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IMPACT OF FINANCIAL DEVELOPMENT ON SUSTAINABLE ECONOMIC GROWTH IN NIGERIA

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ABSTRACT: *The development of the financial sector in Nigeria has not been very successful, thus limiting access to financial services and impeding the process of sustainable economic growth. Despite the fact that digital banking, mobile payments, and financial innovations have made significant progress, the Nigeria still faces challenges in financial inclusion and the efficiency of financial intermediation. This study examined the impact of financial development on sustainable economic growth in Nigeria from 1986 to 2023, employing the Vector Error Correction Model to analyze the data that were sourced from the World Development Indicators and the Central Bank of Nigeria Statistical Bulletin. The result of the Johansen cointegration test revealed a long run relationship among the variables. The results revealed that FinTech, financial inclusion, institutional quality, and literacy rate significantly enhanced economic growth, while financial deepening and government expenditure had positive but insignificant impact on sustainable economic growth. On the other hand, urbanization had negative and insignificant impact, while inflation rate exerted negative but significant impact. For Nigeria to achieve sustainable economic growth, it needs to widen access to finance, enhance the quality of institutions, support the use of technology in finance, increase the public's understanding of finance, and support the macroeconomic environment with appropriate monetary and fiscal policies. Furthermore, the development of new financial products, good urban planning and strict regulatory supervision are very necessary to drive financial intermediation efficiency and, consequently, the maximization of the financial sector's growth impact.*

KEYWORDS: Financial Development, Financial Deepening, Financial Innovation, Sustainable Economic Growth, Nigeria.

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INTRODUCTION

Concerns about the environment that emphasize the significance of sustainable economic growth are one of the most effective ways of increasing productivity while lessening the environmental negative impacts. Sustainable economic growth is a combination of three economic, social, and environmental aspects, concentrating on the generation of new opportunities for wealth production, poverty alleviation, and nature conservation (Organisation for Economic Co-operation and Development (OECD), 2024; Babajide et al., 2015). It does not only balance the goals of the short-run economy with the ecological and social health of the future, but it also places the main emphases on the principles of efficiency, equity, and resilience. The demand for sustainable economic growth is reflected in the United Nations' Sustainable Development Goal 8 that states - "to sustain, promote inclusion and sustain economic growth, productive employment, and decent work for all (OECD, 2024; van Niekerk, 2020; Cevik, 2024). In the current research, sustainable economic growth uses adjusted net savings as a measure of sustainable economic growth. Thus, it is a shift from the conventional ways of measuring sustainable economic growth.

Adjusted Net Savings (ANS) in this regard is considered the most theoretically and empirically consistent indicator that most closely corresponds to the criteria of non-decreasing total wealth of a given country over time, which is a basic requirement of sustainable development. Its analytical power comes from capital theory, which offers a consistent structure for evaluating the changes in a country's wealth (World Bank, 2021). Adjusted net savings is calculated by subtracting the depreciation of produced capital, the depletion of natural resources, and the expenses resulting from the pollution of the environment and, at the same time, by adding the investments in human capital formation. Such a measure, which links the economic, environmental and human aspects, makes adjusted net savings a better instrument for assessing the sustainability of development paths than traditional indicators. (World Bank, 2021; Hamilton & Hartwick, 2014). Adjusted net savings that are positive mean that there is wealth creation for future generations, while when they are negative, it means the use of resources is not sustainable (Greggio et al., 2022; Polasky et al., 2019). In contrast, Nigeria's adjusted net savings have been unstable and often negative, indicating reliance on resources, environmental decline, and lack of investment in people (World Bank, 2023).

In this context, the financial sector can play a pivotal role in the achievement of the sustainable economic growth. A well-developed financial system is foundational to the growth of any nation as it contributes significantly to raise savings and investment rate (Becsi and Wang, 1997; van Niekerk, 2020; Cevik, 2024). The tenth target of sustainable development goals (SDG 8) equally underscores the importance of strengthening the capacity of domestic financial institutions to expand access to financial services for all, as well as advancement of technological innovations. In addition, equitable access to financial services can reduce economic disparities (SDG 10) and reduce poverty (SDG 1). Equally, financial institutions can support industrial development, innovation, and infrastructure projects by providing funding and financial services for the development of sustainable and resilient infrastructure, the support of inclusive and environmentally friendly industrialization, and the encouragement of innovation, in accordance with SDG 9 (OECD, 2024; World Bank, 2020; Daniel & Kindai, 2024).

In particular, financial development is fostering financial inclusion, thus enabling faster transactions, and promoting economic activities, particularly among underserved populations

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(Demirgüç-Kunt & Klapper, 2013; Isibor et al., 2018; PricewaterhouseCoopers, PwC, 2018). Presently, financial inclusion has opened the doors for millions of people to obtain financial services, including loans and savings which might have been denied to them previously because of insufficient resources (World Bank, 2019; Omisakin, 2021; Central Bank of Nigeria, CBN, 2022). Financial development has also led to financial deepening, which is characterized by increased access to financial services, contributing to capital formation and economic diversification, which are essential for sustainable development (Beck & Levine, 2004; Folorunso, 2016; Prasad et al., 2023; Elumah & Muritala, 2023). At the same time, the supply-leading hypothesis suggests that the existence of efficient financial markets raises the supply of financial services before the actual demand occurs in the real sector of the economy. This hypothesis is supported by empirical evidence that the financial institutions that function well have been the reason behind financial deepening (World Bank, 2023; National Bureau of Statistics, 2022; Sy et al., 2019; Sagir et al., 2023). Furthermore, financial technology (fintech) has rapidly transformed Nigeria's financial landscape, enabling expanded access to financial services and greater efficiency. Between 2022 and 2023, mobile money transactions increased by more than 50%, making Nigeria one of Africa's fastest-growing fintech markets (CBN, 2023; PricewaterhouseCoopers [PwC], 2023).

Despite the significance of financial sector development, the degree of financial inclusion in Nigeria has raised concerns since a large number of people were unable to obtain loans for businesses and personal use; thus, the total amount of money saved in banks and the level of participation in the use of electronic-based transactions have been limited. Statistics have it that, as at the last quarter of 2022, only 64% of the population have access to finance that is financially included. This has shown that larger proportion of Nigerian adults is still financially excluded. Since many are financially excluded, the rate of poverty has continued to increase. According to NBS (2022), 63% of persons living within Nigeria (133 million people) are multi-dimensionally poor. Although, the financial deepening indicator, that is, credit to private sector has been increasing year in year out, the rate as a percentage of GDP is still very low compared to the rate from some countries in Africa. For instance, the domestic credit to private sector in Nigeria stands at 8.4% in 2005, 10.6% in 2012 and 14.1% in 2022. However, the rate in 2005 was 26.3% for Kenya, and 31.5% in 2022, while for South Africa, the rate was 122.3% in 2005 and 92.2% in 2022 (CBN, 2023). This clearly shows that Nigeria still lags behind in prioritizing the private sector which has the potential to stimulate the growth of the economy at a faster pace. Owing to the fact that many adults, and potential investors are still financially excluded, there is reduction in investments that would have been made by the citizens, which also has the potential of increasing output and improve the standard of living of people.

To strengthen the financial system, the government has introduced several policy initiatives, including the National Financial Inclusion Strategy (2012; revised 2022), the Payments System Vision 2025, and the National Digital Economy Policy and Strategy (2020–2030). These initiatives aim to reduce financial exclusion, deepen financial intermediation, and accelerate the adoption of digital financial services (CBN, 2023). However, despite the efforts of the government to ensure that financial development contributes to the sustainable economic growth of the country, the adoption of this initiative is still low, as 1 in 3 adults are still financially excluded. This means that about 47.6 million Nigerian adults still remain unbanked as at 2022 (Enhancing Financial Innovation and Access, 2022). It is against this background that this study examines the impact of financial development on sustainable economic growth in Nigeria.

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LITERATURE REVIEW

Conceptual Clarifications

Bank-Ola et al. (2023) defined financial development as improvement in the size, efficiency, and stability of the financial system which, along with prudent monetary policy, can lead to economic growth. They underscored how the progress in financial development—beyond expanded credit or money supply but through improvements in market depth, institutional competence, and systemic steadiness—creates the environment that makes long-term growth feasible. The World Bank (2022) conceptualised financial development as the process through which financial instruments, markets, and intermediaries become more effective at easing the frictions that arise from information gaps, enforcement challenges, and transaction costs in an economy. This in practical terms signifies that the financial system's development changes in a way that it is able to use information with better accuracy, it is more reliable in contract enforcement, and it is cheaper and more efficient in transactions. A smoother functioning of the financial industry allows it to undertake effectively its primary duties — collecting and distributing savings, directing the flow of funds to where they are needed most, allowing people and businesses to mitigate their risks, and maintaining the uninterrupted transfer of products and services. The increase in function leads to an increase in economic activity, an increase in investment and innovation, and an increase in the overall distribution of capital in the economy.

Ogunleye (2022) defined sustainable economic growth as the uninterrupted and inclusive increase in a nation's productive capacity, through which the economic policies assure the rise of the living standards, environmental preservation, and resource utilization to the maximum. It was emphasised that, sustainable economic growth needs the local resources to be exploited, the technologies to be rendered innovative, and the structural problems such as unemployment and inequality to be dealt with in order to strike a balance between present needs and future opportunities. Omoke and Opuala-Charles (2021) viewed sustainable economic growth as a process that is molded by opening of trade and quality of institution. They maintained that better governance and institutional setting are the means to convert the benefits of trade into long-term economic development. Their investigation indicated that sustainable economic growth is characterized by the maintenance of a high level of GDP, at the same time ensuring that the growth is inclusive and not harmful to future generations.

Jackson (2021) offered a definition of sustainable economic growth that is a kind of economic activity that does not disturb the ecological balance, allows human beings to thrive, and the planet to be resilient to global stressors. He questioned mainly the traditional growth models that mainly look at GDP increase as a continuous process, by taking all environmental and social costs as externalities. For him, sustainable growth is a matter of re-designing of societal objectives and stimulating the innovation that will be advantageous to both the earth and the people.

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Review of Empirical Literature

To examine the long-term relationship between financial development (FDEVT) and economic performance in Nigeria between 1994 and 2023, Mogbo (2025) employed autoregressive distributed lag model (ARDL) and cointegration analysis. The study's findings pointed out that FDEVT positively influenced economic growth, but the financial infrastructure impact was the only one that was statistically significant. This means that access to banking services played a positive role in the finance-growth relationship. Adebayo (2025) used the ARDL model to assess the impact of FDEVT on Nigerian economic growth from 1981 to 2023. Based on the empirical findings, the FDEVT index was found to have no considerable impact on growth in both the short- and long-term periods. On the other hand, the labour force was reported to have positive impact. Oji (2025) investigated financial deepening (FDEEP) and Nigeria's economic growth from 1990 to 2023. Multiple regressions with Granger causality were employed as data analysis tools. It was discovered that broad money supply (M2) and credit to private sector (CPS) had a positive impact on Nigeria's economic growth, whereas national savings, capitalisation, and interest rates had a negative impact. Similarly, the causality test identified a bidirectional relationship.

Tidjani and Madouri (2024) conducted a thorough examination of the interactions between financial inclusion (FI), fintech, and sustainable development in Africa. Data from 25 countries in Africa over the years 2011 to 2019 were analyzed, using dynamic panel methods (two-step SGMM) and static panel approaches. The results confirmed negative and insignificant impact of FI and fintech on development. Echu et al. (2024) investigated the role of digital finance in promoting sustainable development in the Nigerian economy. To achieve the study's goals, a positivist approach was taken with a sample of 384 respondents. The data was analyzed through regression analysis and the results found considerable effect on sustaining the development of Nigeria. Samuel et al. (2024) analyzed the effect of FinTech on the economic growth and inclusion of Nigeria in their research for the period of 1999 to 2020. They used the Johansen test for cointegration, Granger non-causality test, and the Toda–Yamamoto procedure to find the relationships among the three variables. Their findings pointed out that FinTech through the reduction of income inequality and poverty was a factor in the growth of both economic and financial sectors. Moreover, the study confirmed the presence of unidirectional, bidirectional, and feedback causality among the variables.

Daniel and Kindai (2024) conducted an exploration of the role of fintech in Nigeria's economic growth using the years 2000 to 2022 as their time frame. The research utilized the restricted error correction model (ECM) and identified a long-run relationship among the variables. The findings indicated that the economic growth rate depended on the amount of automated teller machines (ATMs), point of sales (POS), and mobile transfer channels. On the contrary, online payments and NEF transfers had a significant negative impact on growth. Oyadeyi (2024) analyzed the impact of FI and banking innovation on economic growth in Nigeria, based on monthly and quarterly data collected during the period from 2009 to 2021. The research helped to extend the existing literature by the application of mixed data sampling (MIDAS) method in combination with the ARDL model. The findings revealed that ATM and mobile transactions positively impacted economic growth. Ogagaoghene et al. (2024) used time series data from 2003–2023 to empirically assess the impact of financial deepening (FDEEP) variables on the growth of the economy. The impact was tested using multiple regressions and descriptive analysis. The findings showed that interest rates, the size of the stock market capitalisation, the M2, and CPS all significantly and favourably impacted Nigeria's economic growth. Using OLS

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regression techniques, Ukoh (2024) investigated how FDEEP affected Nigeria's economic growth between 1999 and 2022. The study indicated that M2 had a significant and positive relationship, while there was a significant and positive relationship between CPS and economic development in Nigeria.

Similarly, Saramu et al. (2024) carried out a study on the same topic, the FI's impact on the economy of Nigeria, through an ex-post facto research design. Annual time series data from 2001 to 2021 were obtained, and the results indicated a positive and statistically significant link between CPS and economic growth, whereas ATM transactions showed a positive but not statistically significant link with economic growth. Okon et al. (2023) reviewed the effect of FI and fintech on economic development in Nigeria using quarterly data from 2009Q1 to 2019Q4. Applying the ARDL model, the results showed that investments in fintech had a positive and significant effect on growth, while ATM usage was found to have a negative and statistically significant impact. Zuo (2023) conducted a study on the role of fintech in the economic development of China through a fixed-effects panel data model which included data from 2011 to 2020. The research took into consideration GDP as influenced by factors like the fintech index, fiscal expenditure to GDP ratio, industrial output to GDP ratio, labor force, education, and urbanization. The results indicated that China's economic growth and development was significantly enhanced by fintech adoption. Agya et al. (2022) examined the effect FI on Nigeria's economic development by means of annual time series data covering the years 1980 to 2019, using ARDL method. The results showed that FI, human capital, and investment were the main contributors to economic growth in both the short and long term.

Noor et al. (2020) investigated the relationships between FI, financial literacy, and FinTech in Indonesia's economy. The research was conducted by reviewing thirty journals and reports, and it concluded that demographic variables like sex, age, level of education, and occupation played a role in the progression of financial inclusion, literacy, and technology adoption. The study, which took into account the wider picture of FinTech's impact, used the provincial data of China from 2011 to 2018 to reveal the FinTech innovation and green finance as the major factors positively contributing to the green economic growth while the regions experienced insignificant impacts. Salami and Oluseyi (2013) examined the impact of financial sector development on the Nigerian economic growth in Nigeria. The OLS method was employed and the study found that only the real interest rate was negatively related and all the explanatory variables were statistically insignificant.

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METHODOLOGY

Model Specification

This study adapts and modifies the model of Salami and Oluseyi (2013). The model was adapted because some of the variables of this study were included in their model and they are good in explaining the relationship between financial development and sustainable economic growth in Nigeria. The model of Salami and Oluseyi (2013) adapted for this study is thus specified functionally as;

$$RGDP = f\ (M2GDP, RINTR, CRGDP) \qquad 3.1$$

Where, GDP = Real Gross Domestic Product; M2GDP = Percentage on money supply to GDP; CRGDP = Credit to private sector as a share of GDP. This current study therefore modifies the model and it is stated as;

$$ADNS = f\ (\ FI, FD, FINTEC, URBN, LITR, INSQ, GOVEXP, INF) \qquad 3.2$$

Where, ADNS = Adjusted net savings, proxy for sustainable economic growth; FI = Financial inclusion, proxied with financial institutions access index; FD = Financial deepening, proxied by credit to private sector; FINTEC = Financial technology, proxied with financial technology index; URBN = Urbanisation; LITR = Literacy rate; INSQ = Institutional quality; GOVEXP = Government expenditure (proxy as total government expenditure as a % of GDP); INF = Inflation rate. The model can be expressed econometrically as in equation 3.3.

$$\begin{aligned} \mathrm{ADNS}_t = {} & \beta_0 + \beta_1 \mathrm{FINTEC}_{t-1} + \beta_2 \mathrm{FI}_{t-1} + \beta_3 \mathrm{FD}_{t-1} + \beta_4 \mathrm{URBN}_{t-1} + \beta_5 LITR_{t-1} \\ & + \beta_6 \mathrm{INSQ}_{t-1} + \beta_7 GOVEXP_{t-1} + \beta_8 INF_{t-1} \\ & + \mu_t \qquad 3.3 \end{aligned}$$

Where, t-1 is the lagged value of the variables; ln = Natural logarithm; μ_t is the stochastic error terms which explain other variables that cannot be captured in the model; β_0, β_1 to β_8 are the slopes of the coefficients.

Estimation Techniques and Procedure

This section discusses the estimation technique employed to measure our variables and the procedures taken to do this. The study adopted the Vector Error Correction Model (VECM) for the models which were used to estimate the parameters. The VECM model employed in this study is efficient in establishing significant relationship, elasticity and impact between the variables of the study. The time series data in the study was tested for stationarity using the Augmented Dickey-Fuller (ADF) unit root test. The long-term relationship between the dependent and independent variables was also examined using Johansen co-integration.

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DATA PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS

Presentation and Interpretation of Results

Stationarity Test

This subsection tests the unit root. The data series used in this study are often nonstationary, and hence the ADF unit root test was applied to check their stationarity. This test is indispensable in order to avoid inaccurate results. Therefore, the outcome is shown in Table 1.

Table 1: Summary of the ADF and Structural Break Unit Root Tests

Variables	ADF Statistic	ADF Critical Value @5%	Structural Break ADF Statistic	Structural Break Critical Value @5%	Order of Integration	Remark
ADNS	-7.7369	-2.9458	-9.0579	-4.4436	I(1)	Stationary
FINTEC	-6.9008	-2.9458	-8.5575	-4.4436	I(1)	Stationary
FI	-7.2928	-2.9458	-8.1906	-4.4436	I(1)	Stationary
FD	-4.3732	-2.9458	-7.1795	-4.4436	I(1)	Stationary
GOVEXP	-9.3482	-2.9458	-10.9681	-4.4436	I(1)	Stationary
LITR	-4.8062	-2.9458	-78.0469	-4.4436	I(1)	Stationary
INSQ	-6.1024	-2.9458	-14.9315	-4.4436	I(1)	Stationary
INF	-5.8783	-2.9604	-7.3977	-4.4436	I(1)	Stationary
URBN	-3.4381	-2.9458	-8.5565	-4.4436	I(1)	Stationary

Source: *Author's Compilation using Eviews 13.0*

The ADF and structural break tests verified that all the variables such as, adjusted net savings (ADNS), financial technology (FINTEC), financial inclusion (FI), financial deepening (FD), government expenditure (GOVEXP), literacy rate (LITR), institutional quality (INSQ), inflation rate (INF) and urbanization (URBN), were non-stationary at level but stationary after first differencing, meaning they are integrated of order one [I(1)]. The ADF statistics for the structural break were more negative than the 5% critical values, so even accounting for shocks or policy changes, the series still required first difference for stationarity. Therefore, the I(1) nature of the variables was consistent in both the standard and break-adjusted tests, which satisfied the requirement for cointegration analysis that variables must be integrated of the same order.

Lag Length Selection

This section presents the appropriate lag length for this study before estimating the long and short run coefficients of the model.

Table 2: Summary of VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-283.4145	NA	9.18e-05	16.24525	16.64113	16.38342
1	13.37248	428.6923	6.53e-10	1.257085*	8.215882*	5.638811
2	136.1106	115.9193*	1.63e-10*	4.938302	9.460017	4.563582*

Source: *Author's Compilation using Eviews 13.0*

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The results from the on Table 2 show that the optimal lag length is 1, as evidenced by the lowest values of the Akaike Information Criterion (AIC) at this lag. This indicates that incorporating one lag reflects an appropriate balance between model complexity and goodness of fit.

Johansen Cointegration Test

Following the determination of the variables' order of integration, the Johansen test was used to assess whether a long-term relationship exists among the variables. Table 3 displays the outcomes of the test.

Table 3: Summary Result of the Johansen Cointegration Test

Hypothesized No of CE(s)	Eigenvalue	Trace statistic	Critical value @ 5%	Max-Eigen statistic	Critical value @ 5%
None *	0.937518	337.7166	197.3709	99.82360	58.43354
At most 1 *	0.907651	237.8930	159.5297	85.75834	52.36261
At most 2 *	0.706285	152.1347	125.6154	44.10525	46.23142
At most 3 *	0.672421	108.0294	95.75366	40.17695	40.07757
At most 4	0.537978	67.85247	69.81889	27.79717	33.87687
At most 5	0.380929	40.05530	47.85613	17.26329	27.58434
At most 6	0.285851	22.79202	29.79707	12.11991	21.13162
At most 7	0.254255	10.67211	15.49471	10.56140	14.26460
At most 8	0.003070	0.110707	3.841465	0.110707	3.841465

Source: *Author's Compilation using Eviews 13.0*

Vector Error Correction Mechanism (VECM)

In order to assess the simultaneous dynamic interaction of a group of variables without imposing strict limitations to uncover the underlying structural parameters, the VECM was performed. The result is reported in Table 4.

Table 4: Summary of Vector Error Correction Result

	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ1	-0.421906	0.281679	-4.611090	0.0000
D(ADNS(-1))	0.353549	0.195442	3.808970	0.0008
D(FI(-1))	0.564291	0.237537	4.375156	0.0005
D(FD(-1))	0.116667	0.718963	0.162271	0.8712
D(FINTEC(-1))	0.755589	0.614425	3.229750	0.0051
D(INSQ(-1))	0.009907	0.017055	3.580888	0.0019
D(LITR(-1))	0.010183	0.033198	5.306722	0.0000
D(URBN(-1))	-0.041395	0.331343	-0.124932	0.9007
D(GOVEXP(-1))	0.033076	0.028668	1.153775	0.2498

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D(INF(-1))	-0.001323	0.006355	-4.208231	0.0006
C	0.419572	0.293970	3.208275	0.0050
R-squared	0.733361	F-statistic		7.760989
Adjusted R-squared	0.673294			
S.E. of regression	0.214299			
Durbin-Watson stat	1.889123			

Source: *Author's Compilation using Eviews 13.0*

From the result in Table 4, the constant value is 0.4196 and it suggests that if all the variables are held constant or fixed (zero), sustainable economic growth will be valued at 0.42. The coefficient of the lagged value of ADNS is 0.3535 and it implies that 1 per cent increase in the lagged one value of ADNS will increase its present value by 0.35%. The coefficients of FI, FD, FINTEC, INSQ, LITR and GOVEXP are 0.5643, 0.1167, 0.7556, 0.0099, 0.0102 and 0.0331, implying that a 1% increase in FI, FD, FINTEC, INSQ, LITR and GOVEXP increase sustainable economic growth by 0.56%, 0.12%, 0.76%, 0.009%, 0.010% and 0.033% respectively. Contrarily, URBN and INF has negative impact as 1% increase in URBN and INF decrease sustainable economic growth by 0.041% and 0.0013% respectively. The results further show that FI, FINTEC, INSQ, LITR, and INF are statistically significant, while FD, URBN and GOVEXP are statistically insignificant. The cointegrating term (COINTEQ1) is -0.422, indicating that 42% of deviations from the long-run equilibrium are corrected in each period. From the result, R^2 of 0.733 shows that about 73 percent of the variations in ADNS are explained by FI, FD, FINTEC, INSQ, LITR, URBN, GOVEXP and INF while the remaining 27 percent can be attributed to other variables which influence ADNS but are captured by error term. The percentage is quite high and it shows out model is a good fit. The F-calculated of 7.7609 is greater than F-tabulated (2.42), hence, the study rejects the null hypothesis (H_0). It implies that the model is properly specified and that the independent variables have a joint significant effect on the dependent variable. The Durbin-Watson statistic is approximately 2, suggesting the absence of autocorrelation. This suggests that the model is adequately specified, and the errors are independently distributed. This result enhances the reliability of the regression estimates.

Post-Estimation Tests

Table 5: Summary of Serial Correlation Test

Lag	LRE* stat	Df	Prob.	Rao F-stat	Df	Prob.
1	97.43478	81	0.1030	1.232170	(81, 60.7)	0.1977
2	73.30441	81	0.7164	0.808047	(81, 60.7)	0.8159

Source: *Researcher's Compilation Using Eviews 13.0*

The VEC Residual Serial Correlation LM Test result in Table 5 shows that for lags 1 and 2, there exists no serial correlation because all the p-values (0.1977, 0.1859) are significantly larger than 0.05. The test for lags 1-2 also reveals that there is no serial correlation, and the model residuals are uncorrelated and aligned with the white noise assumption, which is necessary for valid estimation and inference.

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Table 6: Summary of Heteroscedasticity Test

Joint test:

Chi-sq	Df	Prob.
134.9219	214	0.7914

Source: *Researcher's Compilation Using Eviews 13.0*

From the result in Table 6, the probability value is equal to 0.7914, which indicates that the significance level of the probability F statistic exceeds 0.05 percent. As a result, the study accepts the null hypothesis, according to which the data may be trusted to be predictive because the model does not exhibit heteroscedasticity in the residuals.

Table 7: Summary of Normality Test

Component	Jarque-Bera	df	Prob.
1	0.797201	2	0.6713
2	156.5108	2	0.0000
3	6.058691	2	0.0483
4	0.604707	2	0.7391
5	1.300262	2	0.5220
6	7.887105	2	0.0194
7	0.350052	2	0.8394
8	19.23059	2	0.0001
9	2.601559	2	0.2723
Joint	195.3410	18	0.7721

Source: *Researcher's Compilation Using Eviews 13.0*

From the results in Table 7, the joint probability value of 0.7721 is derived from normality tests conducted on the residuals of the models. Since the value is greater than the 5% significance level (0.05), it indicates that the null hypothesis of normality cannot be rejected. This suggests that the residuals of the models follow a normal distribution, an important assumption in econometric modeling.

DISCUSSION OF FINDINGS

The findings from the VECM model provides a clear understanding of the relationship between financial development and sustainable economic growth in Nigeria. The positive coefficients for financial inclusion (FI), financial technology (FINTEC) and literacy rate (LITR), all statistically significant, were as expected from a priori economic theory, which posits that improvements in technological and structural aspects of the financial structure should enhance growth. The result for FINTEC supports the position of Echu et al. (2024) and related studies

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citing how technology has transformed economic performance, while the role of financial inclusion agrees with the studies of Tidjani and Madouri (2024) and Samuel et al. (2024), who noted that the provision of inclusive financial services increases financial intermediation efficiency and thereby encourages broader participation in economic activities. The positive but modest role of financial deepening affirms earlier work by Salami and Oluseyi (2013) on the importance of monetary expansion. The negative and statistically significant coefficient of inflation is in line with economic theory as well as a priori expectation that persistent inflation erodes purchasing power, destabilizes investment, and discourages growth. On the other hand, the adverse but insignificant impact of urbanization shows that while Nigeria has experienced rapid urban expansion, which has not translated into tangible productivity gains, a fact which differs from Zuo (2023), who found a strong positive correlation between sustainable economic growth and urbanization. This divergence may be attributed to structural urban inefficiencies, poor planning, and the predominance of informal economies in Nigerian cities that negate the growth potential offered by urbanization. Institutional quality (INSQ) shows a positive and significant but extremely small impact, a reflection of Nigeria's weak institutional framework under which the governance inefficiencies, corruption, and enforcement gaps collectively undermine the growth potentials that may accrue from institutions. This finding is partially aligned with the findings of Noor et al. (2020), who argued that institutional and human capital indicators reflect an inability to cause growth when faced with structural bottlenecks.

CONCLUSION AND POLICY RECOMMENDATIONS

The study examines the impact of financial development on sustainable economic growth in Nigeria for the period 1986 to 2023, using VECM approach of analysis. The study concluded that financial development played a crucial role in influencing economic growth in Nigeria. The empirical evidence supported the view that the relationship between financial innovation, institutional quality, financial inclusion, and government spending has both direct and indirect implications for sustainable development outcomes. The analysis across the models demonstrated that while some variables enhanced macroeconomic performance and welfare, others revealed structural and functional inefficiencies that may limit their effectiveness in delivering inclusive growth and poverty alleviation if not properly managed. It indicates that the development of the financial sector has the potential to transform the economy by driving output growth, improving access to financial services, and reducing poverty.

Based on the findings, it is recommended that;

i. In order to significantly enhance the positive impacts of financial inclusion on sustainable economic growth, the CBN in collaboration with fintech companies and commercial banks needs to expand digital financial services through mobile banking and agent networks, improving financial literacy initiatives to provide education for the underserved, empowering microfinance institutions to provide credit at reasonable interest rates, leveraging national identity systems to reduce account-opening barriers, and promoting gender-inclusive policies to broaden women's access to finance. These measures will see more businesses and people benefit from the formal financial system, developing the economy and help reducing poverty.

ii. To consolidate the beneficial effect of financial deepening on sustainable economic growth, Credit Bureau Association of Nigeria and the CBN need to spur the development of the capital market by introducing new innovative financial instruments, creating regulatory framework to

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support the non-bank financial institutions, enhancing credit reporting mechanisms to increase credit access, promoting public-private partnerships for financing infrastructure projects, and fostering financial innovation through alternative financing options such as peer-to-peer lending and crowdfunding. These actions will further entrench the financial sector, increase resource allocation, and support long-term economic growth.

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