ANALYSIS OF INSECURITY, LABOUR FORCE, CAPITAL STOCK AND ECONOMIC GROWTH NEXUS IN NIGERIA

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ABSTRACT
This study examines the interrelationship between insecurity, the labour force, capital stock, and economic growth in Nigeria, a nation facing complex socio-economic challenges. The primary objective is to analyze how these factors interact and influence economic growth. The study employs an Autoregressive Distributed Lag (ARDL) model to examine the relationship between the variables, after confirming their order of integration through an ex-ante analysis, which shows a mix of I(1) and I(0) processes. The ARDL model bound test confirms cointegration among the variables at the 1% significance level, suggesting that the Nigerian economy can recover from short-term shocks and reach equilibrium over time. The findings reveal that, in the short run, insecurity and capital stock do not significantly impact economic growth, while labour force participation has a positive and statistically significant influence. The speed of adjustment is slow, with a negative and significant coefficient of -0.038908, indicating the need for more immediate policy interventions to facilitate a quicker return to equilibrium. Key recommendations based on these findings include prioritizing national security and increasing labour force participation, particularly among youth, women, and rural populations, through education and skill development programs. However, the government should implement policies to enhance capital stock by improving infrastructure, fostering foreign direct investment (FDI), and enhancing access to affordable credit for small and medium-sized enterprises (SMEs). These actions will stimulate private sector growth and contribute to long-term economic development.
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1. INTRODUCTION
Over the past few decades, Nigeria's economic growth has been hampered by persistent insecurity, a fluctuating labour market, and varying levels of capital stock. Nigeria, Africa's most populous nation and one of its largest economies, possesses vast natural resources and a diverse economic base, which holds significant potential for growth and development (Haruna, 2023). However, persistent insecurity, including terrorism, insurgency, armed banditry, kidnapping, and communal violence, has severely undermined the country's economic stability (Berebon, 2025). These security challenges have deepened poverty, discouraged investment, and disrupted key sectors, hindering overall development. Insecurity has created a hostile environment for the economy by limiting job opportunities, reducing human capital development, and causing widespread poverty (Adenike, 2021). The fear and uncertainty associated with security issues deter investment in education and training, and limit access to quality employment, further exacerbating economic challenges. Additionally, insecurity has damaged capital stock, with terrorist activities and banditry destroying physical infrastructure,

homes, and educational institutions, diverting resources from productive investments to security needs (Abubakar *et al.,* 2023).

The heightened threat of kidnapping has deterred both local and foreign investors, further hindering economic growth (Adebayo & Oluwamayowa, 2021). According to the National Bureau of Statistics, Nigeria's infrastructure spending over the past decade has contributed only 1.9% annually to GDP, far below the 6% recommended by the Asian Development Bank for sustained growth (Omodara, *et al.,* 2023). In addition to these security challenges, insecurity has also significantly affected Foreign Direct Investment (FDI) in Nigeria. The perception of risk associated with the country's unstable security environment deters investors, leading to a decline in investment inflows (Oyekale, *et al.,* 2024). This reduction in investment hampers job creation, increases unemployment, and exacerbates income inequality, deepening Nigeria's socio-economic divide. The reluctance of investors to engage in the country further weakens Nigeria's economic growth prospects. Thus, socio-economic development is made up of processes caused by exogenous and endogenous factors which determine the course and direction of the development. Socio-economic development is measured with indicators, such as GDP, life expectancy, literacy and levels of employment. Changes in less-tangible factors are also considered, such as personal dignity, freedom of association, personal safety and freedom from fear of physical harm, and the extent of participation in civil society. Causes of socio-economic impacts are, for example, new technologies, changes in laws, changes in the physical environment and ecological changes. Many scholars argued that development cannot be achieved in any nation where there are conflicts, crisis and war (Mhlanga & Ndhlovu, 2023). There is a consensus in the literature that security and development are two different and inseparable concepts that affect each other, and this has naturally triggered debates on security development nexus. However, the gap in existing literature reviewed, provides an opportunity for this study to examine how insecurity, labour force dynamics, and capital stock interact to influence Nigeria's economic growth. Therefore, this study aims to fill this gap by examining how insecurity influences the labour force and capital stock allocation for investments in Nigeria. It explores how these shifts affect long-term economic growth and development in Nigeria. The study also aims to provide policy recommendations for enhancing national stability, promoting investment, and fostering sustainable development. The research is significant for policymakers, business leaders, investors, development practitioners, and the academic community, offering critical insights into the relationship between security and economic performance. By providing empirical evidence, it helps policymakers design targeted interventions that address insecurity's root causes and mitigate its economic consequences, thereby fostering sustainable development in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Issues

2.1.1 Insecurity

The concept of insecurity connotes different meanings such as; absence of safety, danger, hazard, uncertainty, lack of protection, and lack of safety. Ejdus (2020) defines insecurity from two perspectives. Firstly, insecurity is the state of being open or subject to danger or threat of danger, where danger is the condition of being susceptible to harm or injury. Secondly, insecurity is the state of being exposed to risk or anxiety, where anxiety is a vague unpleasant emotion that is experienced in anticipation of some misfortune. According to Rosenje and Adeniyi (2021) insecurity entails lack of protection from crime (being unsafe) and lack of freedom from psychological harm (unprotected from emotional stress resulting from paucity of assurance that an individual is accepted, has opportunity and choices to fulfil his or her own potentials including freedom from fear. In the context of this paper insecurity is defined as a

breach of peace and security, whether historical, religious, ethno-regional, civil, social, economic, and political that contributes to recurring conflicts, and leads to wanton destruction of lives and property.

2.1.2 Labour Force

According to Ranchhod and Daniels (2021) labour force is one of the most crucial elements in understanding the dynamics of an economy which encompasses all individuals who are either employed or actively seeking employment. This group contributes to the production of goods and services in an economy, and their size, structure, and trends provide valuable insights into economic health, labor market conditions, and demographic shifts. The labour force which is known as workforce refers to the total number of individuals who are either employed or unemployed but actively seeking work within a given population (Gallant *et al.,* 2020). Muhammad (2023) noted that, understanding the structure of labour force, its composition, and trends is essential for analyzing economic performance, addressing unemployment, and shaping policies that promote job creation, skills development, and sustainable economic growth. In this study, labour force is seen as fundamental driver of economic growth, particularly in developing economies like Nigeria. It consists of the working-age population that is either employed or actively seeking employment through which an informed decisions regarding employment, social welfare, and economic planning can be achieved.

2.1.3 Capital Stock

According to Pomi *et al.* (2021) Capital stock refers to the total value of physical capital assets available in an economy at a given point in time. These assets include buildings, machinery, equipment, tools, infrastructure, and any other form of capital that contributes to the production of economic goods and services. Capital stock refers to the total physical assets or productive capacity of a nation or a specific economic sector, which is available to produce goods and services (Osiobe, 2020). Gruzina *et al.* (2021) noted that, capital stock is a fundamental component of the capital formation process and plays a key role in economic development. They added that, a growing capital stock is a major driver of productivity growth in an economy. Capital accumulation is vital for economic development, particularly in developing countries. In this study, capital stock, represents the accumulated assets that allow an economy to produce goods and services which is a fundamental determinant of long-term growth and development. It includes physical capital, human capital, and technological infrastructure, all of which play complementary roles in driving productivity and economic progress.

2.1.4 Economic Growth

Economic growth refers to the sustained increase in the value of goods and services produced by an economy over time which is typically measured by the rise in a nation's Gross Domestic Product (GDP) or Gross National Product (GNP). It is a key indicator of a country's economic performance and development that reflects improvements in living standards, productivity, and income levels. Economic growth is driven by a variety of factors, including technological advancements, labour force growth, capital accumulation, and improvements in human capital and institutional frameworks (Barro, 2021). Widarni and Bawono (2021) viewed economic growth to include increase in the amount of physical capital goods, technological improvement, growth in labour force and increase in human capital. While Gräbner *et al.* (2021) identified labour, life expectancy, degree of openness and economic freedom as factors affecting economic growth. Dodds (2020) sees economic growth as a broader concept that recognizes psychological and material factors that measure human well-being. A more holistic view of economic growth considers factors such as income distribution, poverty reduction, social mobility, and environmental stewardship which lead to a broader interpretation of "inclusive" or "sustainable" growth (Stiglitz, 2020). In this paper, economic growth refers to the sustained increase in a nation's output of goods and services, driven by advancements in technology, innovation, and efficient resource allocation. Thus, free from insecurity which fosters an

environment where labour force and capital stock are optimally utilized by encouraging investment, industrialization, and long-term sustainable development.

2.2 Theoretical Literature Review

This study reviewed and adopted social conflict theory and Neo-Malthusian theory in order to provide explanation to the concept of security and economic development as follows;

2.2.1 The Social Conflict Theory

The social conflict theory highlights class differentiation and the suffering of the working class as capitalism grows. Rooted in German philosophy, English political economy, and French socialism, it emphasizes historical materialism and class struggle. Proponents of the theory explain that competition among social classes and state actors leads to the acquisition of weapons for self-preservation, causing social conflicts that threaten national security and economic development (Adebakin & Raimi, 2012). Marx and Engels (1848) argued that history is defined by class struggles, where oppressors and oppressed groups constantly conflict, ultimately leading to societal reconstitution or ruin. The theory asserts that political elites control economic and political resources, while the poor struggle for power. Conflicts between groups such as police versus criminals, ruling versus opposition parties, and different ethnic or religious groups further illustrate social conflict. Social structures like political, economic, and legal institutions arise from such conflicts, driven by the competition for resources and political dominance. Without addressing these tensions, armed struggles and warfare can undermine economic development. Peace is essential for progress (Adebakin & Raimi, 2012).

2.2.2 The Neo-Malthusian Theory

Neo-Malthusian views, championed by figures like Garret Hardin and Paul Ehrlich, draw on Malthus' theory of population growth and its impact on resources. Hardin (1968) argued that the belief in unlimited population growth, coupled with the assumption of equal rights to commons, leads to resource depletion and conflict. Ehrlich (1968) summarized this as "too many people, too little food." Homer-Dixon (1999) extended this idea, suggesting that resource scarcity triggers competition and social conflict, threatening national security. According to Adebakin and Raimi (2012), rising population and scarce resources create a "survival of the fittest" scenario, where groups fight both legally and illegally for control. This theory explains resource-related agitation in regions like the Niger Delta and violent movements such as Boko Haram in northern Nigeria, where competition for resources fuels instability and national security threats.

2.3 Empirical Literature Review

Ukwu *et al.* (2024) analyze the effects of insecurity on socio-economic activities in South-East Nigeria, using the Social Contract and Frustration-Aggression theories. The study identified factors such as actions by security personnel, herders, self-determination agitators, and selective justice as contributors to regional insecurity. The paper recommended for the government to address issues of marginalization, improve education and youth empowerment, and ensure equity and justice. In contrast, Lyeonov *et al.* (2024) explore how historical, economic, and social factors shape country-specific patterns of macroeconomic stability and national security, particularly in the face of global crises like the COVID-19 pandemic. The study focuses on 34 European countries (2000-2022) to identify internal socio-economic and external public health drivers that influence economic growth and resilience to global disruptions. The research emphasized the critical integration of public health with economic policies for long-term stability and security. Chidinma and Inimino (2024) examine the relationship between Nigeria's government recurrent expenditure on internal security and economic growth from 1980 to 2022. Using data from the Central Bank of Nigeria and the Autoregressive Distributed Lag (ARDL) model, the study finds a long-run positive but

insignificant relationship between security expenditure and economic growth, while the exchange rate positively and significantly impacts growth. In the short run, security expenditure negatively affects growth. The study suggests increasing recurrent expenditure on internal security, including salaries, pensions, and operational costs, as this could lead to long-term economic benefits. Similarly, Adeodu *et al.* (2024) examine the causes, consequences, and solutions to insecurity in Nigeria, particularly in the northeast and southeast. Using structured questionnaires and descriptive statistics, the study identifies poverty, unemployment, and illiteracy as major contributors to insecurity, with mean scores of 4.26, 4.24, and 4.31, respectively. The authors recommend empowering youth through vocational training, non-interest loans for artisans, and greater youth involvement in politics.

Yusuf and Mohd (2022) examined government expenditure on security as a prerequisite for achieving sustainable economic growth and development in Nigeria. They proxy economic growth with Gross Domestic Product (GDP) and Human Development Index (HDI). Using Analysis of Variance (ANOVA) to test the impact of government expenditure on security on economic growth and development at 0.05% level of significance for significance determination, they concluded that government expenditure on security has some significant effect on economic growth and development. The study therefore recommended more spending on security so as to sustain the gains already achieved. Ngwoke and Akabike (2022) assessed Insecurity in Nigeria: The Implications for Industrialization and Sustainable Development. The study highlighted poverty, unemployment, illiteracy, religion extremism, porous border, lack of trust and more as causes of insecurity. The study recommended that Government be sincere addressing issues bordering on injustices, marginalization, nepotism, discrimination etc. Again, government should make and execute policies that will encourage business activities and sustainable development. Adabembe and Adedayo (2022) identified factors fueling insecurity in Nigeria, including government failure to meet basic needs, poverty, ethno-religious conflicts, unemployment, and terrorism. Using questionnaires with 150 respondents, the study found insecurity negatively impacts Nigeria's socio-economic development, deterring investment, causing business closures, and leading to loss of lives. The study recommended fostering a robust economy with necessary infrastructure to promote industrial growth, employment, education, and healthcare. Oloyede and Dare (2021) examined insecurity in Nigeria, focusing on Ilorin Metropolis, and its effects on socio-economic development. Key causes identified include unemployment, poverty, ethno-religious conflicts, political instability, and porous borders. Using surveys with descriptive statistics, the study found that insecurity negatively affects the region, with 44.2% of respondents citing fear of attack and 40.8% reporting looted businesses. The study also identified terrorism, border insecurity, and political corruption as major contributors. Overall, insecurity hampers economic growth and development in Nigeria (Berebon, 2025).

Auwal *et al.* (2023) investigated the effect of insecurity on livelihood activities in Dutsin-Ma local government area, Katsina State. The theoretical framework for the study is the frustration aggression hypothesis and human security theory. The findings reveal that there is a high level of insecurity in the study area which creates fear and lack of confidence among the people in carrying out their economic activities. Therefore, the study recommended for a robust security structure in the study area which could come through community policing and liaison with Nigerian Police Force in the study area to form a strong and fearless team that can confront the perpetrators of insecurity. Intelligence information to security agencies should be provided by the citizens, but their privacy should be respected. Suleiman-Ibrahim and Peter (2023) reviewed the causes, consequences, and solutions to insecurity in Nigeria. Major causes identified include illiteracy, unemployment, poor leadership, porous borders, and arms

proliferation. The study found that insecurity leads to underdevelopment, poverty, insurgency, kidnapping, armed robbery, and youth restiveness. The study Recommended for restructuring, community policing, enforcement of the rule of law, quality leadership, and fostering nationalism to address insecurity and promote national unity and development. Pulla and Ugwuoke (2022) analyzed the impact of national insecurity on Nigeria's economic growth, identifying kidnapping, robbery, Fulani herdsmen's activities, ethno-religious crises, and terrorism as key causes. Using secondary data from the CBN and other sources, their descriptive analysis revealed that insecurity hampers sustainable economic growth and declines economic activities across Nigeria's six geopolitical zones. They recommended enhancing governance, increasing security expenditure, implementing anti-terrorism measures, and building strong institutions.

3. METHODOLOGY

3.1 Theoretical Framework

The theoretical framework of this study is based on the development of Social Conflict Theory which is a sociological framework that views society as an arena of inequality that generates conflict and change. The theory originated with Karl Marx, who believed that the economic base of society (the mode of production) is fundamental in shaping its social, political, and ideological superstructure. Subsequent sociologists, such as Max Weber and Ralf Dahrendorf, expanded the theory to include other forms of conflict, such as those based on race, gender, and political power. Social Conflict Theory offers a critical perspective on society, highlighting the role of conflict and power struggles in shaping social structures and relationships. By focusing on inequality and the competition for resources, it provides valuable insights into the dynamics of social change and the ongoing struggles for justice and equality (Folger *et al.*, 2021).

3.2 Source and Scope of Data

This study utilizes time series quarterly data covering the period from 1997Q3-2024Q4. The data for the study was mainly sourced from the statistical bulletin of the Central Bank of Nigeria, (CBN, 2023) and World Governance Index data set (2024). The choice of this period is based on the availability of data that will permit an empirical analysis of the study. Due to time constraint, inadequate financial capacity and further unforeseen circumstances, this study is limited to Nigeria and hence, cannot be extended to any other economy.

3.3 Model Specification

Considering the empirical modification from the work of Raimi and Ogunjirin (2012), the general specification of the model for the study is represented by the following equation;

$LEG = f(Ins, Lab, Lks)$ ……..*(3.1)*

Different scholars in the literature have used single equation model to examine the relationship between insecurity and economic growth. Following Upreti (2021), the estimated equation for the study is therefore modelled as;

$LEG = f(INS_t, LAB_t, LKS_t)$…… *(3.2)*

The empirical mathematical equation of the model is written as;

$LEG_t = a_o + \beta_1 INS_t + \beta_2 LAB_t, + \beta_3 LKS_t,$ …….... *(3.3)*

Given equation (3.3) above it is clear that with stable security and effective labour force and capital stock, economic performance will be enhanced through the growth of the manufacturing sector. This will improve the level of national income generation and enable the economy to have favourable terms and gains of international trade. All things being equal, ceteris paribus. The econometric equation for the study is modeled as;

$LEG_t = a_o + \beta_1 INS_t + \beta_2 LAB_t, + \beta_3 LKS_t, + \varepsilon_t$…… *(3.4)*

Making equation (3.4) an econometric model for the study, an error term (ε_t) is added in order to capture the effect of any other omitted variable in the model as well as the influence of any measurement error that might affect the dependent variable. The error term is assumed to be normally, independently and identically distributed with zero mean and constant variance i.e *($\varepsilon_t \sim$ NIID(0, I_k))*

Thus, the empirical equation of the study is formulated as;

$LEG_t = a_o + \beta_1 INS_t + \beta_2 LAB_t, + \beta_3 LKS_t, + \varepsilon_t$ ……..… *(3.5)*

Whereby;

LEG_t = Log of economic growth proxied by GDP (constant LCU); INS_t = Insecurity proxied by Political Stability and Absence of Violence/Terrorism: Percentile Rank; LAB_t = Labour force proxied by Labour force participation rate, total (% of total population ages 15-60) (modelled ILO estimate) and LKS_t = Log of Capital Stock proxied by Gross fixed capital formation (constant LCU). However, $\varepsilon_t =$ Error term assumption to be normally distributed with zero mean and constant variance and they are the impulse, innovations or shocks; a_o= parameter to be estimated; $\beta_1 - \beta_6$= long term parameter estimators and t = time period.

3.4 Estimation Procedure

The study employed Brock, Dechert and Scheinkman (1996) nonlinear serial dependence test on the variables to determine the serial dependence in the series for the best model of estimation. Moreover, the study employed the Augmented Dickey-Fuller (1997; 1981) and the Phillips Perron (1988) unit root tests for stationarity in order to ensure that the results is free from spurious regression analysis (Narayan & Smyth, 2000). Moreover, the research used Autoregressive Distributive Lag (ARDL) model for the main objective of the study. The ARDL model used can best capture the extent of insecurity dynamics on economic growth and analyze the short run-long run impact of insecurity on economic performance in Nigeria.

3.4.1 Auto Regressive Distributed Lag (ARDL) Model

Autoregressive Distributive Lagged (ARDL) Model recently proposed by Shin et al. (2014) includes relationships both in the short and long run. Besides, the model takes the changes in the dynamic modification. Furthermore, the model is applicable in a combined order of level and the first difference (Ibrahim, 2015). The model is represented as follows;

$$\Delta LEG_t = \mu + \sum_{i=1}^{n-1} a_i \Delta LEG_{t-1} + \sum_{i=0}^{m-1} \gamma_i \Delta INS_{t-i\_}P + \sum_{i=0}^{m-1} \delta_i \Delta INS_{t-i\_}N + \sum_{i=1}^{n-1} \theta_i \Delta LAB_{t-i_P} + \sum_{i=0}^{m-1} \vartheta_i \Delta LAB_{t-i_+} + \sum_{i=0}^{m-1} \pi_i \Delta LKS_{t-i\_}P + \sum_{i=0}^{m-1} \rho_i \Delta LKS_{t-i\_}N - \pi \hat{e}_{t-1} + \varepsilon_t \quad \text{……..……..……} \quad (3.6)$$

Nevertheless, the study conducted a diagnostic test using the serial correlation test, Heteroscedasticity Test, Ramsy reset for normality test and CUSUM/ CUSUMSQ test for stability in order to check for the adequacy and stability of the estimated model.

4. RESULTS AND DISCUSSION

This chapter presents and analyses the data used in the study. It begins with the plot trend analysis and descriptive statistics of the variables used, followed by pre-estimation result estimation result and pre-estimation tests. The chapter also discusses the estimation and other relevant results.

4.1 Descriptive Statistics

The descriptive statistics of the variables used in the study is presented in table 4.1 below. The variables used are abbreviated as LEG_t (Log of Economic Growth) proxy by GDP (constant LCU), INS_t (Insecurity) proxy by Political Stability and Absence of Violence/Terrorism: Percentile Rank, LAB_t (Labour force) proxy by Labour force participation rate, total (% of total population ages 15-64, modelled ILO estimate) LKS_t (Log of Capital Stock) proxy by Gross fixed capital formation (constant LCU).

Table 4.1 Descriptive Statistics

	LEG	*INS*	*LAB*	*LKS*
Mean	13.66971	7.249196	59.77717	3.955386
Median	13.72057	5.659306	60.00350	3.958425
Maximum	13.89174	26.59575	60.42200	4.058649
Minimum	13.35793	2.415459	58.43700	3.836352
Std. Dev.	0.184334	5.157141	0.529870	0.059425
Skewness	-0.446615	2.229630	-0.925101	-0.115171
Kurtosis	1.694303	8.092123	2.833395	1.956900
Jarque-Bera	11.67929	213.8020	16.10470	5.325205
Probability	0.002910	0.000000	0.000318	0.069766
Sum	1531.007	811.9100	6695.043	443.0032
Sum Sq.Dev.	3.771666	2952.167	31.16464	0.391980
Observations	112	112	112	112

Source: Researchers' computation using E-views 13 (2025)

From the above table 4.1 it shows that on average the mean of the variables under the study are not far away from their median, maximum and minimum for LEG, LAB and LKS while for INS they are relatively far away. The standard deviation of LEG, LAB and LKS is less than 1% while for INS it is more than 5%. I The Kurtosis in the table shows that all the variables employed are normally distributed because their values are positive and less than 3 except for INS. The Jarque-Bera test for normality is also estimated in the above tables. The result indicates the rejection of null hypothesis among the variables employed as their p-values are less than 5%.

4.2 Unit Root Test

The study estimated unit root test of both Augment Dickey Fuller and Phillips Perron in order to identify the order of integration of the variables under study.

Table 4.2 Unit Root Test

Variables	Test at level		Test at first difference		Order of Integration
	ADF test	PP test	ADF test	PP test	
LEG	-0.470805	-3.157138	-6.168649**	-6.204795**	I(1)
INS	-3.887855**	-3.416950**	-5.876541**	-6.53654**	I(0)
LAB	-0.470381	-2.567535	-7.764553**	-4.603853**	I(1)
LKS	-2.146449	-2.266245	-9.948593**	-10.05127**	I(1)

Source: Researchers' computation using E-views 13 (2025).

*Asterics ** indicates stationary 5% level of significance.*

Table 4.2 presents the result of Augment Dickey Fuller and Phillips Perron unit root test, it clearly shows that all the variables employed such as economic growth, labour force and capital stock are stationery at first difference i.e I(1) process while insecurity is stationary at level i.e I(0) process. Therefore, there is mixture of order of integration among the variables employed which justify the use of linear ARDL in the analysis.

4.3 Model Selection Criteria

Since the variables found to have the ARDL model based on the lag selection criteria in order to determine the short-run and long-run characteristic of both I(0) and I(1), the next step of the study is to estimate elasticity using Schwarz information criterion. The result of lag selection criteria is presented in figure 4.1.

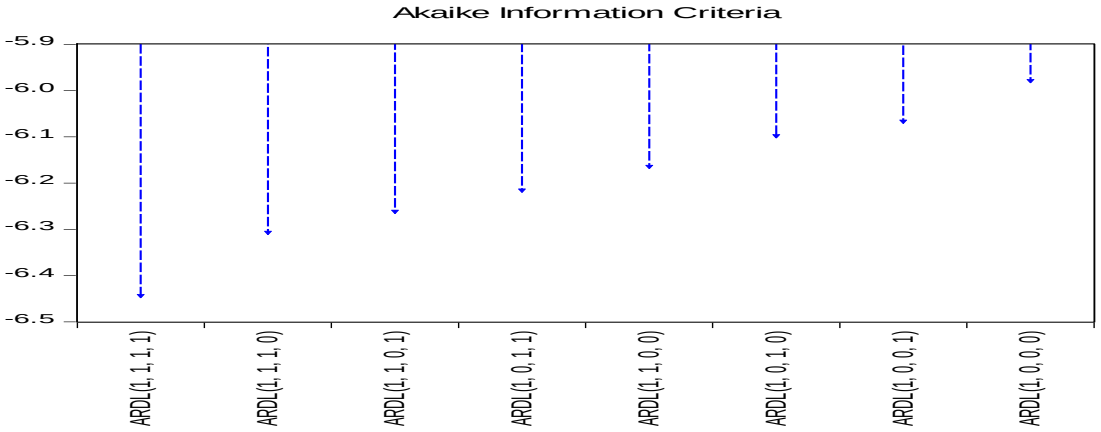

Fig 4.1 Model selection Using Schwarz Information Criterion
Source: Researchers' computation using E-views 13 (2025).

Figure 4.1 above presents the lag selection criteria using Schwarz Information Criteria and the result reveal that the Schwarz Information Criteria choose ARDL (1, 1, 1, 1) model to be best among the eight (8) options.

4.4 ARDL Co-integration Analysis

After selecting the optimal lag model to be used in the ARDL regression analysis, this research examines the co-integration among the variables using the ARDL bounds test based on the null hypothesis of no long-run relationship. The result is reported in table 4.3 below.

Table 4.3 ARDL Bounds Test

F-statistic	Significance	I0 Bound	I1 Bound	Null Hypotheses
38.97273	10%	2.37	3.2	No long - run relationship
K=3	5%	2.79	3.67	
	2.5%	3.15	4.08	
	1%*	3.65	4.66	

Note: **Denotes rejection of the null hypothesis at 1% significance level*
Source: Researchers' computation using E-views 13 (2025)

The result from Table 4.3 reveals that the F-statistic value (38.97273> I1 Bound) lies above the upper bound critical values at 10%, 5%, 2.5%, and 1%, rejecting the null hypothesis of no long run relationship which exist at 1% level of significance and concluded that, the variables under study are co integration in the long run.

4.5 Long Run Estimation

Following the co-integration test, the next is to estimate the long run coefficients to determine the elasticity of the variables. Table 4.4 presents the long run coefficient estimation result of the variable as follows;

Table 4.4 Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INS(-1)	-0.002174	0.000576	-3.772329	0.0013
LAB(-1)	0.000855	0.005113	0.167310	0.8689
LKS(-1)	-0.117828	0.074607	-1.579312	0.1308

Note: *&** indicate *statistically significance at 1% and 5% level*
Source: Researchers' computation using E-views 13 (2025)

Table 4.4 presents the long run dynamic of the ARDL model. The result reveals that in the long run INS (Insecurity) and LKS (Log of Capital Stock) are negative while LAB (Labour force) is positive. The result also shows that INS is statistically significant at 1% which indicates its

strong impact to the economy while LAB and LKS are insignificant in influencing economic growth in Nigeria.

4.6 Short Run Estimation

Having established the presence of cointegration and the long run estimates, the next is to estimate the short run coefficient and determine the error correction term (ECT). Table 4.5 presents the short run coefficients estimation result.

Table 4.5 Short Run Estimation Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INS)	-0.000587	0.000430	-1.364872	0.1882
D(LAB)	0.022623	0.008132	2.782081	0.0119
D(LKS)	-0.018131	0.027848	-0.651066	0.5228
CointEq(-1)*	-0.038908	0.002533	-15.35863	0.0000

Note: *&** indicate *statistically significance at 1% and 5% level*

Source: Researchers' computation using E-views 13 (2025)

An examination of table 4.6 reveals that the speed of adjustment (CointEq(-1)* = -0.038908 with P- Value = 0.0000) is negative and statically significant at 1%, hence, confirming the expected equilibrium process in the short run dynamics among the variables under study. The result indicates that in the short run insecurity (D(INS)) and capital stock (D(LKS)) are negative and statistically insignificant in influencing economic growth in Nigeria, while in the case of labour force (D(LAB)) is positive and statistically significant at 1% level in influencing economic growth in Nigeria.

4.7 Post Estimation Diagnostic Checks

The result of the diagnostic tests for serial correlation, heteroscedasticity, normality and stability of the estimated model are presented as follows;

Table 4.6 Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:				Remark
F-statistic	0.078735	Prob. F(2,17)	0.9246	No serial correlation
Obs*R-squared	0.247802	Prob. Chi-Square(2)	0.8835	

Source: Researchers' computation using E-views 13 (2025)

From the above table, the result shows that, the Null hypothesis of no serial correlation cannot be rejected at any significant level for up to 2 lags, which indicates that the model is free from serial correlation. However, for a model to be stable, good and fit for policy making it must be free from heteroscedasticity, which is referred as heterogeneity of variance in econometric analysis (Engle, 2003).

Table 4.7 Heteroskedasticity Test:

	Breusch-Pagan-Godfrey			Remarks
F-statistic	1.331608	Prob. F(7,19)	0.2894	H0: Homoskedasticity
Obs*R-squared	8.886397	Prob. Chi-Square(7)	0.2609	
Scaled explained SS	6.104619	Prob. Chi-Square(7)	0.5276	

Source: Researchers' computation using E-views 13 (2025)

From the above table, the result shows that, the Null hypothesis of Homoskedasticity cannot be rejected at all level of significance, which indicates that the model is free from heteroscedasticity.

Table 4.8 Ramsey RESET Test

Test	Value	Df	Probability	Remarks
t-statistic	0.589570	18	0.5628	No equation
F-statistic	0.347593	(1, 18)	0.5628	misspecification

Source: Researchers' computation using E-views 13 (2025)

4.9 Normality Test

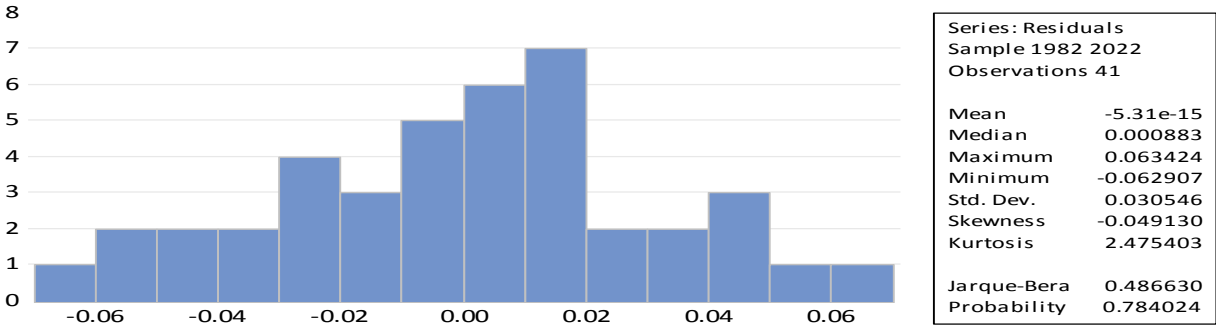

Fig 4.2 Normality test
Source: Researchers' computation using E-views 13 (2025)

The results in table 4.8 and figure 4.2 reveal that the residuals in ARDL model have no misspecification (i.e. in its functional form), and the series are normally distributed as indicated by the p values of greater than 0.05. However, to check the stability and adequacy of the ARDL approach, the research analyses the reliability of the cointegration by using Cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) Tests. The results are presented in figure 4.3 and 4.4 below respectively.

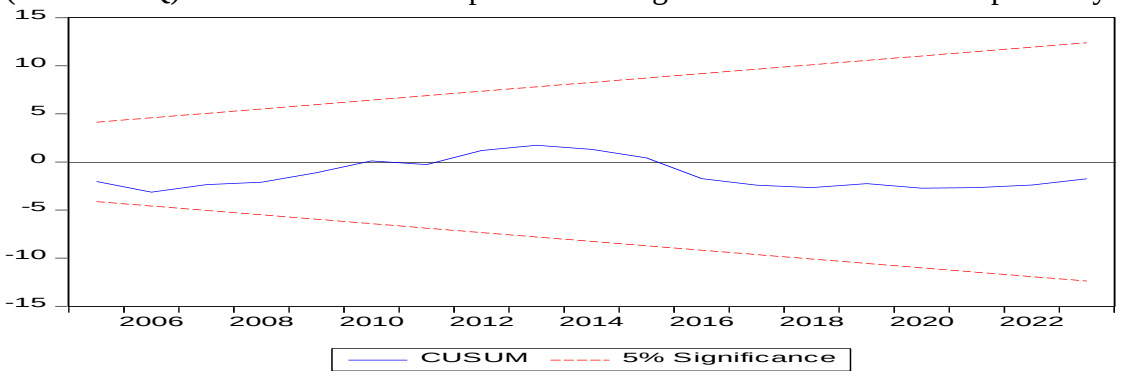

Fig 4.3 Normality test
Source: Researchers' computation using E-views 13 (2025)

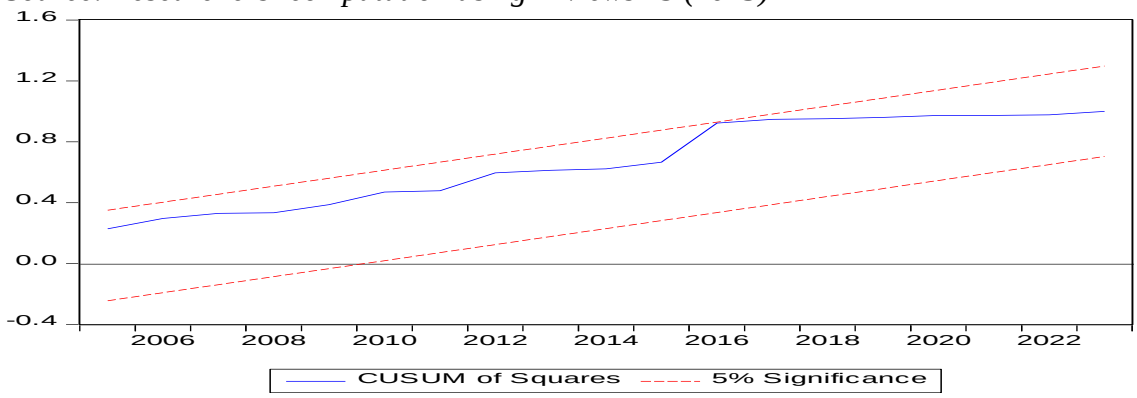

Fig 4.4 Normality test
Source: Researchers' computation using E-views 13 (2025)

Therefore, the results in Figure 4.3 and 4.4 reveal that, both CUSUM and CUSUM of squares are within the 5% significance level; thus, ARDL model is robust and stable and adequate in its form.

5. CONCLUSION AND RECOMMENDATIONS

This study investigates the relationship between insecurity, the labour force, capital stock, and economic growth in Nigeria, a country struggling with a complex structure of socio-economic challenges. The result from the ex-ante analysis indicate that the variables has mixture in their order of integration which is I(1) and I(0) process which implies that the variables are not inherently stable over time without adjustment. The result that the speed of adjustment (CointEq(-1)* = -0.038908 with P- Value = 0.0000) is negative and statically significant at 1%, hence, confirming the expected equilibrium process in the short run dynamics among the variables under study. The result indicates that in the short run insecurity and capital stock are negative and statistically insignificant in influencing economic growth in Nigeria, while in the case of labour force is positive and statistically significant at 1% level in influencing economic growth in Nigeria. However, the rate of adjustment is relatively slow, which implies that short-term policy interventions are needed to accelerate the return to equilibrium. Therefore, policies that address insecurity, improve capital stock, or enhance labour force participation can help speed up this process.

Based on the above findings, this research recommends that, Nigerian government should prioritize initiatives aimed at improving national security. This includes strengthening law enforcement, addressing the root causes of insurgency, and implementing comprehensive peacebuilding and conflict resolution strategies. By creating a stable and secure environment, investor confidence can be restored, and capital inflows will increase, which will ultimately contribute to long-term economic growth by increasing labour force participation, particularly among the youth, women, and rural populations through education and skill development programs, youth employment programs and gender and inclusivity policies. Furthermore, the Nigerian government should adopt policies that promote both domestic and foreign investment, with particular focus on improving the efficiency of capital utilization through improving infrastructure, encouraging foreign direct investment and enhancing capital market development to ensure that businesses especially SMEs have easier access to finance in order to stimulate private sector growth and enhance capital stock.

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