# Institutional Quality, Government Expenditure and Economic Growth Nexus in Nigeria

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| Low economic growth often correlates with the escalation of poverty, deindustrialization, unemployment, a decline in living standards, inadequate investments in human capital, and heightened social and economic disparities. Therefore, comprehending the factors that contribute to economic growth is essential for steering an economy in the correct direction. The economic literature has identified institutional quality and government expenditure as factors that drive economic growth. This study specifically examines the impact of government expenditure and institutional quality on economic growth. The study employed the Dynamic Ordinary Least Squares (DOLS) method to analyse time series data from 1990 to 2022. The findings indicate that government spending has a substantial and favourable effect on economic growth. Furthermore, the findings demonstrated that the presence of institutions had a substantial and favourable impact on the economic development of Nigeria. According to these findings, the study suggests that |

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*government spending should be consistently increased, but this should be accompanied with fiscal discipline through the execution of the regulatory framework of the Nigerian government.*

### 1.Introduction

Economic growth is a primary objective of macroeconomics and serves as a metric for evaluating the overall performance of an economy. Economic growth refers to the rise in the real value of goods and services generated by an economy over a period of time (Sule, 2020). According to Nwokoye, Igbanugo, and Dimnwobi (2020), stable growth is crucial since it contributes to the attainment of other macroeconomic goals, including poverty reduction, decreased unemployment, and enhanced public services. Nigeria's economic growth exhibits various distinguishing features. During the late 1980s, the economy rebounded from a recession that occurred in the early 1980s and experienced a significant growth rate of up to 6.4%. From 1990 to 1999, the growth rate decreased to an average of 2.6%. From 2000 to 2014, the economy experienced an average growth rate of 7.9%, reaching its peak levels in 2002 and 2004. The economic growth has been consistently weak in 2015, declining from 6.2% in 2014 to 2.8% in 2015 and further dropping to -1.6% in 2016. In 2020, the Nigerian economy saw a negative growth rate of -1.9%

The literature extensively records numerous factors that contribute to economic growth. One example of such drivers is government expenditure. The correlation between government expenditure and economic growth continues to be a very relevant and debated topic in development studies. The concept of the impact of government expenditure on economic growth was introduced by Keynes (1936), who argued that government spending contributes to the enhancement of economic growth (Hasnul, 2015). Advocates of the Keynesian hypothesis contend that effectively utilising public resources can optimise the productive capacity of the economy and stimulate growth. Nevertheless, critics of the Keynesian theory (Barro, 1990) contend that higher government expenditure can hinder economic growth. They propose that government spending has the capacity to diminish growth by displacing private-sector spending, particularly when the spending is financed through borrowing (Kandil, 2006; Onifade, et al., 2020). The Nigerian government's involvement in economic activity has significantly expanded, leading to an escalation in the issues faced by public officials. Public spending has had a consistent increase over the years, particularly in the past two decades. The Nigerian government's overall expenditure saw irregular growth, increasing from approximately ₦60.3 billion in 1990 to approximately ₦10.164 trillion in 2020 (CBN 2020).

Institutional quality is a crucial factor that significantly contributes to economic progress. The relationship between the quality of institutions and economic growth has been extensively studied in both emerging and industrialised economies. This is because every economy is interconnected and influenced by external factors. Key institutional factors significantly influence the development of any economy. The economic stagnation in most developing countries has been attributed to various factors, including disregard for the rule of law, inadequate government regulations, limitations on civil liberties (such as the right to organise demonstrations, freedom of

speech, freedom of religious association, education, travel, and other individual rights), restricted political rights and participation, and pervasive corruption (Iheonu, Ihedimma & Onwuanaku, 2017; Ogbuabor et al. 2019). Egbetunde and Akinlo (2015) asserted that the economies of Sub-Saharan Africa (SSA) are unable to achieve enduring growth without robust institutions. According to Anthony-Orji, et al., (2019) and Benyah (2010), institutional quality refers to the extent to which regulatory bodies' procedures promote investor protection and provide increased access to funds for borrowers. Levine (1998) defined institutional quality as the adherence to legal regulations and emphasised that a lack of clear laws regarding investor protection, property rights enforcement, and effective regulation hinders any economy from achieving long-term prosperity. The average institutional quality in Nigeria has been declining. Table 1.1 provides an overview of the institutional progress of certain Sub-Saharan African (SSA) countries. This progress is measured through ratings of various factors such as voice and accountability, political stability, rule of law, government effectiveness, regulatory effectiveness, and control of corruption. These ratings are obtained from the Worldwide Governance Indicators (WGI), where scores range from -2.5 to +2.5. Higher scores indicate stronger or more favourable institutions. According to the table, Nigeria had a low performance over the time, with largely negative scores in terms of upholding the rule of law, preventing corruption, and other variables analysed. Alternatively, the low scores also suggest and support the idea that Nigeria has a legislative and institutional framework that hinders development outcomes.

**Table 1.1: Institutional Quality (IQ) Measures - Average Scores (1996-2022), for Selected SSA countries**

| Country | Control of Corruption | Government Effectiveness | Political Stability and Absence of Violence/Terrorism | Regulatory Quality | Rule of Law | Voice and Accountability |
|---|---|---|---|---|---|---|
| Mauritius | 0.37 | 0.71 | 0.90 | 0.68 | 0.96 | 0.87 |
| Botswana | 0.94 | 0.53 | 1.02 | 0.59 | 0.64 | 0.57 |
| South Africa | 0.29 | 0.54 | −0.13 | 0.49 | 0.14 | 0.66 |
| Gabon | −0.83 | −0.68 | 0.29 | −0.40 | −0.50 | −0.76 |
| Cape Verde | 0.78 | 0.10 | 0.86 | −0.15 | 0.57 | 0.83 |
| Namibia | 0.36 | 0.15 | 0.71 | 0.14 | 0.19 | 0.39 |
| Ghana | −0.15 | −0.08 | −0.03 | −0.09 | −0.01 | 0.29 |
| Nigeria | −1.17 | −1.02 | −1.77 | −0.88 | −1.19 | −0.76 |

**Source: Authors Compilation using data from World Governance Indicators (WGI)**

This study investigates the influence of institutional quality and government expenditure on economic growth, taking into account the existing circumstances.

**1.1 Statement of the Problem**
Enhancing economic growth is the most potent means of reducing poverty and enhancing living standards in developing nations (Dimnwobi, et al., 2021; Nwokoye, et al., 2022; Okafor, et al., 2022). Both international comparative research and in-depth examinations of individual countries demonstrate that achieving quick and consistent economic expansion is crucial for accelerating advancements towards sustainable development. Expansion possesses the capacity to generate cycles of wealth and opportunity. Hence, the fundamental macroeconomic objective of any country is to uphold robust and consistent economic expansion across all sectors of the economy.

The imperative for expansion is perhaps of greater significance for developing nations than for industrialised ones. Nigerian administrations have implemented a range of policies and programmes over the years to acknowledge the significance of sustainable economic growth. Notwithstanding these policies and programmes, Nigeria's growth rate of 2.2% in 2019 is notably below the average growth rate of Sub-Saharan Africa (2.6%) as well as the global average (2.6%) (World Bank, 2020). Multiple factors have been identified that exert an influence on economic growth. Government expenditure and institutional quality are the most significant factors. Nigeria's institutions are declining despite the increasing trend of government spending in the country.

This work is a valuable addition to the existing body of literature. This study represents the initial attempt to examine the influence of government expenditure and institutional quality on economic growth, as far as our understanding goes. The study is significant and urgent because, despite the recognition of the significance of government expenditure and institutional quality in existing literature, there is a notable absence of scholarly discourse on their impact on economic growth within a single study. Furthermore, the research utilised dynamic ordinary least squares (DOLS). The selection of DOLS is determined by the resilience characteristics of the method, which circumvents the limitations of conventional procedures. Furthermore, in contrast to other research, we incorporated various control factors, including price level, labour, technology, and oil revenue, which have substantial impacts on economic growth. Finally, we utilised extensive datasets that encompassed the timeframe of significant transformations in institutional reforms, government spending, and economic growth in Nigeria.

Given the above, the study is guided by the following research objectives:
  i.     To ascertain the impact of institutional qualityon economic growth in Nigeria
  ii.    To examine the effect of government expenditureon economic growth in Nigeria


## 2. Literature review
### 2.1 Conceptual Literature
Akobeng (2016) provided a definition of economic growth as the consistent and prolonged rise in a nation's actual income over an extended duration. Economic growth refers to a sustained increase in the value of a country's net national products, adjusted for inflation. According to Kebede and Takyi (2017), economic growth refers to the rise in the real value of goods and services generated by an economy, after accounting for inflation, as time progresses. Economic growth can be defined as the long-term expansion of the goods and services generated by an economy, usually at the national level.

Government expenditure is a crucial element of economic strategy, employed by governments as an effective instrument to stimulate robust and enduring growth. The recurring expenditure component of the government budget includes all expenses related to salaries, wages, administration, current grants, subsidies, and transfer payments. The term "government final consumption expenditures" refers to the spending made by the government, excluding transfer payments (Onifade, Çevik, Erdoğan, Asongu & Bekun, 2020). Another factor to consider is the capital expenditure, which encompasses all government spending on long-lasting items or to facilitate further manufacturing. According to Abomaye-Nimenibo and Samuel (2020), capital

expenditure refers to the allocation of government funds for the acquisition, maintenance, upgrading, improvement, or extension of long-term assets. These assets usually comprise property, infrastructure, or equipment that have a useful life of more than one year. The total government spending is the combined amount of recurring and capital expenditure. Public expenditure is a potent instrument for attaining inclusive economic growth.

Conversely, North (1991) argued that institutions are the deliberately created limitations that organise political, economic, and social exchanges. They encompass a combination of informal limitations (such as punishments, taboos, customs, traditions, and codes of conduct) and formal regulations (including constitutions, laws, and property rights). Throughout history, humans have created institutions to establish order and minimise uncertainty in transactions. In conjunction with the conventional limitations of economics, these factors establish the range of options available and thus influence the expenses associated with transactions and output, ultimately impacting the profitability and viability of participating in economic endeavours. North (1991) posits that the presence of diverse institutions has a crucial role in shaping economic outcomes within a community. Therefore, when formulating policies, it is important to examine the specific institutional conditions. It is imperative to safeguard and ensure the financial gains of economic entities in order to get a more favourable economic result.

## 2.2 Review of Basic Theory
### 2.2.1 Endogenous Growth Theory
The endogenous growth theory, commonly referred to as the new growth theory, is a crucial element in developing development theory. Paul Romer formulated this idea in a groundbreaking publication on the modern rejuvenation of growth theory, which was published in the Journal of Political Economy in 1986. Additional proponents of this idea comprise Lucas (1988), Rebelo (1991), Ortigueira and Santos (1997), along with Harrod and Domer. This idea represents an extension and alteration of the conventional growth theory. It emerged in the mid-1980s as a response to the dissatisfaction of a group of growth theorists with the prevailing explanations provided by neoclassical theories, which assert that external forces influence long-term economic growth. Therefore, the new growth theories challenged the neoclassicists' views and provided a rationale for why long-term economic growth can vary between countries and why capital tends to move from poorer nations to wealthier ones, despite the lower capital ratio in the former. The theory also elucidates the variables that govern the unaccounted-for amount of GDP growth (Solow residual) and are externally dictated in the Solow Neoclassical growth equation (Acemoglu, 2008).

Assuming a consistent marginal capital product at an overall level and the absence of diminishing returns to capital (including human and knowledge capital), a constant and externally determined savings rate, a production function that does not exhibit decreasing returns to scale, and the presence of external economies and productivity enhancements resulting from investments in human capital that counteract the inherent tendency for diminishing returns to scale. According to the endogenous growth theory, productivity enhancements are a result of increased innovation and investment in human capital (Okonji, 2018). Put simply, the theorists contended that investing in human capital, knowledge, and innovation has a vital role in driving economic progress. They emphasised that these elements are primarily internal and not influenced by external pressures. The theory posits that economic growth is driven by internal factors and argues that sustained

increases in GDP are the outcome of beneficial external influences stemming from policy actions that foster innovation and the dissemination of knowledge.

## 2.3 Empirical Literature
The empirical literature is categorised into two primary branches. One strand of research examines the relationship between institutional quality and economic growth, whereas the other strand focuses on the link between government expenditure and economic growth.

### 2.3.1Institutional Quality and Economic Growth
Mijiyawa (2013) conducted a study to identify the elements that influenced Africa's economic performance. The study found that government efficacy played a significant role in driving growth between 1996 and 2010. Anyanwu (2014) further shown that Africa's economic growth between 1996 and 2010 was notably influenced by the level of government effectiveness. Anyanwu and Yaméogo (2015) and Mijiyawa (2015) discovered that political instability acts as a barrier to the influx of foreign direct investment (FDI) into Africa, hence obstructing economic growth. Akobeng (2016) discovered that the calibre of bureaucracy, government accountability, and robust rules and policies played a substantial role in the relationship between economic growth and poverty in Sub-Saharan Africa (SSA). Chikalipah (2017) and Malikane and Chitambara (2017) have demonstrated that robust institutions play a significant role in fostering economic progress in Africa. Iheonu et al. (2017) examined how the quality of institutions influenced the economic success of a group of West African countries between 1996 and 2015. They used a panel of 12 countries in West Africa for their analysis. The study employed institutional-quality indicators and applied fixed effect, random effect, and panel two-stage least squares models (2SLS). The findings indicated that the impact of government effectiveness on the outcome variable became statistically significant only when the panel 2SLS model was employed to address the issue of endogeneity. The fixed and random effect models demonstrated that all of the variables related to institutional quality had a positive and significant impact on economic performance.

In their study, Wanjuu and Le Roux (2017) discovered that the level of economic growth in the Economic Community of West African States (ECOWAS) sub-region is significantly influenced by the extent to which property rights are protected, as measured by economic institutions. Additional research has demonstrated that the calibre of institutions has a crucial role in driving economic progress in Africa (Kandil 2009; Amin 2013; Kilishi et al. 2013; Ojapinwa 2017; Kebede & Takyi 2017). In a study conducted by Sule (2020), ordinary least squares (OLS) regression was used to examine the impact of institutional quality on economic growth in Nigeria from 1979 to 2018. The findings of the study indicate that institutional quality has a substantial influence on economic growth. In their 2021 study, Alabedb, Karim, Sai, and Zaidi investigated the correlation between institutional quality and economic growth in Jordan from 1996 to 2017. The study revealed a substantial and favourable association between institutional quality and both long-term and short-term economic growth.

While the previous paragraphs demonstrated the positive impact of institutional quality on economic growth, there are also studies that suggest institutional quality can hinder growth. This particular body of literature concentrates on these studies. Mauro (1995) discovered that corruption had a negative impact on investment, leading to a subsequent decrease in economic growth. According to Diop et al. (2010), the presence of feeble institutions and inadequate governance acts

as obstacles to economic progress in the ECOWAS sub-region. In their study, Ogbuabor, Onuigbo, Orji, and Anthony-Orji (2020) utilised the ARDL approach to analyse the relationship between institutional quality and economic growth in Nigeria from 1981 to 2016. The findings of the study indicate that institutional quality has a negative impact on growth in Nigeria, but this impact is not statistically significant, both at the overall and sectoral levels. Ogbuabor, Orji, Manasseh, and Anthony-Orji (2020) conducted a study to evaluate the impact of institutional quality on economic growth in West Africa following the Great Recession. They used a panel of 13 countries and employed the system generalised method of moments (GMM) and the panel two-stage least squares (2SLS) estimation techniques within the framework of a cross-country growth model. Their findings primarily demonstrated a substantial inverse correlation between institutional quality and economic growth in West Africa. The study identified corruption, government ineffectiveness, insufficient regulatory quality, political instability, lack of rule of law, and absence of accountability as factors that impede growth in the sub-region.

### 2.3.2 Government Expenditure and Economic Growth
Ebong, et al., (2016) conducted a study to analyse the influence of capital and recurrent expenditure on economic growth in Nigeria from 1970 to 2012, utilising the Vector Error Correction Model (VECM). The findings indicate that investing in infrastructure has a favourable and considerable impact on economic growth, both in the short term and in the long term. Dikeogu et al. (2016) utilised Ordinary Least Squares (OLS) and Error Correction Model (ECM) techniques to analyse the relationship between aggregate government expenditure and economic growth in Nigeria from 1970 to 2013. However, their findings did not reveal any statistically significant impact of government expenditure on the country's economic growth. In their study, Usman et al. (2016) utilised cointegration and VECM methodology to establish a statistically significant and positive linear correlation between government recurrent and capital expenditure in Nigeria over the long term. Ugwanyi and Ogwunta (2017) employed panel generalised method of moments (GMM) and least squares regression techniques to analyse data from sub-Saharan African countries (SSAs). The findings suggest that government spending on productive activities has a major influence on Sub-Saharan African economies, whereas maintaining balanced budgets has a detrimental effect on these economies.

Alexiou (2009) conducted panel data analysis on seven transition economies in Southeast Europe and found evidence supporting the positive and large influence of government spending on the economic growth of these countries. Liu et al. (2008) used the Granger causality test to analyse data from 1947 to 2002 in the United States. Their findings indicated that there is a one-way causal relationship from public expenditure to GDP. Olugbenga and Owoye (2007) used ordinary least squares (OLS) and Granger causality test to analyse a sample of 30 OECD nations from 1970 to 2005. They found evidence of one-way causality from economic development to public expenditure in 10 countries, which supports Wagner's law. Subsequently, they established a clear and one-way relationship where public expenditure directly influenced the economy of 16 countries. In their study, Kapunda and Topera (2013) employ Ordinary Least Squares (OLS) regression analysis to examine the period from 1965 to 2010. They find that both capital expenditure and terms of trade exert a statistically significant positive influence on Tanzania's economic growth. Egbetunde and Fasanya (2013) conducted a study utilising autoregressive distributed lag (ARDL) analysis to examine the relationship between public expenditure and growth in Nigeria from 1970 to 2010. Their findings revealed a negative influence of public

expenditure on economic growth in Nigeria. Olayungbo and Olayemi (2018) employed a Vector Error Correction Model to analyse Nigerian data from 1981 to 2015. They found that government expenditure has a detrimental and statistically significant effect on economic growth, both in the short term and the long term.

Ahuja and Pandit (2020) investigated the correlation between public expenditure and economic growth by using a dataset that encompassed 59 nations from 1990 to 2019. The study has verified the one-way relationship between economic growth and government expenditure, specifically that public spending has a causal effect on GDP growth. The overall findings strongly endorse the Keynesian perspective, which emphasises the significance of government spending in fostering economic expansion. Onifade, Çevik, Erdoğan, Asongu, and Bekun (2020) utilised auto-regressive distributed lag models to analyse the effects of public spending on economic growth within the Nigerian economy between 1981 and 2017. The findings indicate that both the government's recurrent expenditures and public debt exert substantial adverse effects on economic growth, whereas the government's capital expenditure has a positive, albeit inconsequential, impact on the long-term economic growth of the country. Aluthge, Jibir, and Abdu (2021) conducted a study to examine the influence of Nigerian government spending (divided into capital and recurrent) on economic growth. They utilised time series data from 1970 to 2019. The research utilises the Autoregressive Distributed Lag (ARDL) model. In order to assure the accuracy and reliability of the findings, the study takes into consideration any significant changes in the underlying structure during the unit root test and co-integration analysis. The study's main conclusions indicate that capital investment has a noteworthy and beneficial influence on economic growth, both in the short term and the long term. Conversely, recurrent expenditure does not have a major impact on economic growth, regardless of the time frame.

### 3. Methodology
### 3.1 Theoretical Framework
This study is based on the theoretical framework of endogenous growth theory. Endogenous growth theory suggests that growth accounting might incorporate additional components, beyond capital and labour, to explain economic growth. Unlike neoclassical models, which argue that only the dynamics of capital and labour can be internally determined in growth accounting, endogenous models suggest that the dynamics of additional variables that impact economic growth (such as leisure, human resources, institutions, and government spending) can be incorporated into growth accounting. We utilise the models of endogenous growth proposed by Devarajan et al. (1996) and Akobeng (2016) in this work. The model establishes a connection between governmental expenditure and economic expansion. The model differentiates between expenditures that generate value and those that do not. Within this perspective, productive expenditure is linked to a favourable outcome in terms of economic growth, whereas unproductive expenditure has a detrimental effect on income growth. The concept distinguishes between productive and unproductive expenditure based on their impact on a country's growth rate. The model is based on the assumption of Cobb Douglas's production function. Equation 3.1 illustrates the factors that contribute to production, namely private capital (k), productive expenditure (GA), and unproductive spending (GB).

$$Y = (K^{\alpha}, L^{\beta}, G_A{}^{\phi}, G_B{}^{\varphi}) \qquad 3.1$$

Where $\alpha + \beta = 1$ and $0 < \phi, \varphi < 1$

Taking the log and derivative of Equation 3.1 with respect to time yields:

$$y = \alpha k + \beta l + \phi g_a + \varphi g_b \qquad\qquad 3.2$$

*Where y = economic growth, k = growth rate of capital, l = growth rate of labour, $g_a$ = growth rate of productive capital and $g_b$ = growth rate of unproductive capital.*

Nawaz, et al., (2014) observed that the quality of institutions has the potential to limit the improper use of government funds and guarantee that government expenditure is effective. However, in the event of inadequate institutions, public resources may be directed towards the unproductive sector, resulting in a decline in economic growth. Conversely, robust institutions bolster economic expansion. According to Chong and Gradstein (2007), robust institutions can mitigate rent-seeking behaviour, leading to an acceleration of economic growth. If we make the assumption that there exists a robust institution, it follows that there will be no expenditure allocated to the unproductive sector. To clarify, all government spending (ge) will be directed into the productive sector. Equation 3.2 is reformulated as follows:

$$y = \alpha k + \beta l + \eta ge + \sigma IQ \qquad\qquad 3.3$$

Where $g_a + g_b = ge$ and IQ = institutional quality and $\alpha, \beta, \eta, \sigma > 0$

## 3.2. Model Specification

Consistent with Equation 3.3 outlined in the theoretical framework, the economic growth model will be defined in discrete time as follows:

$$y_t = \alpha_0 + \alpha_1 CAP_t + \alpha_2 LAB_t + \alpha_3 GE_t + \alpha_4 IQ_t \qquad\qquad 3.4$$

According to Abu-Bader and Abu-Qarn (2013), incorporating the price level into growth models enhances their resilience. Furthermore, Keefer and Knack (2017) contend that in the majority of economies reliant on resources, the income generated from these resources plays a crucial role in the growth model. In the Nigerian context, the model would incorporate the oil revenue (OILR) and the general price level (PR). Therefore, establishing the model using the dynamic ordinary least squares (DOLS) framework. Equation 3.4 can be expressed as:

$$\begin{aligned} y_t &= \alpha_0 + \alpha_1 CAP_t + \alpha_2 LAB_t + \alpha_3 GE_t + \alpha_4 IQ_t \\ &\quad + \alpha_5 PR_t + +\alpha_4 OILR_t + \varepsilon_t \end{aligned} \qquad\qquad 3.5$$

Where $\alpha_0$ is the intercept, $\alpha_i$ is the ith slope parameter of the ith variable in the model while $\varepsilon$ is the white noise such that $\varepsilon \sim (0, \sigma)$

## 3.3 Estimation Technique and Procedure

The study utilised dynamic ordinary least squares (DOLS) to derive long-term estimates of the research models. The selection of DOLS is determined by the technique's robust characteristics. Stock and Watson (1996) pointed out that DOLS estimation avoids the limitations of the OLS estimation method. Research has confirmed that ordinary least squares (OLS) parameter estimations can be distorted in small samples and when dynamic effects are present, and this distortion is inversely related to the sample size.

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This entails examining the time series characteristic of the data to determine the presence or absence of a unit root, which indicates non-stationarity. A stationary series is characterised by a consistent mean, consistent variance, and consistent autocovariance at each lag. We utilised the augmented Dicker-Fuller (ADF) approach and the Philip-Perron (PP) technique in this work. The Augmented Dickey-Fuller (ADF) method addresses serial correlation by employing a parametric process, whereas the Phillips-Perron (PP) method tackles the same issue through non-parametric procedures.

An essential requirement for conducting the co-integration test is that the time series under consideration should have the same level of integration. For instance, if series Y is integrated of order 1 (I(1)), then series X should also be integrated of order 1 (I(1)). Alternatively, if series Y is integrated of order d (I(d)), then series X should also be integrated of order d, where d is a consistent value. If the series is stationary at the level, a standard regression can be performed without the possibility of spurious regressions. According to Harris (1995), if two series have an integration order of I(1) and the residuals obtained from regressing them have an integration order of I(0), then the two series are said to be co-integrated. This suggests that while each series may separately lack stationarity, their linear combination can exhibit stationarity. This study utilises the Phillips-Ouliaris, PQ, (1990) cointegration test. This approach is favoured because to its effectiveness in few samples. It also produces strong results when series of distinct orders are combined.

The study utilised secondary data due to its inherent characteristics. The study obtained secondary data from the statistical bulletin of the Central Bank of Nigeria and the World Development Indicator (WDI).

## 4. Presentation of data and discussion of Results

### 4.1 Test of Stationarity

A unit root test was used to assess the stationarity of the series. This is a test to determine if a series is stationary or not. It involves testing the null hypothesis that the series has a unit root, which would indicate non-stationarity. The study employed stationarity tests, specifically the Augmented Dickey-Fuller test and the Phillips-Perron test, to examine whether a unit root exists in the time series. The outcome is succinctly reported in Table 4.1.

**Table 4.1: Unit Root Test**

| | ADF Test[++] | | Philip-Perron Test [++] | |
|---|---|---|---|---|
| Variable | ADF statistics | Order of Integration | PP statistics | Order of Integration |
| Capital (CAP) | -4.548*** | I(1) | -4.380*** | I(1) |
| Labour (LAB) | -6.058*** | I(1) | -6.154*** | I(1) |
| Government expenditure (GE) | -26.355*** | I(1) | -25.872*** | I(1) |
| Institutional Quality (IQ) | - 8.578*** | I(1) | -4.554*** | I(1) |
| Economic Growth (EG) | -5.463*** | I(0) | -9.619*** | I(0) |
| Technology (TK) | -8.671*** | I(1) | -8.452*** | I(1) |
| Oil Revenue (OILR) | -7.428*** | I(1) | -7.403*** | I(1) |
| Price Level | -4.278*** | I(1) | -16.479*** | I(1) |

Source: Researchers' estimations using Eview 10

*,** and *** implies statistical significance at 10%, 5% and 1% respectively. ++ ADF/PP critical is -3.196 (10%), -3.53 (5%), -4.21 (1%)*

The results indicate that all the series are integrated at order one (I(1)), except for economic growth (EG) which is stationary at level (I(0)). This finding aligns with the research conducted by Griffith et al (2012), which posits that economic growth statistics typically exhibit stationarity at a certain level, while GDP tends to display integration of order one.  This finding further supports the conclusion made by Martin et al (2017) that time series are integrated processes or manifestations of nonstationary processes. Given that the time series are manifestations of nonstationary processes, we will now proceed to examine cointegration in the subsequent section.

### 4.2 Cointegration Test
The Phillip-Quliaris cointegration framework was utilised to examine the presence of cointegration or the existence of a long-term equilibrium relationship among the variables to be assessed. The null hypothesis posits that there is no cointegration between the variables. In order to refute the null hypothesis, the Phillip-Quliaris cointegration matrix must demonstrate the presence of at least one cointegrated connection or equation. An equation is considered cointegrated if the likelihood of both the tau-statistic and z-statistics is less than 0.05. If either the tau-statistic or the z-statistic is less than 0.05, the result is considered inconclusive.

**Table 4.2 Summary of Philip-Quliaris Cointegration Test**

| Dependent | tau-statistic | Prob.* | z-statistic | Prob.* | Remarks |
|---|---|---|---|---|---|
| CAP | -16.2186 | 0.0088 | -45.6287 | 0.0000 | Cointegrated relations |
| LAB | -41.0969 | 0.0000 | -70.7391 | 0.0000 | Cointegrated relations |
| GE | -17.2136 | 0.0021 | -46.6535 | 0.0000 | Cointegrated relations |
| TK | -17.098 | 0.0032 | -22.0876 | 0.9209 | Not cointegrated |
| EG | -16.9762 | 0.0025 | -49.0186 | 0.0000 | Cointegrated relations |
| IQ | -16.0170 | 0.0098 | -66.6775 | 0.000 | Cointegrated relations |
| OILR | -3.5871 | 0.9865 | -15.8750 | 0.9963 | Not cointegrated |
| PR | -41.5503 | 0.0000 | -61.1289 | 0.0000 | Cointegrated relations |

**Source: Researchers' estimations using Eview 10**

The data presented in Table 4.2 reveals the presence of six (6) cointegrated relationships, which include the dependent variable (EG). Therefore, the study concludes that the null hypothesis, which states that there is no cointegration, is rejected with a significance level of 5%. This suggests that there is a persistent association among the variables in all the models over an extended period of time. This also demonstrates that the regression of dependent variables on their explanatory variables is not a result of chance or coincidence.

### 4.3 Error Correction Mechanism (ECM)
Engle and Granger (1987) and Martin, Hurn and Harris (2017) observe that when stochastic processes are cointegrated, it is possible to estimate an error correction model to determine how the model variables adjust. Put simply, the presence of long-run equilibrium necessitates a mechanism for rectifying short-run disequilibrium prior to achieving long-run equilibrium. The ECMs provide a direct estimation of the rate at which a dependent variable reverts to its equilibrium state following a change in other variables. The error correction term (ECM(-1)) in Table 4.3 exhibits a substantial negative value. These findings indicate that any temporary imbalances are resolved before reaching the long-term balance in all equations. The ECM

coefficient of -0.744 signifies that 74.4% of the discrepancies in EG are rectified in the present time frame. This indicates that the rate of adaptation is rapid.

**Table 4.3 Summary Report for ECM**

|  | Coefficients | Standard errors | t-statistics |
|---|---|---|---|
| D(EG(-1)) | 0.160189 | 0.078735 | 2.034529 |
| D(CAP(-1) | 0.344882 | 0.106233 | 3.246473 |
| D(CAP(-2) | 0.031018 | 0.004785 | 6.482373 |
| D(LAB(-1) | 0.036008 | 0.008182 | 4.400837 |
| D(LAB(-2) | -0.487101 | 0.567048 | -0.859012 |
| D(IQ(-1) | 2.766075 | 2.068555 | 1.337202 |
| D(IQ(-2) | 0.057080 | 0.091728 | 0.622275 |
| D(GE(-1)) | 0.160189 | 0.078735 | 2.034529 |
| D(GE(-2) | 0.344882 | 0.106233 | 3.246473 |
| D(TK(-1) | 0.031018 | 0.004785 | 6.482373 |
| D(TK(-2) | -0.324491 | 0.412858 | -0.785964 |
| D(OILR(-1)) | 0.320378 | 0.054677 | 5.859443 |
| D(OILR(-2) | 0.689763 | 0.258205 | 2.671383 |
| D(PR(-1) | 0.062035 | 0.011630 | 5.334067 |
| D(PR(-2) | 0.072016 | 0.042615 | 1.689921 |
| ECM(-1) | -0.744531 | 0.123605 | -6.023448 |

**Source: Researchers' estimations using Eview 10**
*,** and *** indicate 10%, 5% and 1% significant level

**4.4 Impact of Institutional Quality and Government expenditure on Economic Growth**
In order to assess the research objectives, we proceed to calculate the long-term coefficient models as outlined in chapter three of this study. The implementation of the model estimations was carried out using dynamic ordinary least squares (OLS) as suggested. We conducted estimations for two models, specifically referred to as model one and model two. Model two is an interaction model that examines the influence of the quality of institutions and government expenditure on economic growth.

**Table 4.4 Impacts of GE and IQ on EG**

| Variable | Model 1 | | Model 2 | |
|---|---|---|---|---|
|  | Coefficient | Std. Error | Coefficient | Std. Error |
| CAP | 0.100118*** | 0.038274 | 0.172879*** | 0.043094 |
| LAB | 0.215551*** | 0.051640 | 0.603567*** | 0.219110 |
| GE | 0.001938*** | 0.000232 | 0.0220280*** | 0.0058601 |
| TK | 0.022505*** | 0.008523 | 0.097957*** | 0.009879 |
| IQ | 0.009031*** | 0.001866 | 0.088877*** | 0.008984 |
| OILR | 0.154185*** | 0.018931 | 0.205908*** | 0.072206 |
| PR | -0.172251* | 0.0990017 | -0.103084** | 0.041307 |
| GE*IQ |  |  | 0.246359** | 0.102059 |
| C | 1.862727** | 0.939329 | 22.33448*** | 3.159938 |
| R-squared | 0.699 | 0.893 |  |  |
| DW | 1.78 | 1.92 |  |  |

**Source: Researchers' estimations using Eview 10**

In model 1, according to Table 4.4, the coefficient of CAB (capital) is 0.1001, and it has a standard error of 0.0383. These findings indicate that a 1% rise in capital would result in a 0.10% increase

in economic growth. The coefficients for LAB, GE, and IQ are 0.2156, 0.00194, and 0.009031, respectively. These findings indicate that a 1% rise in LAB, GE, and TK would result in a corresponding increase in economic growth of 0.22%, 0.002%, and 0.009%, respectively. The regression model 1 includes control variables PR and OILR, with coefficients of -0.172251 and 0.154185 respectively. The outcome reveals that economic growth is positively influenced by both institutional quality and government spending.

Similarly, the model demonstrates that the coefficients for CAP and LAB are 0.172879 and 0.603567, respectively. This indicates that a 1% rise in capital (CAP) and labour (LAB) will result in a 0.17% and 0.60% increase in economic growth (EG) respectively. The coefficients for GE, TK, IQ, OILR, and PR are 0.0220280, 0.097957, 0.088877, 0.205908, and -0.103084, respectively. This means that a 1% rise in GE, TK, IQ, and OILR would result in a 0.022%, 0.098%, 0.089%, and 0.206% increase in EG, respectively. Nevertheless, the relationship between growth and the price level is inverse. The interaction variable GE*IQ has a coefficient of 0.246359. Observe that the coefficient of the interaction term GE*IQ is higher than the coefficients of GE and IQ individually. Furthermore, the model's robustness can be determined to have increased compared to model 1, as indicated by the R-square value. This implies that the benefits of GE are optimised when there is a clearly defined institutional structure. If the relationship between IQ and GE is parallel, the potential benefits of growth may not be fully actualized.

## 4.5 Discussion of Findings

The main objective of this study is to assess the influence of institutional quality and government expenditure on the economic growth of Nigeria. The findings indicate that government spending has a notable and favourable influence on economic growth. Government expenditure is a constituent of national revenue calculation in the System of National Accounting. Therefore, variations in government spending can influence the patterns of economic expansion. Furthermore, government expenditure has the potential to stimulate economic expansion through investments in social capital, which fosters a conducive atmosphere for economic activity to flourish. Investing in essential public infrastructure, such as power and energy, transportation networks, and healthcare and education facilities, would stimulate production and other economic activity, ultimately resulting in higher economic growth. Furthermore, directing government expenditure towards developing essential infrastructure that has the potential to attract foreign direct investment may stimulate economic activities and result in significant growth benefits. Government spending has the potential to stimulate improvements in both consumer and producer confidence, ultimately leading to long-term GDP advantages.

Furthermore, it should be noted that government expenditure encompasses transfer payments, which consist of household transfers and subsidies provided to enterprises. Transfers to households result in more income, which might potentially lead to an increase in consumer spending, hence producing economic growth. Furthermore, production subsidies serve as an incentive for enterprises to increase their level of production. When the level of aggregate supply aligns with the level of aggregate demand, a new equilibrium can be achieved at a greater rate of economic growth. The notion that higher government expenditure stimulates economic growth is substantiated by Keynesian theory. Keynes's theory of government spending posits that the introduction of government spending results in a subsequent increase in business activity and further expenditure. This hypothesis posits that increased expenditure stimulates overall production and provides additional wealth. If workers exhibit a willingness to allocate their

additional income towards consumption, the consequent expansion in the gross domestic product (GDP) has the potential to surpass the initial government expenditure. Economists coined the term "multiplier effect" to describe this phenomena, specifically referring to it as the Keynesian multiplier. This study also supports the findings of Keefer and Knack (2017) and Abu-Bader and Abu-Qarn (2013).

Furthermore, the findings indicate that the presence of institutions has a substantial and favourable impact on the economic progress of Nigeria. This finding supports the perspective of institutional economists who argue that the growth process is heavily influenced by the quality of institutions (Akobeng, 2016; Chikalipah, 2017; Iheonu, et al., 2017; Malikane & Chitambara, 2017). North (1991) asserts that an institutional framework, which establishes the rules of interaction, specifies property rights, and imposes penalties for deviant activity, fosters economic progress. Robust institutions decrease the expenses associated with transactions and enable smooth and efficient economic exchanges. Additionally, it guarantees that government expenditures are directed towards the intended purposes rather than being misused. The results demonstrate that government expenditure yields maximum benefits when it is guided by a well-established institutional structure.

## 5. Conclusion and Recommendations

In Nigeria, there is a growing emphasis on achieving sustainable and robust economic growth. Researchers and policymakers are actively seeking to identify the key factors that drive economic growth and can lead to the desired trajectory of growth. The economic literature has highlighted government expenditure and institutional quality as factors that drive economic growth. The primary objective of this study is to assess the influence of institutional quality and government expenditure on the economic growth of Nigeria. The study employed the dynamic ordinary least square (DOLS) method to analyse time series data spanning from 1990 to 2022. The findings demonstrate that government expenditure has a substantial and favourable effect on economic growth. Furthermore, the findings demonstrated that the institution has a substantial and beneficial impact on the economic progress of Nigeria.

These findings lead to the following suggestions. The study suggests that in order to promote economic growth, it is advisable to consistently increase government expenditure. However, this should be accompanied by fiscal discipline, which can be achieved by enforcing the regulatory framework of the Nigerian government. In order to effectively utilise the anticipated benefits of public expenditure in the economy, the Nigerian government must demonstrate firmness and increased transparency in its efforts to combat financial corruption and misappropriation of public funds, particularly those designated for project implementation throughout the country. Given the significance of institutional quality in promoting economic growth, it is crucial to prioritise the enhancement of institutions by implementing democratic values such as increased political involvement, freedom of speech, and responsibility of leaders. Furthermore, it is imperative for the government to prioritise the essential conditions for a favourable business environment on a national scale. This entails robust enforcement of property rights and contracts, a highly efficient legal and judicial system, and a government that is free from corruption. An atmosphere like this not only facilitates the success of businesses, but also enhances private investor confidence and stimulates economic growth and welfare.

**Conflict of Interest Statement**

The authors have stated that they do not have any conflicts of interest related to this study. We thus affirm that we have no financial or non-financial affiliations that could potentially create a conflict of interest in relation to the research presented.

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