

## Institutional Quality and Output Performance in Nigeria

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### ABSTRACT

This study investigates the impact of institutional quality on output performance in Nigeria using annual secondary time series data extracted from World Bank WGI database and the Central Bank of Nigeria from 1996-2021. Descriptive analysis, correlation analysis, unit root test, lag selection test, F-bounds cointegration test, and autoregressive distributed lag (ARDL) model were employed to analyze the time series data with output performance (proxied by the gross domestic product growth rate) as dependent variable, while institutional quality, gross fixed capital formation, labour force growth rate, foreign direct investment, inflation rate, and financial development were incorporated as independent variables. Findings show that all the explanatory variables except the gross fixed capital formation were significant in the long run. However, only the institutional quality and inflation rate exhibit negative impact on economic growth, while all the other explanatory variables exert positive impact on economic growth along the long run horizon. With regards to the short run, only the institutional quality, labour force growth rate, and financial development have significant impact on economic growth. Furthermore, only institutional quality and inflation rate exhibit negative relationship with economic growth, while the other explanatory variables exert positive relationship with output performance along the short run horizon. Consequently, the study recommended that the Nigerian government should adopt policies and strategies that can improve the quality of institutions in the country.

**Key Words:** Institutional Quality, Output Performance, Long run Impact, Short run Impact

### INTRODUCTION

Over the years, Nigeria has spent too much money in building institutions by the establishment of various anti-corruption agencies such as Independent Corrupt Practices Commission (ICPC) in 2000, the Economic and Financial Crimes Commission (EFCC) in 2004, the Nigerian Financial Intelligence Unit (NFIU) in 2004, and the Fiscal Responsibility Commission (FRC) in 2007 (Abubakar, 2020). The goals of these agencies promote prudence and accountability in resource utilization in both the public and private sectors in order to achieve sustainable long-term economic growth, and prevent corruption and mismanagement of public funds. However, despite all measures put in place by the Nigerian government to ensure adequate institutional quality and improve economic performance, the economy of Nigeria has not been growing at the desired level overtime as the growth of the Nigeria economy is downward sloping and declining.

Consequently, Nigeria institutional quality investment does not improve the growth of the economy due to the underlying factors; (1) Insecurity which discouraged many foreign and domestic investors from investing in Nigeria due to the fear of being killed or kidnapped. (2) The high rate of corruption in Nigeria is disheartening. In 2021, Nigeria was ranked 154th among the 180 countries listed in Transparency International's Corruption Index. (3) Many Nigerians are deprived of quality education, access to good health care services, good drinking water, electricity, and many other benefits due to corruption in Nigeria. Many Nigerians are

poor because of greedy government officeholders. (4) The poor economic management evidenced in forex shortages and the high exchange rate is posing a threat to the growth of the Nigerian economy. The potential consequences of the above is that it will constantly weaken the quality of institutions politically, economically, and socially, that are believed to be critical for the country's economic growth, and as a result, the impact of institutions will be felt negatively. Finally, the necessity to exert control over the state's discretionary use of power and policies has also driven this study's position on economic and political level on why the country has not done better.

The significance of this study cannot be overstated, as it aims to unearth the essence of acknowledging the endogenous and distributive character of institutional quality, as well as its important role in determining national growth and development. This study is particularly interested in investigating the level of institutionalized limits placed on the discretionary use of power by Nigeria's executives and political leaders, as well as the extent to which this has influenced the country's economic growth. On these principles, this study will be beneficial in three ways. For starters, it will provide a research window that will direct future research, notably in the domains of informal institutions, legal and social institutional components in economic performance. Second, the purpose of this study is to broaden the research horizons by analysing Nigeria-specific situations in unravelling the impact of the nexus between institutional quality and economic growth. Third, it will provide policymakers with the necessary advantage in considering political economic challenges in the design and implementation of public policy choices in their country. The rest of the paper is discussed under the literature review, methodology, results and discussion, conclusion and recommendation.

### LITERATURE REVIEW

Ejubekpokpo (2012) employed data from 1970 to 2010, and used the OLS technique to examine the influence of governance costs on economic development in Nigeria. According to the study, the expense of governance stifles the country's economic development. Furthermore, Attah (2012) discovered that the Nigerian economy did not do well after 12 years of democratic governance when examining the performance of the Nigerian economy under democratic rule from 2000 to 2009.

Dandume (2013) investigated the performance of institutions and economic growth in Nigeria. The ARDL approach to cointegration and causality is used in this work. The findings suggest that corruption has a beneficial influence on economic growth, whereas accountable executive, rule of law, and competitive politics have no effect on economic growth. Furthermore, the Granger Causality test results show that institutions and economic growth granger cause each other. He also used the ARDL technique to investigate the association between institutions and growth performance in Nigeria. The findings suggest long-run links between institutions and economic growth, as well as a two-way causal relationship.

Olagunla, Kareem, and Raheem (2014) investigated the link between institutions (represented by economic freedom) and resource curse (represented by GDP and oil export). They used regression analysis on data from 1986 to 2012. They discovered a negative association between institutions and the Nigerian resource curse. In addition, Ubi and Udah (2014) investigated the impact of corruption and institutional quality on economic growth in Nigeria, both descriptively and quantitatively. The study found that corruption and institutional quality (as assessed by contract intensive money) have a statistically significant impact on Nigerian economic performance.

Yusuf and Malarvizhi (2014), investigate institutional features as well as Nigeria's economic performance. The ARDL model was used in the study to investigate cointegration and causality. Based on the findings, long-term improvement in good institutions is connected

with rising growth and per capita income. This study's findings suggest that there is a reverse causality. Also, Olarinde and Omojolaibi (2014) used an endogenous growth model to investigate the long and short term relationships between institutional quality, power consumption, and Nigeria's economic growth rate between 1980 and 2011. The ARDL test and VECM-based test technique were used in the study to determine whether there is a short run and long run link between the model's variables. The findings revealed that there is a short-run as well as a long-run relationship between economic growth, energy consumption, and the country's institutions.

Ifere, Okoi, and Bassey (2015) investigated the relationship between institutional quality, macroeconomic policy, and Nigerian economic growth. Data from the Central Bank of Nigeria were used in the study, which spanned the years 1995 to 2013. The OLS technique was used to estimate their model. Their findings suggested that domestic institutions had a little impact on Nigeria's growth metrics. Similarly, Iyoboyi and Pedro (2014) found that a significant portion of changes in macroeconomic performance in Nigeria is not related to institutional quality. Because of the inconsistent findings in the existing literature for Nigeria, a broad scope still has to be covered in order to achieve a more thorough understanding of the role of institutions in Nigeria.

Izieni and Mohammed (2017) research looks at the relationship between Nigeria's democratic institutions and foreign direct investment. The period covered by the Generalized Method of Moments (GMM) study is from 1981 to 2015. The results show that while FDI has a positive impact on economic growth, democratic institutions have a negative impact. In Addition, the latest study by Olayungbo and Adediran (2017) has also improved understanding of the relationship between institutions and growth in Nigeria. The study analyzed the impact of oil revenue and institutional quality on economic growth in Nigeria using annual data from 1984 to 2014 and the ARDL method. Overall, it was concluded from the analysis that institutional quality plays a key role in understanding the link between oil revenue and Nigeria's economic expansion.

The relationship between institutional quality and economic growth in Nigeria from 1981Q1 to 2016Q4 was examined by Ogbuabor, Onuigbo, Orji, and Orji (2019), who also covered the pertinent policy ramifications for Nigeria after COVID-19. The study used the ARDL approach, which tests for a long-term link between the pertinent variables using a limits test approach based on the unconstrained error correction model (UECM). The results show that institutional quality, both at the overall and sectoral levels, has a negative but minor impact on economic growth in Nigeria. However, it was discovered that capital and labor were the main forces behind the nation's initial output growth levels, but trade is a growth-retardant factor. According to the study's findings, Nigeria has to strengthen its socioeconomic and political institutions in the post-Covid-19 era in order for those institutions to have a more significant impact on the nation's economic performance, both overall and by sector.

The impact of institutional quality on economic growth from 1979 to 2018 was examined by Abubakar (2020). The analysis, which employed the Johansen Cointegration and Ordinary Least Square (OLS) approaches, revealed that while the effective governance index has a positive but negligible impact on economic growth, institutional quality (contract-intensive money) has a positive but significant impact on economic growth. The current study, however, uses an asymmetric technique to investigate the link while taking into account the impact of the country's composite institutional quality score on economic growth. As a result, a fresh look at the influence of institutional quality on economic growth in Nigeria is required, one that is new and non-linear.

Using annual time series data spanning the years 2001 to 2019, Utile, Ijirshar, and Sem (2021) investigated the impact of institutional quality on the growth of the Nigerian economy in the twenty-first century. Using the ADF unit root test, the data for the variables were

compared to unit root issues, and all the variables were either integrated of I(1) or I (0). The Pesaran, Shin, and Smith (PSS) Bounds test was used as a result, and it verified that there was a long-term link between the study's variables. Utilizing the Auto-Regressive Distributed Lag (ARDL) model, the study discovered that Institutional Quality (INSQ) significantly inhibits economic growth. In the event of any disequilibrium, the economic development was capable of slowly reverting to the long-run equilibrium path, as indicated by the error correction term's negative statistical significance. The research proposed strengthening the battle against corruption, promoting greater accountability and freedom of expression, enhancing regulatory authority, and enhancing government effectiveness through better leadership selection procedures.

### Gaps in Literature

Despite the proliferation of the above empirical studies, there is a serious question that emerged on the validity of the quality of institutional reform both from within the main stream and heterodox economic studies. The fact remain that such types of empirical studies cannot precisely explain how institutions is necessary required for growth rather than the reverse causality, that is growth causing institutions. For instance, Sachs, et al. (2004) demonstrated an econometric analysis that standardized the measurement of institutions by level of income and found that, in fact, a lot of African countries are properly govern based on the level of their income. Therefore, they reached conclusion that there is a weak relationship between improvement in institutions and economic growth. However, contrary to Sach, et al. (2004), the general conclusions within the heterodox studies is that it is economic growth that influence institutions by improving higher income; this is clear in the case where growth was accompanied by greater need for higher good institutions (for example, desire for political institutions, with greater check and balance). In finding resolution to this conflict, this study will assess the impact of institutional quality on economic growth by conducting a case study of Nigeria.

## METHODOLOGY

### Model Specification

Model specification is the expression of a relationship into a precise theoretical, mathematical, and econometrical form. Economic theory does not indicate the functional form of any relationship, it means that economic does not state whether a relationship will be expressed in linear, quadratic, or cubic form (Goldberger, 1964). To investigate the objectives of this study, the model by Uдах and Ayara (2014) in equation (5) was adopted and modified to incorporate capital stock as gross fixed capital formation (GCF), and labour stock as labour force participation rate (LAB). Furthermore, foreign direct investment (FDI), inflation rate (INF), and financial development (FID) were incorporated as control variables. Thus, the implicit functional model of this study is stated below:

$$GDP = f(INQ, GCF, LAB, FDI, INF, FID) \quad (1)$$

The mathematical form of the model can be expressed as:

$$GDP = b_0 + b_1INQ + b_2GCF + b_3LAB + b_4FDI + b_5INF + b_6FID \quad (2)$$

The econometric form of the model can be expressed as:

$$GDP = b_0 + b_1INQ + b_2GCF + b_3LAB + b_4FDI + b_5INF + b_6FID + U_t \quad (3)$$

Where; GDP = gross domestic product growth rate, INQ = institutional quality, GCF = gross fixed capital formation, LAB = labour force growth rate, FDI = foreign direct investment, INF = inflation rate, FID = financial development, and  $U_t$  = stochastic error term.

### **A-priori Theoretical Expectation**

The economic a-priori expectations, according to Koutsoyiannis (1977) is an economic theory that refers to the sign and size of the parameters in economic relationships. The expected relationship between the dependent variable (GDP) and independent variables (INQ, GCF, LAB, FDI, INF, and FID) shall be based on macroeconomic principles. Consequently, it is expected that  $b_1 > 0$ ,  $b_2 > 0$ ,  $b_3 > 0$ ,  $b_4 > 0$ ,  $b_5 < 0$ , and  $b_6 > 0$ .

### **Sources and Methods of Data Collection**

The broad objective of this study is to investigate the impact of institutional quality on economic growth in Nigeria. Since this study focuses on ex-post facto research design, the data employed for this study are secondary annual time series data spanning the period 1996 - 2021 and are sourced mainly from the Central Bank of Nigeria (CBN), and the World Governance Indicators on World Bank Database.

### **Measurements of Variables**

In the measurement of variables employed in this study, the growth domestic product is measured by gross domestic product growth rate. The institutional quality is measured by the average indices of world governance indicators namely; voice and accountability (VAC), political stability and absence of violence/terrorism (AVT), government effectiveness (GEF), regulatory quality (REQ), rule of law (RUL), and control of corruption (COC). The gross fixed capital formation is measured by gross fixed capital formation as a percentage of gross domestic product. The labour force is measured by total labour force growth rate. The foreign direct investment is measured by foreign direct investment as a percentage of gross domestic product. The inflation rate is also measured by the consumer price index. Finally, the financial development is measured by the ratio of broad money supply to gross domestic product.

### **Preliminary Analysis**

The preliminary analysis is performed to show the characteristics of the variables under consideration. The preliminary test is sub-divided into (a) Trend analysis which helps to capture the trend event of the time series variables, and this will help us in the assessment of variable movements over time. (b) Descriptive analysis helps to capture the inherent statistical behaviour of the series. The parameters include; mean, median, mode, minimum, maximum, standard deviation, skewness, kurtosis, and Jacque-bera. (c) Correlation analysis measures the degree of association among variables employed in the study. The degree of correlation can either be positive or negative. Other pre-estimation tests are:

### **Unit Root Test**

The first step for an appropriate econometric analysis is to determine if the data in the series are stationary or not. The unit root test is a preliminary econometric criterion that measures the level of stationarity of the variables under consideration. Time series data can either be stationary or non-stationary. In stationary time series, shocks will be temporary and over time their effects will be eliminated as the series revert to their long-run mean value. On the other hand, non-stationary time series will necessarily contain permanent components. However, time series analysis must be stationary to make predictable and stable economic policies and recommendations and also forecast for the future.

Two important statistics are used to evaluate the unit root test for this study namely; Phillip Perron (PP) test and the Augmented Dickey-Fuller (ADF) test. To determine the position of stationarity using ADF and PP test, if the absolute value of the ADF or PP test statistic is greater than the critical value at the 1%, 5%, or 10% alpha level of significance, then the variables are stationary either at the level I(0), at the first difference I(1) or second



difference I(2). The unit root test was conducted with constant specification case and Schwartz Information Criterion (SIC) automatic lag selection for the ADF test, while the PP test was conducted with Bartlett Kernel spectral estimation method and Newey-West Bandwidth using Eviews.

### Cointegration Test

The cointegration test is an econometric technique used in the testing correlation between non-stationary time variables. Two series are co-integrated if they both move together along a trend at the same rate. Cointegration talks about the convergence of an econometric system to the existence of a long-run equilibrium relationship over time. In a time series analysis, we often encounter situations where we wish to model one non-stationary time series ( $Y_t$ ) as a linear combination of other non-stationary time series ( $X_{1t}, X_{2t}, \dots, X_{kt}$ ). In other words;

$$Y_t = b_0 + b_1X_{1t} + b_2X_{2t} + \dots + b_kX_{kt} + U_t \quad (4)$$

In general, a regression model for non-stationary time series variables gives spurious (nonsense) results. The only exception is if the linear combination of the dependent and independent variables eliminates the stochastic trend and produces stationary residuals, such that  $Y_t + y_1X_{1t} + y_2X_{2t} + \dots + y_kX_{kt} \sim I(0)$ .

The study employed an F-bounds cointegration test, and the first step in the ARDL bounds testing approach is to estimate the model by Ordinary Least Squares (OLS) to test for the existence of a long-run relationship among the variables by conducting an F-test for the joint significance of the coefficients of the lagged levels of the variables, that is:

$$H_0: \partial_1 = \partial_2 = \partial_3 = \partial_4 = \partial_5 = \partial_6 = \partial_7 = 0 \text{ against the alternative hypothesis}$$

$$H_1: \partial_1 \neq \partial_2 \neq \partial_3 \neq \partial_4 \neq \partial_5 \neq \partial_6 \neq \partial_7 \neq 0$$

Two asymptotic critical value bounds provide a cointegration test when the independent variables are I(d) [where  $0 \leq d \leq 1$ ]: a lower value assuming the regressors are I(0) and an upper value assuming purely I(1) regressors. If the F-statistic is above the upper critical value, the null hypothesis of no long-run relationship can be rejected irrespective of the orders of integration for the time series. Conversely, if the test statistic falls below the lower critical value, the null hypothesis cannot be rejected. Finally, if the statistic falls between the lower and upper critical values, the result is inconclusive.

### Model Estimation Technique

This study adopts the ARDL-ECM bounds-test cointegration procedure to estimate the impact of institutional quality on economic growth in Nigeria. Pesaran et al. (2001) proposed an Autoregressive Distributed Lag (ARDL) bounds testing approach to investigate the existence of a cointegration relationship among variables. The ARDL-ECM model is specified below.

$$\Delta GDP_t = C_0 + \partial_1 GDP_{t-1} + \partial_2 INQ_{t-1} + \partial_3 GCF_{t-1} + \partial_4 LAB_{t-1} + \partial_5 FDI_{t-1} + \partial_6 INF_{t-1} + \partial_7 FID_{t-1} + \sum_{i=1}^p \phi_i \Delta GDP_{t-i} + \sum_{j=0}^q \phi_j \Delta INQ_{t-j} + \sum_{l=0}^q \Omega_l \Delta GCF_{t-l} + \sum_{m=0}^q \varpi_m \Delta LAB_{t-m} + \sum_{n=0}^q \omega_n \Delta FDI_{t-n} + \sum_{r=0}^q \beta_r \Delta INF_{t-r} + \sum_{s=0}^q \alpha_s \Delta FID_{t-s} + \eta ECM_{t-1} + \epsilon_t \quad (5)$$

Where;  $\partial_i$  = long run multiplier ( $i = 1, 2, 3, 4, 5, 6, 7$ );  $C_0$  = the intercept;  $\epsilon_t$  = white noise.

In equation (10),  $\phi, \phi, \Omega, \eta, \omega, \beta,$  and  $\alpha$  were the short-run dynamic coefficients of the model convergence to equilibrium,  $\eta$  is the speed of adjustment, and ECM is the error correction model of lag one. Notably, the ARDL-ECM model is estimated in the form of general to specific approach using the Ordinary Least Squares framework.

### Post-Estimation Tests

For the post-estimation (diagnostic) test, this study considered five major tests, these include the Ramsey Reset or Linearity test which is used to check for the validity of the model specification as well as the linearity assumption, the Jacque-Berra test which is used to check

whether the residuals have the normal distribution property, the Breusch-Godfrey test to check for the presence of serial correlation, the Auto-Regressive Conditional Heteroskedasticity-Lagrangian Multiplier (ARCH-LM) test to ascertain whether the error term (u) in the regression model has a common or constant variance, and lastly, the CUSUM and CUSUM of squares test to ascertain the structural stability of the model.

**Descriptive Analysis**

Descriptive analysis is a statistical concept used to ascertain the statistical behaviour of variables under consideration. It comprises mean, median, maximum, minimum, standard deviation, skewness, kurtosis, Jarque-Bera, probability, sum, sum square deviation, and the total number of observations of each of the variables involved in this study.

**Table 1: Summary of Descriptive Analysis**

Variable	GDP	INQ	GCF	LAB	FDI	INF	FID
Mean	5.039130	-1.115000	3.206522	2.023932	1.388696	12.63313	18.48496
Median	5.300000	-1.130000	2.550000	2.535362	1.370000	12.21800	21.35467
Maximum	15.30000	-0.910000	40.39000	2.739656	2.900000	29.26800	24.89526
Minimum	-1.800000	-1.266667	-21.90000	-1.976436	0.200000	5.388000	8.464230
Std. Dev.	3.696772	0.081742	12.86269	1.348900	0.809098	4.840896	5.486402
Skewness	0.429363	0.250309	0.602069	-2.302668	0.303901	1.632243	-0.458333
Kurtosis	4.150264	3.179544	4.797344	6.815278	1.903088	7.174615	1.589488
Jarque-Bera	1.974663	0.271070	4.485378	34.27524	1.507113	26.91410	2.711909
Probability	0.372570	0.873249	0.106173	0.000000	0.470690	0.000001	0.257701
Sum	115.9000	-25.64500	73.75000	46.55044	31.94000	290.5620	425.1541
Sum Sq. Dev.	300.6548	0.147000	3639.871	40.02968	14.40206	515.5541	662.2133
Observations	26	26	26	26	26	26	26

Source: Author’s Computation using Eviews, 2022

From Table 1 above, the descriptive statistics revealed that from 1996 to 2021, the gross domestic product growth rate (GDP), institutional quality (INQ), gross fixed capital formation (GCF), total stock of labour force (LAB), foreign direct investment (FDI), inflation rate (INF), and financial development (FID) shows an approximate mean value of 5.04, -1.12, 3.21, 2.02, 1.39, 12.63, and 18.48 respectively. The maximum values of the variables are approximately 15.30, -1.13, 2.55, 2.54, 1.37, 12.22, and 21.35 respectively; with their minimum values approximately ranging between -1.80, -1.27, -21.90, -1.98, 0.20, 5.39, and 8.46 correspondingly. The standard deviation revealed that the highest standard deviation of (12.86269) was recorded by GCF, while the least standard deviation of (0.081742) was recorded by INQ. The Skewness statistic from the table showed that GDP, INQ, GCF, FDI, and INF are positively skewed, while LAB and FID are negatively skewed. The kurtosis coefficients showed that only FDI and FID are platykurtic as their values are less than 3.00 which indicates that the tail of the variable is very thin compared to the normal distribution, while GDP, INQ, GCF, LAB, and INF are leptokurtic as their values are greater than 3.00 which indicates that the tail is flatter than the normal distribution. Finally, the probability of the Jarque-Bera statistic revealed only LAB and INF are below the p-value of 0.05, while GDP, INQ, GCF, FDI, and FID were above the 5% significance level.

**Correlation Analysis**

Correlation analysis measures the degree of association that exists between two or more variables. Consequently, this study examines the degree of association that exists between the dependent variable (GDP) and independent variables (INQ, GCF, LAB, FDI, INF, and FID) using the correlation matrix which is presented in Table 2 below.

**Table 2: Summary of Correlation Matrix**

Variable	GDP	INQ	GCF	LAB	FDI	INF	FID
<b>GDP</b>	1.000000						
<b>INQ</b>	-0.706325	1.000000					
<b>GCF</b>	0.173791	-0.114423	1.000000				
<b>LAB</b>	0.103271	0.025101	0.032276	1.000000			
<b>FDI</b>	0.625718	-0.462901	0.095294	0.131532	1.000000		
<b>INF</b>	-0.109946	-0.165379	-0.056148	0.106736	-0.100047	1.000000	
<b>FID</b>	-0.435509	0.239137	-0.128345	-0.306671	-0.365782	-0.205037	1.000000

Source: Author's Computation using Eviews, 2022

The correlation results in Table 2 above indicate that the independent variables GCF, LAB, and FDI have low and moderate positive correlations of approximately 17%, 10%, and 63% respectively with the dependent variable (GDP), whereas INQ, INF, and FID have low and moderate negative correlations of approximately -71%, -11%, and -44% with GDP accordingly. The correlation result indicates that due to the low and moderate degrees of correlation coefficients, there is an absence of multicollinearity among variables under consideration.

### Unit Root Test of Stationarity

Economic variables are generally non-stationary and random as a result of linear combinations of variables closely associated with economic theory. To assess the time series properties of variables employed in this study, the unit root test was employed using augmented dickey fuller (ADF) and Philip Perron (PP) test statistics. To achieve the second objective of this study which focuses on the assessment of the impact of institutional quality on economic growth in Nigeria, it is assumed that some variables must be stationary at level I(0), while others must be stationary at first difference I(1) to be able to employ autoregressive distributed lag (ARDL) model.

**Table 3: Summary of ADF Test Summary of PP test**

Variable	Level	First Diff.	Order of Integration	Level	First Diff.	Order of Integration
<b>GDP</b>	-2.573906 (0.1115)	<b>-6.761988**</b> (0.0000)	I(1)	-2.592689 (0.1077)	<b>-6.832700**</b> (0.0000)	I(1)
<b>INQ</b>	-2.292739 (0.1839)	<b>-5.859151**</b> (0.0002)	I(1)	-2.129708 (0.2361)	<b>-8.106921**</b> (0.0000)	I(1)
<b>GCF</b>	<b>-9.079391**</b> (0.0000)	_____	I(0)	<b>-12.89824**</b> (0.0000)	_____	I(0)
<b>LAB</b>	<b>-3.620722**</b> (0.0130)	_____	I(0)	<b>-2.870576*</b> (0.0631)	_____	I(0)
<b>FDI</b>	-1.699413 (0.4171)	<b>-7.635731**</b> (0.0000)	I(1)	-1.701164 (0.4185)	<b>-7.772504**</b> (0.0000)	I(1)
<b>INF</b>	<b>-6.375484**</b> (0.0000)	_____	I(0)	<b>-6.125502**</b> (0.0000)	_____	I(0)
<b>FID</b>	-1.231881 (0.6440)	<b>-4.453329**</b> (0.0019)	I(1)	-1.226266 (0.6465)	<b>-4.440441**</b> (0.0020)	I(1)

Test critical values: 1% level **-3.724070**  
5% level **-2.986225**  
10% level **-2.632604**

\*MacKinnon (1996) one-sided p-values.

Source: Author's Computation using Eviews, 2022. P-values in brackets



From Table 3 it can be deduced that GDP, INQ, FDI, and FID are non-stationary at level I(0) for both ADF and PP test using the case of constant intercept, as their respective critical values are less than 5% MacKinnon critical value. However, after the difference of the variables were taken, they were found to be stationary at first difference I(1) for both ADF and PP tests with p-values less than 5% significant level. Notably, GCF, LAB, and INF were found to be stationary at level I(0). Consequently, Autoregressive distributed lag (ARDL) model can be employed for the analysis of the impact of institutional quality on economic growth in Nigeria.

**Lag Selection Test**

Another important test to be employed before ARDL analysis is the lag selection criteria. The ARDL models are sensitive to the lag order, and in addition, optimal lag order would be helpful for reliable and consistent result. Table 4 below present the lag length criteria, however, Akaike information Criterion (AIC) or Schwarz Information Criterion (SIC) will be considered for this study.

**Table 4: Lag Order Selection Criteria**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-238.5780	NA	397.7639	25.85032	26.19827	25.90920
1	-145.7330	107.5047*	5.816915*	21.23506*	24.01866*	21.70615*
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Source: Author’s Computation using Eviews, 2022

From Table 4 above, following the lag selection criteria test, it can be seen that all the information criterion (LR, FPE, AIC, SC, and HQ) selected lag 1 as the maximum lag length. Consequently, the ARDL model for this analysis would be estimated using lag order one (1). As far as this study is concerned, the appropriate ARDL model selection best fit for lag one (1) using AIC information criteria is **1, 1, 0, 0, 1, 0, 1** because of its reliability and stability.

**Cointegration Test**

When a linear combination of variables are stationary at I(0) and I(1) series, then the variables may need to be cointegrated. This means that a long-run relationship may exist among them, which connotes that they may wander from one another in the short run, but in the long run they will move together. To establish whether long-run relationship exists among the variables or not, cointegration test is conducted by employing F-bounds cointegration test developed by Pesaran, Shin, and Smith (2010).

**Table 5: F-Bounds Cointegration Test**

ARDL Bounds Test		
Null Hypothesis: No long-run relationships exist		
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99

1%	3.15	4.43
<b>Test Statistic</b>	<b>Value</b>	<b>k</b>
F-statistic	5.359399	6

Source: Author’s Computation using Eviews, 2022

The result of the analysis in Table 5 indicate that the calculated F-statistic (5.359399) is greater than the upper bound critical value of 3.23, 3.61, 3.99, and 4.43 at significance level of 10%, 5%, 2.5%, and 1% respectively. It can also be deduced that the F-statistic is greater than lower critical bound at 10%, 5%, 2.5%, and 1%. Based on this result, it can be concluded that there is evidence of a long-run relationship among the variables incorporated in the model. This result is in alignment with the study of Utile, Ijirshar, and Sem (2021) who in their study of institutional quality and economic growth in Nigeria also found evidence of long run relationship among the variable under consideration. Having established the co-integration relationship, it is pertinent to estimate the ARDL model to assess the short-run and long- run impact of institutional quality on economic growth in Nigeria.

**Table 6: Summary of ARDL**

<b>Method: ARDL</b>				
<b>Selected Model: ARDL(1, 1, 0, 0, 1, 0, 1)</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.*</b>
<b>GDP(-1)</b>	-0.711399	0.230435	-3.087199	<b>0.0150</b>
<b>INQ</b>	-38.99115	9.821574	-3.969950	<b>0.0041</b>
<b>INQ(-1)</b>	-41.50654	11.34832	-3.657505	<b>0.0064</b>
<b>GCF</b>	0.040651	0.028038	1.449820	0.1852
<b>LAB</b>	0.631469	0.276930	2.280246	<b>0.0521</b>
<b>FDI</b>	1.428977	0.840658	1.699831	0.1276
<b>FDI(-1)</b>	1.085783	0.770064	1.409991	0.1962
<b>INF</b>	-0.205368	0.113011	-1.817249	0.1067
<b>FID</b>	0.605219	0.262321	2.307168	<b>0.0499</b>
<b>FID(-1)</b>	-0.305808	0.227890	-1.341911	0.2165
<b>C</b>	-90.79939	19.89542	-4.563833	<b>0.0018</b>
R-squared	<b>0.914618</b>	Mean dependent var		4.673684
Adjusted R-squared	<b>0.807891</b>	S.D. dependent var		3.216078
S.E. of regression	1.409615	Akaike info criterion		3.817408
Sum squared resid	15.89612	Schwarz criterion		4.364188
Log likelihood	-25.26538	Hannan-Quinn criter.		3.909945
F-statistic	8.569674	Durbin-Watson stat		<b>2.055569</b>
Prob(F-statistic)	<b>0.002807</b>			

Source: Author’s Computation using Eviews, 2022

In line with the Durbin-Watson stat of approximately 2.06 which tends to be greater than the value of R-squared of 0.91, the model is said to be free from spurious regression and serial correlation problem. Furthermore, with the p-value of F-statistic (0.002807), the model is said to be jointly significance. With regards to the R-squared of 0.91, it implies that the changes in explanatory variables in the model explained about 91% of the changes in dependent variable. Consequently, the estimated long run and short-run results are presented in Table 7 and Table 8 below.

**Table 7: Long-run Impact of Institutional Quality on Economic Growth in Nigeria**

Dependent Variable: GDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
INQ	<b>-47.036202</b>	6.058446	-7.763741	<b>0.0001</b>
GCF	0.023753	0.015196	1.563082	0.1567
LAB	0.368978	0.150545	2.450942	<b>0.0399</b>
FDI	1.469418	0.399786	3.675515	<b>0.0063</b>
INF	-0.120000	0.063670	-1.884720	<b>0.0962</b>
FID	0.174951	0.076555	2.285293	<b>0.0516</b>
C	-53.055665	7.738794	-6.855805	<b>0.0001</b>

Source: Author's Computation using Eviews, 2022

From Table 7 above, it can be seen that institutional quality (INQ) exerts negative and significant impact on economic growth (GDP) in Nigeria along the long run horizon. With a coefficient of approximately -47.04 unit and a p-value of 0.0001, the result implies that a unit increase in institutional quality would bring about -47.04 unit decline in the economic growth (GDP) and vice versa. This result conformed to the study of Ogbuabor, Onuigbo, Orji, and Orji (2019) and Utile, Ijirshar, and Sem (2021) who in their study of the impact of institutional quality on economic growth in Nigeria also found a negative and significant relationship between institutional quality and economic growth in Nigeria. However, this result is in disagreement with the study of Abubakar (2020) who employed contractive Intensive money as a proxy for institutional quality, and found positive relationship between institutional quality and economic growth in Nigeria.

Conversely, it can also be deduced from Table 7 that the gross fixed capital formation (GCF) exerts a positive but insignificant impact on economic growth (GDP) in Nigeria along the long run horizon. With a coefficient of approximately 0.02 unit and a p-value of 0.1567, the result implies that a unit increase in gross fixed capital formation would bring about 2% increase in economic growth and vice versa. This result is in agreement with economic theory that posited that an investment in capital stock (i.e. infrastructural development) would expand the growth of the economy.

Additionally, it can also be seen from Table 7 above that the total stock of labour force (LAB) also exhibits a positive and significant impact on economic growth (GDP) in Nigeria along the long-run horizon. With a coefficient of approximately 0.37 unit and a p-value of 0.0399, the result indicates that a unit increase in the stock of labour force would bring about 37% expansion in economic growth (GDP) and vice versa. This result is in line with economic theory which postulate an increase in labour force with corresponding increase in the job availability would result into an increase in aggregate output along the long run.

Furthermore, Table 7 also revealed that the foreign direct investment (FDI) exhibit positive and significant impact on economic growth (GDP) in Nigeria along the long run. With a coefficient of approximately 1.47 unit and a p-value of 0.0063, the result implies that a unit increase in foreign direct investment would expand economic growth by approximately 1.47 unit and vice versa. This result is in line with the study of Izieni and Mohammed (2017) who in their study of institutional quality in Nigeria also found positive relationship between foreign direct investment and economic growth.

Conversely, Table 7 further revealed that the inflation rate (INF) exerts a negative and significant impact on economic growth (GDP) in Nigeria along the long run at 10% significance level. With a coefficient of approximately -0.12 unit and a p-value of 0.0962, the result indicates that a unit increase in inflation rate would bring about -12% decline in economic growth and vice versa. This result conformed to the economic theory which posited that higher

inflation rate would increase the price of goods and services which would decline the growth of the economy over the long run.

Finally, it can also be seen from Table 7 that the financial development (FID) also exhibit positive and significant impact on economic growth (GDP) in Nigeria along the long run. With a coefficient of approximately 0.17 unit and a p-value of 0.0516, the result implies that a unit increase in the financial development would bring about 17% increase in economic growth and vice versa. This result is in agreement with the work of Abubakar (2020) who in his study of institutional quality also found a positive and significant impact on financial depth on economic growth in Nigeria along the long run horizon.

**Table 8: Short-run Impact of Institutional Quality on Economic Growth in Nigeria**

<b>Dependent Variable: D(GDP)</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
<b>D(INQ)</b>	-38.991153	9.821574	-3.969950	<b>0.0041</b>
D(GCF)	0.040651	0.028038	1.449820	0.1852
<b>D(LAB)</b>	0.631469	0.276930	2.280246	<b>0.0521</b>
D(FDI)	1.428977	0.840658	1.699831	0.1276
D(INF)	-0.205368	0.113011	-1.817249	0.1067
<b>D(FID)</b>	0.605219	0.262321	2.307168	<b>0.0499</b>
<b>CointEq(-1)</b>	-0.911399	0.230435	-7.426817	<b>0.0001</b>
<b>Cointeq = GDP - (-47.0362*INQ + 0.0238*GCF + 0.3690*LAB + 1.4694*FDI -0.1200*INF + 0.1750*FID -53.0557 )</b>				

Source: Author’s Computation using Eviews, 2022

From Table 8 above, it can be seen that institutional quality (INQ) also exert negative and significant impact on economic growth (GDP) in Nigeria along the short run horizon. This implies that with a coefficient of approximately -39.0 and a p-value of 0.0041, a unit increase in institutional quality would bring about -39 unit decline in economic growth and vice versa. This result is in line with Akinkunmi (2017) who also found a short run negative relationship between institutional quality and economic growth in Nigeria.

The gross fixed capital formation (GCF) from Table 8 showcases that it exert a positive and insignificant impact on economic growth (GDP) in Nigeria over the short run horizon. With regards to a coefficient value of approximately 0.04 and a p-value of 0.1852, the result implies that a unit increase in gross fixed capital formation would bring about 4% expansion in economic growth in Nigeria and vice versa over the short period of time. This result is in agreement with economic theory that posited that an investment in capital stock (i.e. infrastructural development) would expand the growth of the economy.

Furthermore, the stock of labour force (LAB) showed a short run positive and significant impact on economic growth (GDP) in Nigeria at 10% significance level. This implies that with a coefficient of approximately 0.63 and a p-value of 0.0521, an increase in the growth of labour force would bring about 63% increase in economic growth in Nigeria and vice versa. This result is in line with economic theory which postulate an increase in labour force with corresponding increase in the job availability would result into an increase in aggregate output.

Contrary to the long-run estimate, the foreign direct investment (FDI) in Table 8 revealed a positive but insignificant impact on economic growth (GDP) in Nigeria along the short run horizon. With a coefficient of approximately 1.43 and p-value of 0.1276, the result implies that a unit increase in foreign direct investment would bring about 1.43 unit increase in economic growth and vice versa over the short run. This result aligned with the study of Ubi and Udah (2014) who in their study of institutional quality and economic growth in Nigeria also found a

positive relationship between foreign direct investment and economic growth in Nigeria along the short run.

Conversely, Table 8 further revealed that the inflation rate (INF), like the long run also exerts a negative but insignificant impact on economic growth (GDP) in Nigeria along the short run horizon. With a coefficient of approximately -0.21 unit and a p-value of 0.1067, the result indicates that a unit increase in inflation rate would bring about -21% decline in economic growth and vice versa along the short run. This result conformed to the economic theory which posited that higher inflation rate would increase the price of goods and services which would decline the growth of the economy.

Furthermore, it can also be seen from Table 8 that the financial development (FID), like the long run also exhibit positive and significant impact on economic growth (GDP) in Nigeria along the short run. With a coefficient of approximately 0.61 unit and a p-value of 0.0499, the result implies that a unit increase in the financial development would bring about 61% increase in economic growth and vice versa along the short run.

Finally, the result in Table 8 also revealed that the coefficient of error correction mechanism is negatively approximate to -0.91 unit and with a p-value of 0.0001. This indicates that ECM is negative and statistically significant at 1% confirming the long-run relationship among variables. This also implies fast speed of adjustment, as it shows that about 91% of discrepancy in the previous year's shocks will converge back to the long-run equilibrium in the current year. In conclusion, the above analysis revealed that institutional quality exert a negative and significant influence on economic growth in Nigeria in both the short-run and the long-run horizon.

**Post Estimation Tests**

As far as this study is concerned, post estimation test is carried out to assess if the model suffer from serial correlation, Heteroskedasticity, normality, misspecification and structural instability problem. The autocorrelation test was performed with Breusch-Godfrey serial correlation LM test, Heteroskedasticity test was performed with ARCH-LM test, the normality test employed Jarque Bera test statistic, specification test was carried out with Ramsey RESET test, and the structural stability test was performed with CUSUM, CUSUM-SQUARE, and AR inverse root characteristics polynomial test.

**Table 9: Autocorrelation Test**

<b>Breusch-Godfrey Serial Correlation LM Test:</b>			
<b>F-statistic</b>	1.404678	Prob. F(1,7)	0.2746
<b>Obs*R-squared</b>	3.175479	Prob. Chi-Square(1)	0.0748

Source: Author's Computation using Eviews, 2022

Table 9 reveals that with F-stat probability of 0.2746 and Chi-square probability of 0.0748, the null hypothesis of no serial correlation cannot be rejected at 5% significance level. Consequently, the model is said to be free from serial correlation problem.

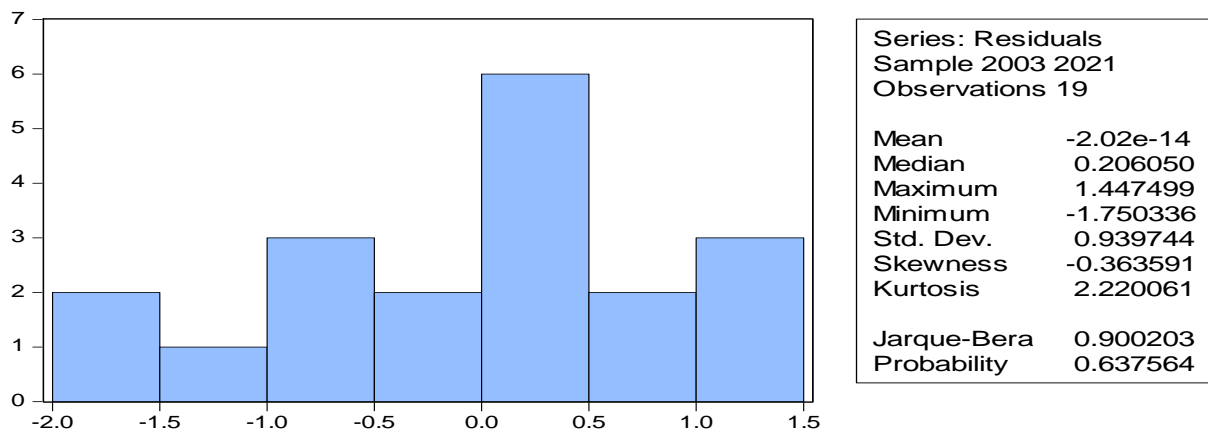
**Table 10: Heteroskedasticity Test**

<b>Heteroskedasticity Test: ARCH</b>			
<b>F-statistic</b>	1.724160	Prob. F(1,16)	0.2077
<b>Obs*R-squared</b>	1.750993	Prob. Chi-Square(1)	0.1858

Source: Author's Computation using Eviews, 2022



Table 10 reveals that with F-stat probability of 0.2077 and Chi-square probability of 0.1858, the null hypothesis of homoscedasticity cannot be rejected. Consequently, the model is said to be free from Heteroskedasticity problem.



**Figure 1: Normality Test**

Source: Author’s Computation using Eviews, 2022

Figure 1 reveals that with a Jarque-Bera statistic approximately to 0.90 and probability value of 0.637564, the null hypothesis of the residuals are normally distributed cannot be rejected. Therefore, this model is free from abnormality problem.

**Table 11: Specification Test**

	Value	df	Probability
<b>t-statistic</b>	0.642519	7	0.5410
<b>F-statistic</b>	0.412831	(1, 7)	0.5410

Source: Author’s Computation using Eviews, 2022

Table 11 shows that with T-statistic probability of 0.5410, and F-statistic probability of 0.5410, the null hypothesis of no specification problem cannot be rejected. Consequently, the model is said to be correctly specified to fit the necessary estimations.

### CONCLUSION AND RECOMMENDATION

In line with the first objective of this study, the trend of institutional quality proxied by the voice and accountability (VAC), political stability and absence of violence/terrorism (AVT), government effectiveness (GEF), regulatory quality (REQ), rule of law (RUL), and control of corruption (COC) are weak. In other words, the trends show that all the institutional quality indices recorded negative indices throughout the period under study. Furthermore, the trend of institutional quality proxied by the averages of world governance indices showed unstable fluctuations for the period under review. Although, there have been an improvement in the quality of institutions from 2004 to 2021. Finally, the gross domestic product growth rate exhibits a downward trend pattern with an initial peak in 2002 which was subsequently followed by declining levels of economic growth in Nigeria.

The descriptive statistics revealed that from 1996 to 2021, the gross domestic product growth rate (GDP), institutional quality (INQ), gross fixed capital formation (GCF), total stock of labour force (LAB), foreign direct investment (FDI), inflation rate (INF), and financial development (FID) showed an approximate mean value of 5.04, -1.12, 3.21, 2.02, 1.39, 12.63, and 18.48 respectively. The maximum values of the variables are approximately 15.30, -1.13, 2.55, 2.54, 1.37, 12.22, and 21.35 respectively; with their minimum values approximately

ranging between -1.80, -1.27, -21.90, -1.98, 0.20, 5.39, and 8.46 correspondingly. The standard deviation revealed that the highest standard deviation of (12.86269) was recorded by GCF, while the least standard deviation of (0.081742) was recorded by INQ. The Skewness statistic from the table showed that GDP, INQ, GCF, FDI, and INF are positively skewed, while LAB and FID are negatively skewed. The kurtosis coefficients showed that only FDI and FID are platykurtic, while GDP, INQ, GCF, LAB, and INF are leptokurtic. Finally, the probability of the Jarque-Bera statistic revealed only LAB and INF are below the p-value of 0.05, while GDP, INQ, GCF, FDI, and FID were above the 5% significance level. Additionally, the correlation result revealed that the independent variables GCF, LAB, and FDI have low and moderate positive correlations of approximately 17%, 10%, and 63% respectively with the dependent variable (GDP), whereas INQ, INF, and FID have low and moderate negative correlations of approximately -71%, -11%, and -44% with GDP accordingly.

The unit root test of stationarity revealed that GDP, INQ, FDI, and FID are non-stationary at level I(0) for both ADF and PP test using the case of constant intercept, as their respective critical values are less than 5% MacKinnon critical value. However, after the difference of the variables were taken, they were found to be stationary at first difference I(1) for both ADF and PP tests with p-values less than 5% significant level. Notably, GCF, LAB, and INF were found to be stationary at level I(0). Following the lag selection criteria test, the result showed that all the information criterion (LR, FPE, AIC, SC, and HQ) selected lag 1 as the maximum lag length. Based on the F-bounds cointegration test result, it was concluded that there is evidence of a long-run relationship among the variables incorporated in the model.

With regards to the long-run analysis, the result revealed that institutional quality (INQ) exerts negative and significant impact on economic growth (GDP) in Nigeria with a coefficient of approximately -47.04 unit and a p-value of 0.0001. Conversely, the gross fixed capital formation (GCF) exerts a positive but insignificant impact on economic growth (GDP) in Nigeria along the long run horizon with a coefficient of approximately 0.02 unit and a p-value of 0.1567. Additionally, the total stock of labour force (LAB) also exhibits a positive and significant impact on economic growth (GDP) in Nigeria along the long-run horizon with a coefficient of approximately 0.37 unit and a p-value of 0.0399. Furthermore, the foreign direct investment (FDI) exhibit positive and significant impact on economic growth (GDP) in Nigeria along the long run with a coefficient of approximately 1.47 unit and a p-value of 0.0063. Conversely, the inflation rate (INF) exerts a negative and significant impact on economic growth (GDP) in Nigeria along the long run at 10% significance level, and with a coefficient of approximately -0.12 unit and a p-value of 0.0962. Finally, the financial development (FID) also exhibit positive and significant impact on economic growth (GDP) in Nigeria along the long run with a coefficient of approximately 0.17 unit and a p-value of 0.0516.

In line with the short-run analysis, the institutional quality (INQ) also exert negative and significant impact on economic growth (GDP) in Nigeria with a coefficient of approximately -39.0 and a p-value of 0.0041. Conversely, the gross fixed capital formation (GCF) exert a positive and insignificant impact on economic growth (GDP) in Nigeria over the short run horizon with regards to a coefficient value of approximately 0.04 and a p-value of 0.1852. Furthermore, the stock of labour force (LAB) showed a short run positive and significant impact on economic growth (GDP) in Nigeria at 10% significance level with a coefficient of approximately 0.63 and a p-value of 0.0521. Contrary to the long-run estimate, the foreign direct investment (FDI) revealed a positive but insignificant impact on economic growth (GDP) in Nigeria along the short run horizon with a coefficient of approximately 1.43 and p-value of 0.1276. Conversely, the result further revealed that the inflation rate (INF), like the long run also exerts a negative but insignificant impact on economic growth (GDP) in Nigeria along the short run horizon with a coefficient of approximately -0.21 unit and a p-value of 0.1067. Furthermore, the financial development (FID), like the long run also exhibit positive and

significant impact on economic growth (GDP) in Nigeria along the short run with a coefficient of approximately 0.61 unit and a p-value of 0.0499. Finally, the coefficient of error correction mechanism (ECM) is negatively approximate to -0.91 unit and with a p-value of 0.0001 which indicates that ECM is negative and statistically significant at 1% confirming the long-run relationship among variables. In conclusion, the result of the above analysis revealed that institutional quality exhibit negative and significant impact on economic growth in Nigeria along both the long-run and the short-run horizon.

### POLICY RECOMMENDATIONS

From the above conclusion, it is recommended that the Nigerian government should prioritize the followings:

1. Considering the negative and significant impact on institutional quality on economic growth in Nigeria along the long-run and short-run horizon, the Nigerian government should adopts policies and strategies that can improve the quality of institutions in the country. This can be achieved through rigorous anti-corruption campaign, more accountability and freedom of expression, strengthened regulatory authority, and improved government effectiveness through better leadership selection processes. The policymakers should also prioritize improved and sustained law and order to ensure stable and accelerated growth of Nigeria economy.
2. With regards to the positive and significant impact of financial development on economic growth in Nigeria along the long-run and short-run horizon, the federal government should employ policy that will improve and strengthen the financial sectors of the economy in order enhance investment climate and boost the foreign direct investment of the country which also exhibit positive and significant impact on economic growth in Nigeria along the long run horizon.
3. Given the negative impact on inflation rate on economic growth in Nigeria along the long run and short run horizon, the Nigerian government should formulate policy to reduce inflation to the lowest possible and acceptable level to boost productive output of labour and capital stock of industrial sectors which also exhibit positive relationship with economic growth in Nigeria.

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