015). Capital Market and Economic Growth of Nigeria. *Research Journal of Finance and Accounting*, 6(9), 82-95.

Gani, I. M., & Ibrahim, S. S. (2015). Capital Market Development and Economic Growth: Evidence from Nigeria. *International Journal of Social Sciences and Humanities Research*, 3(5), 22-32.

Garcia-Herero, A., & Turegano, D. M. (2015). Financial Inclusion, Rather than Size, is the Key to tackling Income Inequality. *BBVA Research Working Paper*, 1-24.

Gourene, G. A., & Mendy, P. (2019). Financial inclusion and economic growth in WAEMU: A multiscale heterogenity panel causality approach. *Theoretical economics letters*, 477-488 (9).

Ibrahim, S. S., & Aliero, H. I. (2020). Testing the Impact of Financial Inclusion on Income Covergence: Evidence from Nigeria. *African Developement Review*, 42-54.

Kama, U., & Adigun, M. (2013). Financial Inclusion in Nigeria: Issues and Challenges. *Central Bank of Nigeria*, 45.

Le, T.-H., Chuc, A. T., & Taghizadeh-Hesary, F. (2019). Financial Inclusion and its Impact on Financial Efficiency and Sustainability: Empirical Evidence from Asia. *Borsa Instanbul Review*, (19)(4) 310-322.

Lenka, S. K. & Barik, R. (2018). Has expansion of mobile phone and internet use spurred financial inclusion in the SAARC countries? *Financial Innovation. 4 (5): 278-293.*

NAICOM, N. I. (2019). Market statistical Publication. *Naicom.gov.ng*.

Nguemnang, Y. R., & Roger, T. N. (2020). Remittance, Financial Inclusion and Income Inequality. *Munich Personal RePEc Archive*.

Nwafor, M. C., & Israel, A. (2018). The nexus between financial inclusion and economic growth: Evidence from Nigeria. *International journal of research and innovation in social science*, 7 (2)(4).

Obubu, M., Konwe, C., Nwabenu, D., Omokri, P. A., & Chijioke, M. (2016). Evaluation of the Contribution of the Nigerian Stock Market on Economic Growth; Regression Approach. *European Journal of Statistics and Probability*, 4(5), 11-27. 14 (22).

Okoye, L. U., Modebe, N. J., & Okorie, U. E. (2016). Capital Market ·Development and Economic Growth - The Case of Nigeria. *Institutional Frameworks, Building and National Development (IFIJND)*, 10-12.

Ologunwa, O. P., & Sadibo, O. V. (2016). Capital Market Development and Economic Growth in Nigeria: An Empirical Analysis. *FUTA Journal of Management and Technology Maiden Edition*, 48-59.

Ong-A-Kwie-Jurgens, N. (2016). Identifying the Constraints to Financial Inclusion and their Impacts on GDP and Inequality: A case of Suriname. *Central Bank of Suriname*, 1-29.

Onuora, O. G. (2019). Effect of Capital Market on Economic Growth and Development in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 9(2), 211-220. DOI: 10.6007/IJARBSS/v9-i2/5535.

Otinga, N.K, Obi, P & Mugo-Wawerua, F (2025) The conditional effect of fintech on the linkage between financial inclusion and capital market development *Cogent Economics & Finance* 13(1, 2541264) https://doi.org/10.1080/23322039.2025. 2541264

Oyadeyi, O. O. (2025) Financial development, financial inclusion and the effectiveness of monetary policy transmission mechanism in Africa. Borsa Istanbul Review xxx (xxxx) xxx

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability, *Borsa Istanbul Review. 18 (4), 329-340.*

Ratnawati, K. (2020). The impact of financial inclusion on economic growth, poverty, income inequality and financial stability in Asia. *Journal of Asian finance economics and business*, 73-85 (7)(10).

Saab, G. (2017). Financial Inclusion and Growth. *The Business Management Rewiew*, 8(4).

Sarma, M., & Pais, J. (2011). Financial Inclusion and Development. *Journal of International Development*, 23(5), 613–628.

Schumpeter, J. (1911). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle.* Cambridge: Havard University Press.

SEC, S. a. (2021). Statistical Bulleting. *sec.gov.ng. The impact of banking and capital market financial inclusion on economic development in Nigeria*

Taiwo, J., Alaka, A., & Afieroho, E. O. (2016). Capital Market and Economic Growth in Nigeria. *Account and Financial Management Journal*, 1(6), 497-525.

Tita, A. F., & Aziakpono, M. J. (2019). The Relationship between Financial Inclusion and Income Inequality in Sub-Saharan Africa: Evidence from Disagregated Dtat. *African Review of Economics and Finance*, 30-65 (9) 2. *Group*.

Yorulmaz, R. (2012). Financial Inclusion and Economic Development: A case study of Turkey and a cross country analysis of the European Union. *A thesis submitted to Clemson University*, 64.

Young-Park, C., & Mercado, R. (2018). Financial Inclusion, Poverty and Income Inequality. *Singapore Economic Review*, 63(1).

Zia, I. Z., & Prasetyo, E. (2018). Analysis of Financial Inclusion Toward Poverty and Income Inequality. *Jurnal Ekonomi Pembangunan*, 19(1), 114-125.

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]