Impact of Institutional Quality on Inclusive Growth in Nigeria

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Abstract

Inclusive growth remains a critical challenge in Nigeria, as the nation grapples with persistent poverty, inequality, and unemployment despite periods of economic expansion. Understanding the role of institutional quality in fostering inclusive growth is essential, given its potential to address these systemic issues. This study empirically examines the relationship between institutional quality and inclusive growth in Nigeria from 1984 to 2020 using the Vector Error Correction Model (VECM) estimator. The findings reveal that in the short run, institutional quality negatively and significantly affects income growth and inclusive growth, although it positively influences employment. In contrast, the long-run analysis indicates that institutional quality positively contributes to income growth, income equality, and inclusive growth at a 5% significance level, while its effect on employment remains statistically insignificant. Thus, institutional quality negatively impacts inclusive growth in the short run but positively influenced growth inclusiveness in the long run. The study underscores the need for policy reforms aimed at improving public service quality and institutional effectiveness to enhance the inclusiveness of growth in Nigeria over time.

Keywords: Institutions; income growth; income equality; employment; inclusive growth; Nigeria.

JEL Classification Codes: D63, E02, F43, J60, O43.

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1. Introduction

The concept of inclusive growth has garnered significant attention in development economics due to its emphasis on not just increasing the size of the economic pie but also ensuring equitable distribution. Inclusive growth integrates the principles of economic progress with objectives such as reducing inequality, promoting pro-poor growth, and creating jobs that cater for a broad spectrum of the population (Ranieri and Ramos, 2013; Ali and Son, 2007). This approach underscores the importance of aligning growth strategies with social and economic inclusiveness, fostering opportunities for all segments of society, particularly the marginalized and disadvantaged. Nigeria's pursuit of sustainable development hinges on its ability to foster inclusive growth. Despite being the Africa's largest economy, inclusive growth remains a persistent challenge, characterized by income inequality, job insecurity, and weak institutional frameworks. While the nation has experienced periods of significant GDP expansion, such as the 11.8% growth in 1990 and 15.3% surge in 2002, these gains have not consistently translated into improved welfare for all segments of society (World Bank, 2022). For instance, despite robust GDP performances, inclusive growth metrics remained negative or stagnant for much of the 1980s and 1990s, signalling systemic inequities in wealth distribution and employment accessibility. Even in recent years, progress has been uneven: while inclusive growth turned positive post-2003, it exhibited volatility, peaking at 1.83 in 2011 before declining to 0.01 in 2014, despite relatively stable GDP figures.

A critical yet underexplored factor in this inconsistency is the role of institutional quality. Institutions shape economic outcomes through governance frameworks, policy effectiveness, and the enforcement of equitable practices. Strong institutions not only foster an enabling environment for economic activities but also ensure that the benefits of growth are equitably shared across society. High-quality institutions characterized by transparency, accountability, and rule of law can mitigate corruption, enhance public service delivery, and promote social cohesion (Acemoglu and Robinson, 2012; North, 1990). Conversely, weak institutions often exacerbate inequality, hinder job creation, and limit access to essential resources and opportunities, thereby stifling inclusive growth. Data reveals fluctuations in Nigeria's institutional quality, ranging from a low of 1.94 in 1986 to a high of 3.94 in 1997, with periods of decline coinciding with political instability or policy discontinuities (International Country Risk Guide, 2021). Notably, improvements in institutional quality after 2003 align with gradual gains in inclusive growth, suggesting a potential linkage. However, this relationship remains uncoordinated and contingent on historical, economic, and political circumstances. For example, institutional quality scores plateaued between 2.6 and 3.1 from 2003 to 2020, yet inclusive growth fluctuated widely, from -1.71 in 1994 to 1.83 in 2011. This paradox underscores the complexity of institutional impacts such that stronger institutions may enable inclusive policies, but structural barriers such as corruption, weak regulatory enforcement, and unequal resource allocation persist.

The problem, therefore, lies in understanding how institutional quality interacts with multidimensional drivers of inclusive growth in Nigeria. Fundamental questions that emerged are: why have periods of institutional strengthening not consistently translated into sustained inclusivity? How do governance failures exacerbate disparities, even amid economic growth? Addressing these gaps is imperative, as Nigeria faces rising inequality, unemployment, and poverty, challenges amplified by global shocks like the 2016 recession and the COVID-19 pandemic. Without robust institutions to channel growth into equitable opportunities, the nation

risks perpetuating cycles of exclusion, undermining social cohesion and long-term development. This study addressed these gaps by investigating the impact of institutional quality on inclusive growth in Nigeria within the period of 1985 and 2020. It evaluates the joint impact of various dimensions of institutional quality, such as government stability, control of corruption, law and order and bureaucracy quality, on the nation's ability to achieve growth that is inclusive and sustainable.

This study estimates the link between institutional quality and inclusive growth in Nigeria for the following reasons. Unlike diversified economies, Nigeria's growth is prone to external shocks (e.g., oil price collapses), while institutional weaknesses, such as corruption and policy inconsistency, exacerbate exclusion despite periods of GDP expansion. As a result, the Vector Error Correction Model (VECM) is suitable for this analysis, as it addresses the non-stationarity and cointegration observed in the time-series data between 1985 and 2020, distinguishing short-term disruptions (e.g., recessions, political instability) from long-term institutional impacts on inclusivity (a critical point overlooked by static estimators like ordinary least squares (OLS) or vector autoregressive (VAR), which fail to account for equilibrium relationships). In addition, the VECM's capacity to model feedback effects and adjust for structural breaks aligns with Nigeria's episodic reforms (e.g., post-1999 democratization, post-2016 diversification efforts) and mitigates biases from endogenous variables. This study is further justified by Nigeria's demographic urgency: with a burgeoning youth population and rising unemployment (evident in employment rate drops from 98% in 1995 to 72.9% in 2020), understanding how institutions can channel growth into equitable opportunities is vital for social stability. By integrating these economic, methodological, and socio-political dimensions, this study offers actionable insights for policymakers navigating the dual challenges of institutional fragility and inclusive development in resource-dependent economies.

The remainder of the paper is structured as follows: the second section reviews extant and related literature on the subject matter. The methodology is discussed in the third section. The fourth section discusses the results and findings, while the concluding section addresses implications for policy, limitations and suggestions for future research.

2. Literature Review

The study hinges on both Acemoglu and Robinson's (2012) theory of inclusive institutions and the new institutional economic hypothesis by North (1990). The inclusive institutions hypothesis speculates that institutions which are inclusive (ensuring broad participation in economic activities, protection of property rights, and a level playing field for all citizens) are critical in promoting sustained economic growth that benefits a wide segment of society. According to the school of thought, inclusive institutions facilitate innovation, efficient resource allocation, and human capital development. In contrast, extractive institutions concentrate wealth and power among elites, stifling development and perpetuating disparities (Adeleye, Arogundade, and Mduduzi, 2023; de Almeida, Esperidião, and de Moura, 2024). Acemoglu and Robinson further argue that inclusive institutions create a "virtuous cycle," where political and economic inclusivity reinforce each other, sustaining long-term growth. This is evident in advanced economies, where democratic accountability and transparent governance amplify the benefits of growth across income groups (Adeleye, Arogundade, and Mduduzi, 2023). Conversely, extractive institutions in regions like Latin America and sub-Saharan Africa often lead to fragmented growth, where

economic gains are captured by elites, exacerbating poverty and inequality (Zhuang, de Dios, and Lagman-Martin, 2010; Adeleye, Arogundade, and Mduduzi, 2023).

The new institutional economics theory argues that high-quality institutions reduce transaction costs and uncertainty, thereby fostering an environment conducive to investment, innovation, and growth. High-quality institutions such as effective legal systems and transparent regulatory frameworks, lower risks for investment, particularly for marginalized populations, and prevent monopolistic practices that hinder equitable market access (Pinto, 2017; Adeleye, Arogundade, and Mduduzi, 2023). For example, studies show that institutions like the World Bank's governance indicators (e.g., control of corruption, government effectiveness) significantly enhance financial inclusion's impact on poverty alleviation, especially in developing economies (Aracil, Gómez-Bengoechea, and Moreno-de-Tejada, 2022).

Past studies have highlighted the pivotal role of institutional quality in driving growth and development in emerging economies (Chang, 2011; Acemoglu and Robinson, 2013). Their findings suggest that the level of institutional capacity and integrity significantly influences a nation's ability to design and implement transformative policies and programs. Consequently, countries with relatively robust institutions are better positioned to break free from the entrenched challenges of persistent poverty, substantial inequality, and rising unemployment that characterize many developing economies worldwide. Strong institutional frameworks contribute to effective governance, transparency, and accountability, enabling the efficient allocation of resources and fostering an environment conducive to sustainable economic growth. Furthermore, high-quality institutions help mitigate corruption, reduce policy uncertainty, and promote social inclusion, which are critical factors for long-term development. Conversely, weak institutions often perpetuate inefficiencies, exacerbate inequalities, and hinder the potential for meaningful reforms, thereby trapping nations in a cycle of underdevelopment.

Few studies have examined the impact of institutional quality on inclusive growth and socioeconomic progress indices like economic growth, equality, and employment generation within nations. Adeleye, Arogundade, and Mduduzi (2023), using PSCC-FE, IV-GMM, and SQREG methods for 193 countries from 2010 to 2019, find that institutional quality positively impacts inclusive growth. Similarly, Ntow-Gyamfi *et al*. (2022), through system GMM analysis of 48 African countries within 1990-2016, confirm that regulatory quality has an unconditional positive impact on inclusive growth. Sabir and Qamar (2019), using panel system GMM on 11 developing Asian countries for a period of 1996 and 2017, and Nawaz, Iqbal, and Khan (2014), analyzing Asian economies from 996 to 2012 with fixed effect and dynamic GMM approaches, both conclude that institutions play a key role in fostering inclusive economic expansion. Additionally, Olanrewaju, Aremo, and Binuyo (2020) apply ARDL techniques in Nigeria within the period 1998-2017 to establish that institutional quality significantly influences inclusive growth, while Munir, Fatima, and Iftikhar (2022), in a panel fixed effects study of 86 countries, find that economic and political institutions positively impact inclusive growth, though legal institutions do not.

Conversely, some studies present mixed or conditional findings on institutional quality's impact on inclusive growth. Kumeka, Raifu, and Adeniyi (2024), employing fully modified and dynamic OLS for 45 African countries within 1996-2018, suggest that institutional quality does not

significantly influence inclusive growth. Botchuin (2021), using an ARDL model for Cote d'Ivoire from 1984 to 2018, finds that government stability negatively affects inclusive growth in the long run. Additionally, Doumbia (2018), using PSTR modeling for 112 countries within 1975-2012, highlights that government effectiveness and the rule of law directly impact inclusive growth. Other studies reveal indirect or interaction effects. For example, Aracil, Gómez-Bengoechea, and Moreno-de-Tejada (2022), in a cross-section and quantile analysis of 75 countries from 2004 to 2017, conclude that stronger institutions enhance financial inclusion's effect on poverty reduction. Arogundade, Biyase, and Eita (2021), using panel smooth transition regression on 28 SSA countries for a period of 1996-2018, indicate that well-functioning institutions enhance FDI's contribution to inclusive human development. Additionally, Olanrewaju, Tella, and Adesoye (2019), applying the Toda-Yamamoto causality test in Nigeria from 1998 to 2017, reveal a bidirectional causal relationship between inclusive growth, institutional quality, and financial inclusion. Other studies highlight institutional factors influencing growth sustainability, such as Kamah, Riti, and Bin (2021), who propose an Environmental Inclusive-Growth Kuznets Curve (EIKC) in SSA using system GMM, while Kouton (2019), employing system GMM in SSA within 1996-2016, affirms that economic freedom promotes inclusive growth.

Furthermore, Samarasinghe (2018) studied the effect of governance on economic growth, using control of corruption as a proxy, and found that a 1 percent increase in corruption control led to a 6.9% rise in economic growth. Abdelbary and Benhin (2019) assessed the effects of governance on economic growth and human capital in Arab nations during 1995–2014, revealing a beneficial impact on both dimensions. Raju, Balasubramaniam, and Srinivasan (2020) analyzed how governance impacts economic development, focusing on South Asian countries, and found a positive relationship. Using a panel-vector autoregressive model, Heras Recuero and Pascual González (2019) found that the quality of institutions was positively related to economic growth, but the causality depended on the type of institutional quality in middle-income countries. While using the fully modified ordinary least squares (FMOLS) and dynamic ordinary least squares (DOLS), Ahmed *et al*. (2022) found that institutional development is a vital factor that can help boost the green economy's long-term growth. Using Toda-Yamamoto non-causality test, Olanrewaju, Tella and Adesoye (2019) confirmed a bidirectional causal relationship between inclusive finance and the interaction of institutional quality and financial inclusion in Nigeria. Thus, literature underscores the strong linkages between governance, economic growth, green growth, and social progress indices like inequality, and employment. However, it highlights a research gap regarding the relationship between institutional quality and inclusive growth. This study, therefore, aims to investigate the impact of institutional quality on inclusive growth. A tabular summary of related and relevant studies is provided in Table 1.

Table 1: Tabular presentation of past empirical review

S/N	Author(s)/Year	Region/Country/ Scope	Methodology	Key Findings
1.	Adeleye, Arogundade, and Mduduzi (2023)	193 countries (2010-2019)	Panel spatial correlation consistent (PSCC-FE), instrumental variable-generalized method of moments (IV-GMM), and simultaneous quantile regressions (SQREG)	Institutional quality contributes positively to inclusive growth.
2.	de Almeida, S. J., Esperidião, F., & de Moura, F. R. (2024)	42 advanced economies and Latin America and the Caribbean (1970-2019)	Panel Vector Autoregressive Model	Economic growth tends to improve when institutional performance strengthens, particularly in response to external changes, with Latin America and the Caribbean exhibiting a stronger response to political institutional shifts than advanced economies.
3.	Kamah, Riti, and Bin (2021)	Sub-Saharan African (SSA) countries	System generalized method of moments (GMM)	Institutional quality enhances the balance between economic growth and environmental sustainability, leading to the identification of environmental inclusive-growth Kuznets curve (EIKC).
4.	Ntow-Gyamfi *et al*., (2022)	48 African countries (1990-2016)	System GMM	Regulatory quality has an unconditional positive impact on inclusive growth.
5.	Olanrewaju, Aremo, and Binuyo (2020)	Nigeria (1998-2017)	Autoregressive Distributed Lag (ARDL)	Institutional quality has a notable influence on inclusive growth.
6.	Olanrewaju, Tella, and Adesoye, (2019).	Nigeria (1998-2017)	Toda-Yamamoto (TY) Granger non-causality test	There exists a two-way causal relationship between inclusive growth and the combined effect of institutional quality and financial inclusion.
7.	Kumeka, Raifu and Adeniyi (2024)	45 Africa countries (1996-2018)	Fully modified and dynamic OLS	Institutional quality does not significantly impact inclusive growth.
8.	Aracil, Gómez-Bengoechea, and Moreno-de-Tejada (2022)	75 developing and developed countries (2004–2017)	Cross-section and quantile analysis.	Stronger institutions amplify the positive impact of financial inclusion on poverty reduction.

9.	Nawaz, Iqbal, and Khan (2014)	Asia economies (1996-2012)	Fixed effect and dynamic GMM approaches	Institutions play a fundamental role in determining long-term economic growth trajectories.
10.	Arogundade, Biyase, and Eita (2021)	28 SSA countries (1996-2018)	Panel smooth transition regression model	Well-functioning institutions enhance the impact of foreign direct investment on inclusive human development.
11.	Munir, Fatima, and Iftikhar (2022)	86 countries	Panel fixed effects	The quality of economic and political institutions positively influences inclusive growth, whereas the role of legal institutions was not significant.
12.	Yinusa, Aworinde, and Odusanya (2020)	Nigeria (1984-2017)	Threshold autoregressive and momentum threshold autoregressive models	Investment climate positively impacts inclusive growth, while corruption and law and order show no significant impact.
13.	Sabir and Qamar (2019)	11 developing Asian countries (1996-2017)	Panel system GMM	Institutions have a positive influence on inclusive growth.
14.	Botchuin (2021)	Cote d'Ivoire (1984-2018)	Autoregressive distributive lag (ARDL) model	Only government stability as a measure of institutional quality has a negative and significant long-term effect on inclusive growth.
15.	Kouton (2019)	SSA (1996-2016)	System GMM	Economic freedom fosters inclusive growth.
16.	Doumbia (2018)	112 countries (1975-2012)	Panel Smooth Transition Regression (PSTR) model	Government effectiveness and the rule of law have direct effect on inclusive growth.

3. Methodology

3.1 Empirical model

Following the empirical models of Anand, Mishra, and Peiris (2013), Tella and Alimi (2016), and Whajah, Bokpin, and Kuttu (2019), the study adapted and modified their models to specify the relationship between institutional quality and inclusive growth is specified as:

$$incg_t = \pi_0 + \pi_1 k_t + \pi_2 iq_t + \pi_3 lb_t + \Psi ctv_t + e_t \quad (1)$$

Where: *incg* is inclusive growth; *k* denotes capital investment; *iq* represents institutional quality which is a column vector of political risk factor of government stability, control of corruption, law and order and bureaucracy quality; and *lb* is labour force participation rate. Other control variables (*ctv*) in a row vector form are trade openness measured by total trade to GDP (*topen*); unstable price proxy by annual growth of consumer price index (*inf*); and exchange rate (*exr*). The stochastic term is represented by *e*; *t* denotes time; and π_0, π_{1-3}, Ψ are the parameters.

3.2 Data sources, description and measurements

The data for this study were obtained from the International Country Risk Guide (ICRG), compiled by Political Risk Services, and the World Bank Development Indicators (WDI), covering the period from 1984 to 2020. These sources primarily consist of secondary data. The study incorporates exogenous variables that influence the inclusive growth process. Inclusive growth in this context measures the pace and distribution of economic output growth as well as its ability to generate employment in the economy. This aligns with the absolute definition of pro-poor growth. Since inclusive growth encompasses employability, the rate of output growth, and its equitable distribution, the study adopts three indicators to represent inclusive growth: per capita income growth, income inequality, and the unemployment rate. Principal component analysis (PCA) was utilized to synthesize these indicators into a single inclusive growth measure. PCA was chosen for its ability to reduce the dimensions of a dataset with numerous potentially unrelated variables while retaining a high percentage of the data's variability (Bro and Smilde, 2014).

Table 1: Principal component analysis for inclusive growth

Inclusive Growth Index						
Principal Components	**Component Matrix**			**Proportion**	**Cumulative Proportion**	**Eigen value**
	Growth	**Equality**	**Employment**			
First PC	0.2799	0.6585	-0.6986	0.5089	0.5089	1.5268
Second PC	0.9373	-0.3448	0.0506	0.3259	0.8348	0.9777
Third PC	0.2075	0.6690	0.7137	0.1652	1.0000	0.4955

Note: PC - principal component.
Source: Author's computation (2024).

The study employs PCA to create a composite index of inclusive growth based on the three selected indicators: income growth, income equality, and employment, as outlined in Table 1. This method effectively reduces highly correlated variables into smaller, uncorrelated units referred to as "principal components," while preserving the original dataset's integrity. PCA minimizes extreme correlation among the various measures of inclusive growth, ensuring a robust composite index. Pan, Bosch, and Ma (2017) describe PCA as a dimensionality-reduction technique that extracts a relatively small number of interpretable components from observed variables, which account for most of the variation in the dataset. Using the Kaiser and Jolliffe criterion for retaining common factors, the study calculates the eigenvalues for each component. Components with eigenvalues exceeding 1 are retained, as they explain a significant portion of the dataset's variance (Ajide *et al*., 2022). As shown in Table 1, the inclusive growth index, derived from the three main components, accounts for 50.89% of the total variance, with an eigenvalue of 1.5268.

The primary explanatory variable for this study is institutional quality, which plays a critical role in shaping the rules that govern societal interactions by imposing formal and informal constraints on political, social, and economic systems. High-quality institutions are believed to create incentives that reduce uncertainty, foster productivity, and enhance financial outcomes. They provide a foundation for investment and growth, contributing to a country's economic development through mechanisms such as private property rights protection, the enforcement of the rule of law, low levels of corruption, and equitable interactions beyond the interests of a small elite (Olaoye and Aderajo, 2020). Both theoretical and empirical evidence demonstrate the importance of institutions in driving economic growth. This study uses a weighted average of

institutional quality indices, including government stability, control of corruption, law and order, and bureaucratic quality, to capture institutional quality.

In this study, control variables such as gross fixed capital formation, total labour force participation, trade openness, inflation, and official exchange rate are included to isolate and accurately measure the effect of institutional quality on inclusive growth. Each control variable represents an important dimension of Nigeria's economic environment that independently influence inclusive growth outcomes. For instance, gross fixed capital formation indicates the level of investment and infrastructure development; labour force participation reflects the capacity of the economy to generate productivity; and trade openness signals the extent of global integration, which can drive economic dynamism. Additionally, inflation and consumer prices are critical for assessing macroeconomic stability and cost-of-living pressures, while the official exchange rate captures external competitiveness and economic stability. Including these variables helps control confounding effects, ensuring that the impact attributed to institutional quality is not biased by these other influential economic factors.

Concerning their a'priori expectations, gross fixed capital formation is expected to positively contribute to growth, as increased investment in infrastructure and production assets enhances overall economic performance (Adeosun *et al*., 2022). Similarly, a higher labour force participation rate implies a more engaged and productive workforce, which, in conjunction with sound institutions, is likely to yield a more equitable distribution of growth benefits (Tella and Alimi, 2016). Trade openness is anticipated to further stimulate growth through technology transfer and competitive pressures, while a stable official exchange rate underpins external competitiveness and investor confidence (Arabiyat, Mdanat, and Samawi, 2020). Conversely, high inflation and rising consumer prices are generally seen as detrimental, as they can erode purchasing power and disrupt economic stability, thereby mitigating the positive impact of robust institutions on inclusive growth (Sajid and Ali, 2018).

3.3 Estimation methods

Descriptive statistics were calculated in this study to effectively summarize and characterize the key features of the data. These statistics are particularly useful for identifying patterns and assessing the normality of the data distribution (Gujarati and Porter, 2017). Understanding these features ensures that subsequent analyses are based on data properties, providing a solid foundation for more advanced econometric tests and modelling. To determine the preliminary properties of the data, unit root tests were conducted using the augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and Kwiatkowski-Phillips-Perron-Shin (KPSS) techniques. These tests were employed to establish the stationarity of the variables in the dataset. Identifying the stationarity properties of the variables is critical, as it determines the appropriate modelling approach and ensures reliable results in subsequent econometric analyses.

In studying the impact of institutional quality on inclusive growth in Nigeria, selecting an appropriate econometric model is crucial to accurately capturing both short-run and long-run dynamics. Among various econometric approaches, the Vector Error Correction Model (VECM) is particularly well-suited for this analysis due to its ability to handle cointegrated variables, which are common in macroeconomic and institutional datasets. Unlike the Autoregressive Distributed Lag (ARDL) model, which is primarily used when some variables are stationary at level ($I(0)$) and

others at first difference ($I(1)$), VECM is specifically designed for cases where all variables are integrated of order one ($I(1)$) and share a long-run equilibrium relationship (Johansen, 1991; Alimi and Fagbohun, 2017). This property makes VECM a powerful tool for examining how institutional quality and inclusive growth adjust to deviations from their long-run equilibrium, providing richer insights into the nature of their relationship compared to ARDL, which is better suited for mixed-order integration processes (Pesaran, Shin, and Smith, 2001). In a VECM form, the equation is written as:

$$\Delta Z_t = A_0 + \Pi Z_{t-1} + \sum_{i=1}^{k} \Gamma_j \Delta Z_{t=j} + \mu_i \quad (2)$$

Where: Δ is the difference operator, Z_t is a *n* by 1 dimensional vector of non-stationary I(1) endogenous variables of the model, A_0 is a *n* by 1 dimensional vector of constant; Π is the long-run matrix that determines the number of co-integrating vectors that consists of parameters representing the speed of adjustment towards long-run equilibrium and long-run parameter respectively; Γ is the vector of parameters that represents the short term relationship; and μ_i is k-dimensional vector of the stochastic error term normally distributed with white noise properties $N(0,\sigma^2)$. This model effectively captures the interactions between the variables while accounting for their underlying statistical properties.

Another key advantage of VECM over threshold regression models is its dynamic adjustment mechanism. Threshold regression, while useful for detecting regime shifts, does not inherently capture the equilibrium correction process that is critical when assessing long-term institutional effects on economic outcomes (Hansen, 2000). In contrast, VECM estimates both short-run and long-run coefficients within a unified framework, allowing for an explicit determination of how institutional quality influences inclusive growth over time while also accounting for transitory fluctuations (Alimi and Fagbohun, 2017; Badejo *et al*., 2018). This is particularly relevant in Nigeria, where institutional structures evolve gradually, and immediate policy changes may not reflect their full economic impact in the short run.

Additionally, compared to other time-series models like Vector Autoregression, VECM is preferred because it explicitly incorporates the error correction term (*ECT*), which quantifies the speed at which inclusive growth adjusts to institutional shocks. The presence of an error correction mechanism ensures that long-run relationships are maintained, preventing spurious regressions that may arise in non-stationary data settings (Engle and Granger, 1987). Given Nigeria's complex institutional framework and fluctuating governance structures, employing VECM allows for a deeper understanding of both short-term policy effects and the long-term sustainability of institutional reforms in driving inclusive growth.

4. Results and Discussion of Findings

4.1 Descriptive statistics and correlation analysis

The summary statistic of the variables presented in Table 2 indicated that the average growth of gross domestic product per capita stands at 4.25%. It indicates that the standard of living account for an average of 4.25% of economic activities produced per individual in the Nigerian economy. Concerning the income equality (*equ*) of inclusive growth, the mean value of the series is 58.99%. Regarding the employment rate (*emp*) variable of growth inclusive, the average rate was 88.87%.

After using the principal component analysis to compute an index using the three components of inclusive growth, the average value of inclusive growth indicates a negative value of -0.0023. As regards the institutional quality, the mean value stood at 2.965. This therefore means that the Nigerian institution in terms of quality of public services, government policy formulation and implementation promoting private sector development, quality of contract enforcement and property rights, and promotion of citizens' effort and competence are weak within the specified periods. One of the main reasons for the weak nature of economic institutional settings in the country is the unstable nature of her political structure over the years.

The average values of the two key factor determinants of inclusive growth stood at 31.1% and 58.98% for capital investment as percentage of GDP (*k*) and labour force participation rate (*lb*) respectively under the reviewed periods. For the control variables, the mean values of trade openness proxy by total trade as a ratio of GDP (*topen*), inflation rate measured by annual growth rate of consumer price index (*inf*), and official exchange rate (*exr*) are 34.27%, 19.18%, and ₦111.88/US Dollar correspondingly. Moreover, income equality, employment, inclusive growth index, interest rate spread, institutional quality, labour force participation rate and trade openness skewed leftward with a value of -0.9068, -0.5312, -0.2194, -1.0277, -0.2105, -1.2928 and -0.4507 respectively, while other indicators skewed rightward. Also, the Kurtosis identified 3.0 suggesting the normal distribution. From Table 2, none of the variables exhibits normal distribution. All the variables are platykurtic in distribution implying that the variables are not normally distributed.

Table 2: Summary statistics

Variable Measurements	Symbol	Mean	Std Dev	Max.	Min.	Kurtosis	Skewness
GDP growth (annual %)	*gdpg*	4.2507	3.9149	15.329	-2.0351	0.5360	0.4600
Income Equality	*equ*	58.994	6.1703	64.9	48.1	-0.6592	-0.9068
Employment	*emp*	88.869	7.5141	98.2	72.9	-0.8037	-0.5312
Inclusive growth index	*incg*	-0.00228	1.2356	1.8290	-2.1714	-1.0813	-0.2194
Institutional Quality	*iq*	2.9650	0.4380	3.9375	1.9375	0.6628	-0.2105
Gross fixed capital formation (% of GDP)	*k*	31.100	13.140	54.948	14.169	-1.2622	0.2555
Labour force participation rate, total (% of total population ages 15-64) (modelled ILO estimate)	*lb*	58.977	2.1214	61.210	53.910	0.3337	-1.2928
Trade (% of GDP)	*topen*	34.271	10.943	53.278	9.1358	-0.0777	-0.4507
Inflation, consumer prices (annual %)	*inf*	19.177	17.685	72.836	5.3880	2.1437	1.8190
Official exchange rate (LCU per US$, period average)	*exr*	111.88	100.17	358.81	0.8938	0.0430	0.8193

Note: Std. Dev. – standard deviation; Max. – maximum; Min. – minimum; Observation is 36.
Source: Author's computation (2024).

Table 3 presents the partial correlation of inclusive growth index, income growth, income equality, employment, institutional quality, investment, labour force, trade openness, inflation, and exchange rate in Nigeria using an annual dataset within the period of 1985 and 2020. In Table 3, the correlation coefficients indicating the level of association of institutional quality with inclusive growth were low and none of them is up to 0.9. More so, the coefficients have different signs among themselves. The result shows that institutional quality had a negative level of association

with inclusive growth. Also, it negatively correlates with income growth and income equality whereas it has a direct correlation with employment.

Table 3: Correlation matrix

	equ	*emp*	*incg*	*iq*	*k*	*lb*	*topen*	*inf*	*exr*
gdpg	0.034	-0.179	0.346	-0.151	-0.187	0.206	0.278	-0.321	-0.098
equ	1	-0.483	0.814	-0.496	-0.336	-0.330	-0.309	-0.178	0.418
emp		1	-0.863	0.063	0.730	0.464	-0.165	0.439	-0.733
incg			1	-0.335	-0.634	-0.391	-0.008	-0.416	0.671
iq				1	-0.123	0.261	0.657	-0.012	0.063
k					1	0.600	-0.285	0.365	-0.673
lb						1	0.390	0.317	-0.687
topen							1	-0.080	0.035
inf								1	-0.377

Note:

(i) gdpg - GDP growth;
(ii) equ - Income Equality;
(iii) emp - Employment;
(iv) incg - Inclusive growth index;
(v) iq - institutional quality;
(vi) k - Gross fixed capital formation;
(vii) lb - Labour force participation rate, total (% of total population ages 15-64);
(viii) topen - Trade as % of GDP;
(ix) inf – Inflation rate, consumer prices (annual %); and
(x) exr - Official exchange rate (LCU per US$, period average).

Source: Author's computation (2024).

In relations to the key factors of inclusive growth, capital investment and labour force report negative coefficients. Also, trade openness and inflation rate were found to have negative level of association with inclusive growth while exchange rate correlate positively with inclusive growth. Equally, the level of association of factors determining inclusive growth was also reported in the table. It is important to note that the collinearity of inclusive growth with employment and income inequality which is above 0.8 does not matter in this study because they are dependent variables and are not included in the same regression model. Summarily, the correlation values suggest absence of perfect collinearity among the predictive variables, as positive and negative relationships were reported among the variables of interest in varying magnitudes and signs. However, the results of the correlation coefficients are just preliminary analyses that are being put through confirmation in the next sub-section after considering other determinants of inclusive growth.

4.2 Unit root and cointegration

In this section, the pre-estimation approaches used to estimate the stationary level of the variables are Augmented Dickey Fuller (ADF), Phillips Perron (PP) and Kwiatkowski Phillips Schmidt Shin (KPSS). They are employed to test the stationary level of institutions, inclusive growth indicators, key factors and other controlling variables to suggest the appropriate technique to estimate the parameter coefficients. The results of the unit root for the indicators are presented in Table 4. The tau-statistic results for intercept and trend model were used to find the statistically significant of

the variables at 1%, 5% and 10% critical point at levels and first difference. Meanwhile, it should be noted that the lag length for ascertaining this stationarity level of these variables as well as unit-root test is automatic and optimally chosen by the Schwarz-Bayesian Information Criterion (SIC) while few were fixed.

In Table 4, the unit root test approaches under the conventional methods follow approximately the same decision on stationary level of variables of interest at varying significant levels which were not stationary at levels at 5%. Thus, the unit root test results were found not to reject the null hypothesis "not stationary at level" at 5% McKinnon significance level. These variables that are not stationary at levels were further tested at first differences which were found significant 5% significance level. The results suggest that at first difference, the time series of the variables (income growth, income equality, employment, inclusive growth index, institutional quality, gross fixed capital formation, labour force participation rate, trade openness, inflation rate, and official exchange rate) were stationary and integrated of order one and therefore suggests that after differencing at first levels the series, they converge to their long-run equilibrium or true mean.

Table 4: Conventional unit root tests

Variables	Level			First Difference			*I*(d)
	ADF	PP	KPSS	ADF	PP	KPSS	
incg	-2.0999	-2.1493	0.1005	-7.0261***	-6.9057***	0.0783***	*I*(1)
gdpg	-1.8711	-3.5568**	0.1454	-4.6783***	-	0.0601***	*I*(1)
equ	-1.7597	-1.8350	0.1205	-5.0906***	-5.0906***	0.0785***	*I*(1)
emp	-2.2808	-3.5988**	0.1085	-4.5759***	-	0.0541***	*I*(1)
iq	-3.3353*	-2.0664	0.1380	-4.9466***	-4.8916***	0.0842**	*I*(1)
k	-0.7543	-0.6386	0.1489	-6.2791***	-6.5354***	0.0406***	*I*(1)
lb	-3.4651*	-2.3339	0.1450	-5.5852***	-5.5128***	0.0909**	*I*(1)
topen	-2.8554	-2.6092	0.1900	-7.3815***	-11.580***	0.0490***	*I*(1)
inf	-2.6345	-2.9831	0.1352	-4.2477**	-6.6240***	-0.0417***	*I*(1)
exr	-0.6298	-0.8653	0.1241	-4.4456***	-4.2527**	0.0783***	*I*(1)

Note: *** significant at 1%; ** significant at 5%; * significant at 10%. Calculated at trend and intercept and lag lengths selected automatically using the Schwarz Info Criterion (SIC).

(i) gdpg - GDP growth;
(ii) equ - Income Equality;
(iii) emp - Employment;
(iv) ig - Inclusive growth index;
(v) iq - institutional quality;
(vi) k - Gross fixed capital formation;
(vii) lb - Labour force participation rate, total (% of total population ages 15-64);
(viii) topen - Trade as % of GDP;
(ix) inf – Inflation rate, consumer prices (annual %); and
(x) exr - Official exchange rate (LCU per US$, period average).

Source: Author's computation (2024).

Afterwards, the study conducted the cointegration test using the Johansen cointegration test. The optimal lag length employed in estimating the Johansen co-integration model was determined using the vector autoregressive (VAR) lag order selection criteria test and lag exclusion Wald tests, whose results were presented in the appendix. The result presented in the appendix revealed that lag length 1 is the most appropriate for the models using Schwarz Information Criterion (SIC),

optimal and significant lag order to estimate the VAR model system to estimate the Johansen co-integration model. The cointegration results are presented in Table 5.

The co-integrating equation reported for the models indicated that at McKinnon-Haug-Michelis 5% significance level, the Trace and Max Eigenvalue tests suggest that the incorporated time series variables are co-integrated at the second hypothesized co-integration equations order i.e. r = 2 for linear deterministic trend model with intercept for the inclusive growth model. These indicate that the alternative hypotheses "r=2" were not rejected for Trace statistics and Max-Eigen values. This suggests that there exist three cointegrating vector equations among inclusive growth, institutional quality in their respective stated order. Just like in the inclusive growth model, the result shows that there exist three cointegrating vector equations in income growth and income equality models. However, the cointegrating equation vector in employment model is two. Thus, there is long-run relationship between institutional quality and inclusive growth in Nigeria. Accordingly, the result of both unit root test and Johansen cointegration test suggest that the vector error correction model (VECM) is the most appropriate estimation technique to be used for the parameter estimates.

Table 5: Johansen cointegration test of institutions and inclusive growth

Series	Lags interval (in first differences): 1 to 2					
	Trend assumption: *Linear deterministic trend*					
	Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Max-Eigen Statistic**	**0.05 Critical Value**
incg, k, lb, iq, topen, inf, exr	r = 0	0.8556	183.06***	125.62	65.796***	46.231
	r ≤ 1	0.7313	117.26***	95.754	44.678***	40.078
	r ≤ 2	0.6612	72.583***	69.819	36.799***	33.877
	r ≤ 3	0.3946	35.784	47.856	17.065	27.584
	r ≤ 4	0.2820	18.719	29.797	11.266	21.132
	r ≤ 5	0.1235	7.4532	15.495	4.4822	14.265
	r ≤ 6	0.0837	2.9710	3.8415	2.9710	3.8415
gdpg, k, lb, iq, topen, inf, exr	r = 0	0.921385	204.29***	125.62	86.469***	46.231
	r ≤ 1	0.736145	117.83***	95.754	45.300***	40.078
	r ≤ 2	0.672840	72.528***	69.819	37.988***	33.877
	r ≤ 3	0.434505	34.540	47.856	19.382	27.584
	r ≤ 4	0.209052	15.158	29.797	7.9738	21.132
	r ≤ 5	0.117863	7.1839	15.495	4.2639	14.265
	r ≤ 6	0.082300	2.9201	3.8415	2.9201	3.8415
equ, k, lb, iq, topen, inf, exr	r = 0	0.885659	199.08***	125.62	73.731***	46.231
	r ≤ 1	0.800554	125.35***	95.754	54.815***	40.078
	r ≤ 2	0.542963	70.533***	69.819	36.622***	33.877
	r ≤ 3	0.426316	43.911	47.856	18.893	27.584
	r ≤ 4	0.335018	25.018	29.797	13.872	21.132
	r ≤ 5	0.211861	11.146	15.495	8.0948	14.265
	r ≤ 6	0.085838	3.0514	3.8415	3.0514	3.8415
emp, k, lb, iq, topen, inf, exr	r = 0	0.8683	178.45***	125.62	68.932***	46.231
	r ≤ 1	0.6994	109.52***	95.754	40.868***	40.078
	r ≤ 2	0.5632	68.647*	69.819	28.161	33.877
	r ≤ 3	0.45312	40.486	47.856	20.524	27.584
	r ≤ 4	0.3024	19.962	29.797	12.245	21.132
	r ≤ 5	0.1542	7.7173	15.495	5.6946	14.265
	r ≤ 6	0.0578	2.0228	3.8415	2.0228	3.8415

Note: ***, ** &* denotes rejection of the hypothesis at the 0.01, 0.05 and 0.1 level respectively.

(i) incg - Inclusive growth index;
(ii) dcps - Domestic credit to private sector by banks (% of GDP);
(iii) bm - Broad money (% of GDP);
(iv) lds - Interest rate spread (lending rate minus deposit rate, %);
(v) fd - Financial development index;
(vi) k - Gross fixed capital formation (% of GDP);
(vii) lb - Labour force participation rate, total (% of total population ages 15-64);
(viii) topen - Trade (% of GDP);
(ix) inf - Inflation, consumer prices (annual %); and
(x) exr - Official exchange rate (LCU per US$, period average).

Source: Author's computation (2024).

4.3 Short-run and long-run estimation results

In the sub-section, the vector error correction model (VECM) results of the parameter estimates both in short-run and long-run are presented in Tables 6(a-b) respectively. The results presented in the tables answer the null hypothesis that institutional quality does not have statistical and significant impact on inclusive growth. For the short run analysis, it shows the dynamic pattern in the model which ensure that dynamics of the model have not been constrained by inappropriate lag length specifications. In Table 6a, the lag length on all variables as the model was set at two because the number of observations is limited while putting the augmenting the variables into one model and this was found to be sufficient based on the results of the automatic selection of Schwarz Information Criterion (SIC). The results are presented in columns 1–4 considering the inclusive growth and its components (income growth, equality, and employment).

In Table 6a, the error correction term (ECT) measures the speed or degree of adjustment at which the inclusive growth changes due to changes in the financial development variables. The coefficient of the ECT is found to be negative and statistically significant at the conventional level for the models in columns 1–4. For the estimated models, the ECT values imply that the income growth, income equality, employment and inclusive growth models corrects its short-run disequilibrium by 32.83%, 17.13%, 18.28% and 61.31% speed of adjustment to return to the long run equilibrium respectively.

Table 6a: Short-run estimates of institutional quality and inclusive growth

Variables	**Dependent Variable:** Inclusive Growth			
	Income Growth	**Income Equality**	**Employment**	**Inclusive Growth index**
	1	**2**	**3**	**4**
Δ*(incg(-1))*	-0.2807	-0.1290	-0.4036	-0.2674
	(0.4187)	(0.2030)	(0.3408)	(0.2254)
Δ*(k(-1))*	-0.2117	0.39249	0.0962	0.0355
	(0.3556)	(0.2531)	(0.3435)	(0.0462)
Δ*(lb(-1))*	-0.8658	2.7817***	1.1013	0.1817
	(2.1133)	(0.9076)	(2.0315)	(0.2181)
Δ*(iq(-1))*	-0.3892**	-3.6879	2.3097	-0.9269**
	(0.5459)	(2.7801)	(5.4535)	(0.3765)
Δ*(topen(-1))*	0.1059	-0.0449	0.1110	-0.0054
	(0.3055)	(0.0751)	(0.1537)	(0.0187)
Δ*(inf(-1))*	0.1426**	-0.0809*	0.5091**	-0.0127
	(0.0690)	(0.0387)	(0.1098)	(0.0095)
Δ*(exr(-1))*	1.9224***	4.2507*	-2.8287	1.0640**
	(0.3660)	(2.5587)	(5.9431)	(0.4614)
ECT(-1)	-0.3283***	-0.1713*	-0.1828***	-0.6131***
	(0.0591)	(0.10317)	(0.0275)	(0.07848)

Note: Standard errors in parenthesis; ***, ** &* denotes rejection of the hypothesis at the 0.01, 0.05 and 0.1 level respectively.
Source: Author's computation (2024).

In the short run, it shows that the lag one of inclusive growth and its components have no significant impact on the current levels. The coefficients of institutional quality were negative in income growth, income equality and inclusive growth models while the parameter of institutional quality in employment model is positive. Among all the parameter estimates, institutional quality negatively and significantly influences income growth and inclusive growth. In magnitude terms, 1% changes in institutional quality affect income growth and inclusive growth by 0.389 and 0.927 respectively. The statistical impacts of investment, labour force participation rate and trade openness on inclusive growth and its components are not established. For other control variables, inflation rate has positive and significant effect on income growth and employment but negatively and statistically impacted income equality. Exchange rate directly and significantly impacted per capita income growth, income equality and inclusive growth in the short run.

Table 6b: Long-run estimates of institutional quality and inclusive growth

Variables	**Dependent Variable:** Inclusive Growth			
	Income Growth	**Income Equality**	**Employment**	**Inclusive Growth index**
	1	2	3	4
Capital investment (k)	0.0210	0.1185	0.4091***	0.2315***
	(0.0236)	(0.1136)	(0.0764)	(0.0395)
Labour force participation rate (lb)	1.3092***	-5.7941***	-1.7883***	-0.8250***
	(0.1444)	(0.6179)	(0.4907)	(0.2341)
Institutional quality (iq)	5.7136***	35.339***	0.4124	8.4996***
	(0.3963)	(1.9365)	(1.3093)	(0.6942)
Trade openness(topen)	-0.6389***	0.3889**	0.4122***	-0.1514**
	(0.0399)	(0.1825)	(0.1338)	(0.0651)
Inflation rate (inf)	0.2017***	-0.5177***	-0.3887***	-0.1480***
	(0.0110)	(0.0514)	(0.0375)	(0.0183)
Exchange rate (exr)	3.4711***	-13.401***	0.3163	-1.5367***
	(0.2941)	(1.3182)	(1.0018)	(0.5008)
Constant	-0.1515	-0.6627	-0.7658	-0.0276
	(1.1883)	(0.8136)	(1.6932)	(0.1978)
Adjusted R^2	0.4071	0.4131	0.3459	0.4551
F-Stat	4.5570***	4.5019***	4.1026***	4.3915***
Serial Correlation	(0.1303)	(0.0685)	(0.8716)	(0.5460)
Normality Test	(0.4748)	(0.2480)	(0.2293)	(0.0710)
Heteroskedasticity test	(0.2752)	(0.3085)	(0.2744)	(0.2481)

Note: Standard errors in parenthesis; ***, ** &* denotes rejection of the hypothesis at the 0.01, 0.05 and 0.1 level respectively.
Source: Author's computation (2022).

As for the long-run estimates, the parameter estimates of institutional quality are positive across the estimated models. Thus, the study shows that institutional quality can improve the inclusiveness of growth in the long run. It is similar to studies such as Jalil and Feridun (2011), Recuero and González (2019), and Ahmed *et al*. (2022) that argued the quality of institutions was positively related to economic growth. Thus, it supports the argument by Hakeem and Oluitan

(2013), Effiong (2015), and Ahmed *et al*. (2020) that quality of public institutions could help promote sustainable development. This means that for Nigeria's financial systems to benefit from financial development in terms of inclusive growth, they must be embedded in sound institutional frameworks. As a main finding, investment profile appears to play an important role in all areas of financial development; thus, creating a friendly business environment is critical to reduce investment risks, increase confidence, and attract foreign investors to ensure inclusive growth. The statistical effect of institutional quality on income growth, income equality and inclusive growth was established at 5% level but was not confirmed in employment at the conventional level. Its statistical values indicate that a unit change in institutional quality led to about 5.71, 35.34 and 8.45 changes in income growth, income equality and inclusive growth in the long run.

As to the input factors, capital investment has positive impact and significant on employment and inclusive growth in the long run. The table shows that labour force participation rate influences income growth positively but impacted income equality, employment and inclusive growth negatively. For other control variables, trade openness has an adverse effect on income growth and inclusive growth but influences income equality and employment positively. Inflation rate directly affects income growth but indirectly influences income equality, employment and inclusive growth. Exchange rates have positive effect on income growth and employment but negatively affect income equality and inclusive growth.

In addition, the coefficient of determination (measured by the Adjusted-R^2) is relatively high for the estimated models. The statistics showed that about 40.71%, 41.31%, 34.59% and 45.51% of the total variations in income growth, income equality, employment and inclusive growth were explained by institutional quality and other control variables in the model. The overall test using the F-statistics are statistically significant at 5% level of significance showing that models are well specified and statistically significant. As for the diagnostic tests, the estimated VECM models are tested for serial correlation, normality and heteroskedasticity. The results from these tests are also shown in Table 6b. The results revealed that the models passed the serial correlation test indicating that the error terms are not correlated up to order 2. The null hypothesis of normality and heteroskedasticity tests were not rejected at the conventional rate implying that the error terms are normally distributed and have same variance.

4.4 Discussion of findings

The findings from this study, using the Vector Error Correction Model (VECM) estimator, reveal that institutional quality negatively affects income growth, income equality, and inclusive growth in the short run, while it has a positive but statistically insignificant effect on employment. This aligns with some empirical studies that suggest that institutional quality does not always immediately foster inclusive growth. For instance, Kumeka, Raifu, and Adeniyi (2024) found that institutional quality did not significantly impact inclusive growth across 45 African countries. Similarly, Botchuin (2021) reported that government stability negatively influenced inclusive growth in Cote d'Ivoire. These results highlight the complexity of institutional dynamics, where governance structures, political stability, and policy efficiency may take time to yield positive economic effects. The short-run negative impact could also reflect institutional weaknesses, inefficient regulations, or transitional disruptions in governance reforms.

However, the long-run results suggest that institutional quality significantly enhances income growth, income equality, and inclusive growth at a 5% significance level, while its effect on employment remains insignificant. This aligns with previous studies indicating that strong institutions contribute to long-term economic stability and inclusivity. For example, Nawaz, Iqbal, and Khan (2014) concluded that institutions play a crucial role in determining long-term economic growth trajectories, while Sabir and Qamar (2019) found that institutions positively influence inclusive growth in developing Asian countries. Additionally, Doumbia (2018) confirmed that government effectiveness and the rule of law significantly impact inclusive growth. These findings reinforce the argument that, although institutional reforms may have initial negative or negligible effects, they gradually promote inclusive economic expansion as governance improves and regulatory frameworks strengthen.

5. Conclusion

This study provides an empirical insight on the links between institutional quality and inclusive growth in Nigeria for a period of 1984 and 2020. Using the vector error correction model (VECM) estimator, the short-run parameters of institutional quality were negative in income growth, income equality and inclusive growth models while the parameter of institutional quality in employment model is positive. Among all the parameter estimates, institutional quality negatively and significantly influences income growth and inclusive growth. Thus, institutional quality had a negative effect on inclusive growth in the short run. Meanwhile, the statistical long-run effect of institutional quality on income growth, income equality and inclusive growth was established at 5% level but was not confirmed in employment at the conventional level. Thus, the study shows that institutional quality can improve the inclusiveness of growth in the long run. The study reported that poor institutions affected inclusive growth in the long run majorly through the government stability, control of corruption, law and order and bureaucracy quality. It therefore suggests the need for government to improve quality of public services and their ability to formulate and implement sound policies and regulations as they are adherent to the growth inclusiveness process in Nigeria. Also, the government should prioritize institutional reforms that improve governance, transparency, and accountability. This includes strengthening anti-corruption agencies, enforcing the rule of law, and promoting bureaucratic efficiency to reduce rent-seeking behaviour and public sector inefficiencies. Ensuring political stability, regulatory quality, and effective public service delivery will create an environment where economic opportunities are equitably distributed, fostering sustainable and inclusive economic development.

5.1 Limitations and areas for further studies

This study is subject to limitations that provide opportunities for further research. First, while the VECM effectively captures short-run and long-run relationships, it does not account for potential nonlinearities and structural breaks in institutional quality's impact on inclusive growth. Future studies could explore threshold or regime-switching models to assess whether institutional reforms yield different effects at varying levels of development. As well, this study focuses on Nigeria, limiting the generalizability of findings to other economies with different institutional frameworks; comparative cross-country analyses could provide broader insights. Moreover, the study primarily considers government stability, corruption control, law and order, and bureaucracy quality, whereas future research could investigate the role of informal institutions, political dynamics, and digital governance in shaping inclusive growth. Expanding the scope to incorporate sectoral-level institutional impacts (such as education, healthcare, and financial regulation) would also provide

a more comprehensive understanding of the institutional determinants of inclusive economic development.

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Appendix

VAR Lag Order Selection Criteria
Endogenous variables: incg k lb iq topen inf exr
Exogenous variables: C
Sample: 1985 2020
Included observations: 33

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-648.4844	NA	4.22e+08	39.72633	40.04377	39.83313
1	-465.9495	276.5679*	138288.8	31.63331*	34.17283*	32.48778
2	-402.7854	68.90627	90391.41*	30.77488	35.53649	32.37701
3	-325.2658	51.67977	67104.34	29.04641	36.03011	31.39621*

* 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

VAR Lag Order Selection Criteria
Endogenous variables: gdpg k lb iq topen inf exr
Exogenous variables: C
Sample: 1985 2020
Included observations: 33

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-695.5842	NA	7.33e+09	42.58086	42.89830	42.68767
1	-519.8917	266.2007	3635731.	34.90253*	37.44205*	35.75700
2	-452.1176	73.93534*	1797186.*	33.76470	38.52632	35.36684
3	-375.3161	51.20100	1393539.	32.07976	39.06347	34.42957*

* 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

VAR Lag Order Selection Criteria
Endogenous variables: equ k lb iq topen inf exr
Exogenous variables: C
Sample: 1985 2020
Included observations: 33

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-715.3853	NA	2.44e+10	43.78093	44.09837	43.88773
1	-520.4638	295.3355	3764011.	34.93720*	37.47673*	35.79167
2	-451.6689	75.04898*	1748973.*	33.73751	38.49913	35.33965
3	-385.2977	44.24746	2551785.	32.68471	39.66841	35.03451*

* 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

VAR Lag Order Selection Criteria
Endogenous variables: emp k lb iq topen inf exr
Exogenous variables: C
Sample: 1985 2020
Included observations: 33

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-705.2929	NA	1.32e+10	43.16927	43.48671	43.27607
1	-539.4362	251.2980*	11885598	36.08704*	38.62657*	36.94152
2	-474.2706	71.08979	6881423.	35.10731	39.86892	36.70945
3	-388.0055	57.51006	3006868.*	32.84882	39.83252	35.19862*

* 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