INTERMEDIATING ROLES OF INSTITUTIONAL INFRASTRUCTURE IN THE TRADE OPENNESS-INCLUSIVE GROWTH NEXUS: NEW EMPIRICAL EVIDENCE FROM NIGERIA

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ABSTRACT

Introduction: Inclusive growth (IG) is a revolutionary method for generating and sustaining macroeconomic stability through economic development, social equity, and prosperity. There has been little theoretical and empirical study in Nigeria on analyzing the effects of trade openness on inclusive growth and exploring its determinants.

Methods: This study examines the intermediating roles of institutional infrastructure in the trade openness-inclusive growth nexus in Nigeria spanning from 1985 to 2021. The study employed the Johansen Cointegration methodology to confirm the existence of the long-run association while fully modified ordinary least squares (FM-OLS) and dynamic ordinary least squares (DOLS) techniques are used to elucidate the uncertainty in the trade openness-inclusive growth nexus.

Results: Consequently, the results of the Johansen Cointegration confirmed the long-run association among variables. The FM-OLS and D-OLS indicate that trade openness enhances growth in Nigeria, suggesting that greater trade openness would foster inclusive growth and remain a focal point for both direct and indirect relations with inclusive growth. The interaction effects of trade openness and institutional infrastructure on inclusive growth show negative and insignificant effects on inclusive growth, demonstrating that institutional infrastructure plays a mitigating influence in the relationship between trade openness and inclusive growth, albeit insignificant at a 5% level.

Conclusion and suggestion: The study recommends that Nigeria should pursue policies aimed at improving institutional infrastructures with a way of reducing transactional costs and risks related to trading.

INTRODUCTION

Over the decades, global trade, among other things, has been a key catalyst for economic growth, attracting the attention of academics across various trade-related growth investigations (Arvin et al., 2021; Yussif et al., 2022). Further, the integration of the world and pronounced trade openness has resulted in fundamental transformations in the economic environment, resulting in both possibilities and unforeseen threats to participating country growth (Seyfullayev, 2022). Due to the diversity of economic frameworks, technology, institutional infrastructures, and human capital, trade openness has long been a concern for many nations, particularly developing countries (Zahonogo, 2016). Theoretically, trade openness promotes growth by enhancing job creation and domestic value added through its impact on investment, knowledge transfer, and competitiveness. Also, it promotes diversity in the opportunities and competencies to benefit from global trade openness and inclusion (Nguyen & Bui, 2021; Seyfullayev, 2022). Hence, a large corpus of empirical literature has been piloted to substantiate the benefits of international trade among countries and economic agents by investigating the dynamics as well as instituting causal linkages but with divergent outcomes (see Dollar & Kraay, 2004; Grossman & Helpman, 1990; Joshua et al., 2020; Keho, 2017; Ogede, 2014; Ozturk & Acaravci, 2010; Ulaşan, 2015). Hence, the documentation on the trade openness-inclusive growth nexus, and also the role of institutions in the relationship between trade openness and inclusive growth in Nigeria is scarce while few studies provide conflicting outcomes.

While the detrimental contribution of trade openness on economic growth is still a questionable issue, the impact of trade openness on inclusive growth is a challenge that is far from an inference due to a lack of theoretical framework, data, as well as methodological differences. Moreover, trade openness offers a pivotal role in reducing poverty and enhancing income redistribution, and, at large, inclusive growth, but largely underutilized. Furthermore, today's global trade system has been credited with promoting inclusive growth through increasing shared wealth and decreasing poverty (World Bank, 2018). In theory, trade openness influences inclusive growth by passing through both direct and indirect pathways (APEC, 2015). First and foremost, the direct link between trade and inclusive growth is determined by how trade itself benefits the poorest segments of society without the assistance of the country's economy or government. This may occur if the exporting sector of an economy employs low-wage workers or if exporting businesses are situated in areas with lower incomes, such as rural areas. Also, if an increase in imports results in lower prices for the products that make up a sizable component of the poor's consumption basket, this will promote inclusive growth. Second, trade openness is communicated toward inclusive growth through the employment and consumption multipliers, sometimes known as the trickle-down effect. This channel

explains how trade-induced output growth enhances the earnings or income of trade sector employees, increases their demand for all goods, and eventually raises the income and- purchasing power of all workers across all sectors in a competitive and frictionless labor market (Hong, Oh, & Sim, 2018). In general, this channel demonstrates that increasing trade growth leads to increased GDP, which can lead to inclusive growth.

A growing consensus seems to suggest that institutions play a significant role in shaping the distribution of economic growth benefits among various economic actors while also safeguarding property rights (Agyei & Idan, 2022). This leads to the hypothesis that improving institutional infrastructures is a key factor in fostering economic growth, which is a prerequisite for poverty reduction (Tebaldi & Elmslie, 2008) and addressing inequality (Glaeser et al., 2004). Furthermore, it is posited that accurately assessing the impact of trade on economic performance requires consideration of essential factors, such as the level of institutional infrastructures within the domestic economies of the trading nations. The literature highlights that institutional infrastructure is expected to influence the productivity of local businesses, which, in turn, has significant implications for overall economic performance and can also affect other growth drivers, such as foreign direct investment. Nevertheless, prior research has typically examined trade openness, institutions, and inclusive growth in isolation, even though institutions are acknowledged as facilitators of both trade openness (Ali et al., 2020; Asamoah et al., 2019; Hakimi & Hamdi, 2020) and inclusive growth (Berkhout et al., 2018; Pritchett & Werker, 2012).

Given the preceding, the policy thrust of the current study is to gauge the nexus regarding trade openness and inclusive growth. Our motivation centers on the hypothesis, trends, and its impact on Nigeria. The case of Nigeria is of particular importance. Conventionally, the benefits of Nigeria dealing with other nations are believed to be substantial, given that the majority of trading partners are large merchants, particularly in the oil and gas business, which is one of the most important industries in global trade. They, however, have not resulted in full employment, equity, or income increase. Nigeria, in comparison to other African nations, does poorly in terms of poverty reduction, with a larger proportion of Nigerians living below the national poverty line (World Bank, 2022). Also because the majority of Nigerians work in small-scale domestic farm and non-farm enterprises, their hard effort does not convert into an escape from poverty.

So the fascinating question remains as to whether trade openness will positively or negatively influence Nigeria's inclusive growth? Whether the interaction of institutional infrastructures with trade openness matter in the trade openness-inclusive growth nexus? As a result, this study empirically assesses the relationship between trade openness and inclusive growth and investigates the mediating role of institutions in the relationship between trade openness and inclusive growth in Nigeria spanning from 1985 to 2021. This

study is significant for the following reasons. First, it expands the context of inclusive growth by concentrating on Nigeria with notably relatively low growth inclusiveness. Secondly, to better understand the influence of trade openness on inclusive growth, the study creates an inclusive growth index using principal component analysis on income growth, income equality, and employment. A large corpus of prior empirical research used various proxies without examining how components of inclusive growth- service penetration, income growth, income equality, and employment can be impaired or enhanced by trade openness. Therefore, the viewpoints were constructed based on Anand et al. (2007) framework for inclusive growth, which was deemed relevant for elucidating the connection between trade openness, institutional quality, and inclusive growth. Consequently, it is appropriate to employ data and methods to provide empirical evidence for the underlying structural relationship among trade openness, institutional infrastructure, and inclusive growth in Nigeria. From a methodological perspective, this study utilizes the fully modified ordinary least squares (FMOLS) approach pioneered by Phillips and Hansen (1990) and dynamic ordinary least squares (DOLS). This choice is made because ordinary least squares (OLS) tend to yield skewed and unpredictable results when cointegration is present. Furthermore, FMOLS and DOLS not only yield accurate estimates but also allow for the consideration of serial correlation in the predictor variables, thereby addressing issues of serial correlation and endogeneity. Additionally, the study seeks to elucidate the core dynamics of the trade openness-inclusive growth relationship in Nigeria, with the aim of deriving essential policy implications and contributing to research in this area. The subsequent sections of this paper are organized as follows: Section 2 contains the literature review, while Section 3 outlines the methodology. Section 4 presents the findings, and Section 5 offers concluding remarks.

LITERATURE REVIEW

Over the years, the connection between economic growth and trade liberalization has garnered significant global attention. Recent studies have highlighted the impact of trade on economic development in both advanced and emerging economies. For instance, research conducted by Arvin et al. (2021), Coban et al. (2020), Kong et al. (2021), Makki and Somwaru (2004), Martin (1992), Ogede (2004), and Singh (2022) supports the notion that trade plays a role in fostering economic growth. Benita (2019) demonstrates a somewhat positive correlation between trade openness and economic growth, particularly when focusing on Latin American countries. In contrast, Mohamed (2021) employs the generalized method of moments (GMM) to substantiate the positive relationship between trade openness and economic development in a panel of four North African nations, namely Tunisia, Morocco, Algeria, and Egypt, spanning from 1991 to 2015. Furthermore, Mohamed suggests that trade openness serves as a complement to financial

development, with its impact being more pronounced when combined with financial development indicators. Chhabra, Giri, and Kumar (2022) add to this discussion by highlighting the benefits of increased openness and higher GDP in BRICS nations for agricultural commodity trade. These findings collectively underscore the complex and multifaceted relationship between trade and economic development on both regional and global scales.

Empirical research provides evidence supporting the inverse relationship between trade openness and economic development, diverging from the empirical literature that predominantly advocates a positive correlation (Ali & Abdullah, 2015; Musila & Yiheyis, 2015; Hossain & Maitra, 2020). Ali and Abdullah (2015) argue that weak institutions and inadequate management contribute to the adverse long-term effects of trade openness on Pakistan's economic growth, counter to prevailing findings. In a comparison with highly diversified economies, Huchet et al. (2018) illustrate that trade openness's impact tends to be minimal or negative for less diversified nations primarily reliant on low-quality commodity exports. Hossain and Maitra's (2020) research highlights the volatility of trade openness effects in India, with favorable short-term outcomes but detrimental long-term consequences. Another perspective suggests that trade's influence on economic growth may be marginal (Musila & Yiheyis, 2015; Huchet et al., 2018). Consequently, multiple studies underscore the variability of trade openness policy outcomes across different countries (Rani & Kumar, 2019).

Further, a multitude of literature has focused on the significance of institutional infrastructure on economic growth and or inclusive growth, with a number of macroeconomic factors including poverty, inequality, and inflations amongst others (see Acemoglu et al., 2008; Aslam & Zulfiqar, 2016; Aslam et al., 2021; Bandura, 2020; Chhabra et al., 2023; Chong & Gradstein, 2007; Sabir & Qamar, 2019; Sarwar, et al., 2013; Sheikh & Malik, 2021; Zergawu et al., 2020; Zhuang & Ali, 2010; Zhuang et al, 2021). These studies argue that output growth maximizing returns from trade openness requires enhancing the quality of institutions. Ali et al. (2007) emphasize the critical role institutions play in the effectiveness of policy implementation. They argue that institutions and governance must be integrated to achieve inclusive growth outcomes. This integration, they suggest, makes policies more favorable to marginalized populations, thereby facilitating higher growth objectives. This viewpoint finds support in the research of Aslam and Zulfiqar (2016).

Additionally, Sabir and Qamar (2019) contend that fiscal policy and institutions positively impact inclusive growth in selected developing Asian countries, as observed through the system generalized method of moment. On a different note, Bandura (2020) finds no significant joint impact of trade openness and institution quality on financial sector development across 26 sub-Saharan African countries during the 1982-2016 period,

using system GMM estimation. Furthermore, using the endogeneity expunging GMM technique, Sheikh and Malik (2021) argue that institutional infrastructure indirectly enhances economic performance when coupled with higher imports in emerging BRICS countries. In a similar vein, Aslam et al. (2021) employ the same methodology to show a direct correlation between institutional quality and inclusive growth in higher-income countries but not in other income groups during the period 2010–2017. Their study underscores the significance of social and digital inclusivity across all three income groups, with the exception of social inclusion in middle-income countries.

In a recent study by Chhabra et al. (2023), it is argued that trade and institutions exhibit a complementary relationship with economic growth in the short term. However, in the long run, the effectiveness of trade openness in promoting growth in Brazil, Russia, India, China, and South Africa is constrained by the absence of sound governance practices. Despite the widespread attention given to the trade-led growth hypothesis globally, there has been limited empirical exploration of the connection between trade openness, inclusive growth, and the moderating role of institutional infrastructure. Given these considerations and the evolving landscape of trade openness in recent years, this research endeavors to empirically assess the impact of trade openness on Nigeria's inclusive growth. It does so by considering domestic institutional factors to ascertain whether Nigeria has derived benefits from increased trade openness. Based on the outcomes of our empirical analysis, the following propositions are put forth:

Hypothesis 1: There is a significant relationship between trade openness and inclusive growth.

Hypothesis 2: The interaction of institutional infrastructures and trade openness can significantly impact inclusive growth.

RESEARCH METHODS

Data Sources and Measurement of Variables

The primary aim of this study is to elucidate the influence of institutional infrastructure interactions on the relationship between trade openness and inclusive growth in Nigeria. To empirically investigate this, we utilized data spanning from 1985 to 2021, which was gathered from various sources. These sources encompass the World Development Indicators (WDI), the statistical database of the International Monetary Fund (IMF), the International Country Risk Guide (ICRG) compiled by Political Risk Services, and data from the Nigeria Bureau of Statistics (NBS). The main focus of our analysis involves three key variables: trade openness, inclusive growth, and institutional infrastructure. Inclusive growth, in this context, is defined as a measure that considers the speed and distribution of output growth, as well as its impact on employment within an economy. This definition aligns with the absolute concept of pro-poor growth. Given the multifaceted nature of inclusive growth, which encompasses employability, output

growth pace, and distribution, we selected three indicators: per capita income growth, income inequality, and unemployment rate to represent it. To derive a comprehensive measure of inclusive growth, we employed a principal component analysis (PCA). This method was chosen for its ability to reduce the dimensionality of a dataset containing a large number of mostly unrelated variables while retaining a significant portion of the dataset's variability. The PCA method allowed us to condense the information from the three selected indicators, originally derived from the AMP inclusive growth framework, into a single variable denoted as "inclusive growth."

The second crucial variable considered in the study is trade openness. Trade openness measures the trade between two or more countries. The present study, therefore, gauges trade openness with total trade expressed as a percent of GDP following the extant literature on the subject (see Agyei & Igan, 2022; Ogede, 2004; Ogede & Tiamiyu, 2023; Zahonogo, 2016). However, institutional infrastructures or factors are important in defining game rules for society because they provide formal and informal restrictions on the interactions between political, social, and economic systems. As a result, good institutions are thought to create incentives that reduce uncertainty and encourage productivity, resulting in improved inclusiveness growth. Strong institutions form the overall conditions for investment and growth and are seen as supporting a country's economic development. The role of institutions in inclusive growth has been demonstrated in both theoretical and empirical studies (see Acemoglu & Robinson, 2008; Agyei & Igan, 2022; Aslam, Naveed, & Shabbir, 2021; Grömling & Klös, 2019; Kaufmann & Kraay, 2018). The study, therefore, computed a weighted average of the economic, political, and institutional governances. Other explanatory variables identified as determinants of inclusive growth in the literature are capital stock and labor force participation rate. Capital investment, which is proxy by gross fixed capital formation, and employed to capture how much investment in human capital is made by the government to increase aggregate output, which subsequently leads to inclusive growth. The labor force participation rate depicts the estimate of a country's active workforce and it is the ratio of the labor force to the total working-age population. While control variables are inflation proxies by annual growth of the consumer price index and financial development. Financial development is measured using the domestic credit to the private sector measured as private-sector domestic credit by bank (% of GDP). However, Table 1 presents a summary of the variable sources, measurements, and expected signs.

Table 1. Data Description, Measurement, and Sources

Variables	Description	Data Sources
Inclusive growth (*lgi*)	A principal component analysis of income growth, equality, and employment.	Index-Author's computation
Institutional infrastructure (*iq*)	The average value of the economic, political, and institutional governments	ICRG
Capital investment (k)	Gross fixed capital formation to GDP	WDI (2021)
Labor force participation (*lfp*)	The ratio of the labor force to the total working-age population	WDI (2021)
Trade openness (*to)*	Total trade to GDP	WDI (2021)
Unstable price (*inf*)	Annual growth of consumer price index	WDI (2021)
Financial development (*fd*)	It captures domestic credit to the private sector by banks to GDP.	WDI (2021)

Source: Author's Compilations (2023)

As earlier stated, the study uses the principal component analysis (PCA) to construct composite inclusive growth, which considers income growth, income equality, and employment. Hence, the study calculates the eigenvalues for each component. With an eigenvalue greater than 1, this shows that the dispersion amount in the principal component explained by each component is retained. As a consequence, Table 2 presents the results of the principal components of the inclusive growth index generated from the three main components of inclusive growth.

Table 2. Principal Component Analysis for Inclusive Growth

Inclusive Growth Index

Principal Components	Component Matrix			Proportion	Cumulative Proportion	Eigen value
	Employment	Equality	Growth			
First PC	-0.7005	0.6686	0.2491	0.5124	0.5124	1.5371
Second PC	0.0457	-0.3063	0.9508	0.3275	0.8399	0.9825
Third PC	0.7121	0.6774	0.1840	0.1601	1.0000	0.4802

Source: Author's computation (2023)

Model Specification and Estimation Strategy

Since Kuznets and Solow's (1956) work, there has been theoretical literature on the link between economic growth, income disparity, and poverty. Nonetheless, a body of empirical research has shown that the endogenous growth model is useful in explaining inclusive growth (see Rauniyar & Kanbur 2010; Aslam 2020; Aslam et al, 2021). Solow (1956) illustrates that the production of the economy is determined by labor (L) and capital (K), as expressed as:

$$Y_t = f(K_t)\,(AL_t) \tag{1}$$

where Y is the output, K is referred to as capital, AL is effective labor, and A is the level of augmented technology. Exogenous growth at rates n and g is assumed for all factor inputs. Hence, production (Y_t) does not expand only as a consequence of labor and capital (K) expansion, but technology also plays a vital part in output expansion when joined with labor (AL_t). As a result of dividing equation (1) by effective labor, we get:

$$Y_t^* = A.f(K_t^*) \tag{2}$$

while Y_t^* (= Y_t/A.L) is output per effective labor and K* (= K_t/T.L) indicates capital per effective labor, such that capital depreciates (d) at time (t) grows. However, the relationship between output per effective labor, initial rate of output growth (y), savings/investment rate (s), depreciation rate (d), population growth rate (n), and technology (A) is expressed as:

$$Y_t^{**} = g(y, s, d, n, A) \tag{3}$$

Hence, production per effective labor rises as a function of initial output growth, savings, depreciation, and technology rising at a population growth rate (n), suggesting that as labor grows, so does technology. As a consequence, production (Y**) increases while the saving/investment rate and depreciation rate remain unchanged. The current analysis, however, considers that the A symbolizes not just technology, but also trade openness (to) resource endowments, or the quality of institutional infrastructures, all of which vary among nations. A duplicates an individual economy's initial technical endowment, as in Milton et al (2005). This can be mathematically represented in equation (4) as:

$$Y_t^{**} = g(y, s, d, n, to) \tag{4}$$

Equation (4) shows that increasing production per effective labor will reduce poverty and enhance job options for individuals, resulting in inclusive growth. Yet, because economic growth is the initial requirement for inclusive growth, and in hand, the study explores the components that substantially contribute to the nation's inclusive growth. This is stated in equation (5) as follows:

$$Y_t^{**} = g(y, s, d, n, to) \tag{5}$$

The study also hypothesizes that as population (n) increases, so do people's trading freedoms (*to*). Trade freedom or openness is a prerequisite for inclusive growth. As a result, society becomes more inclusive, and output (Y**) increases as a result. When effective production per labor expands, poverty decreases as employment rises, resulting in inclusive growth (IG). Consequently, Anand, Mishra, and Peiris (2013) established a unified metric of inclusive growth that included a social mobility function that focused on the pace and distribution of economic growth. Also, Y** is assumed to be the same as $\bar{y}^*$ in Anand, Mishra, and Peiris's (2013) (thereafter refer as AMP) framework. According to AMP, for an economy to witness inclusive growth, it needs an increasing income ($\bar{y}^*$) and this can be attained by increasing average income via growth ($\bar{y}$); or by improving equity (ϖ); or by combining increasing $\bar{y}$ and ϖ . Hence, to capture institutional infrastructure with the assumption of equal wealth distribution, the model equation (5) is re-specified in functional form as:

$$\bar{y}^* = \omega_0 + \alpha k + \beta to + \theta lfp + iq \tag{6}$$

As a consequence, the functional model equation (6) is re-specified in mathematical form including the disturbance term and time-specific effect as:

$$IGI_t = \omega_0 + \alpha k_t + \beta to_t + \theta lfp_t + iq_t + \varepsilon_t \tag{7}$$

The above theoretical equation shows that trade openness factors can either be direct or indirect on inclusive growth based on the level of income growth and wealth distribution which is driven by a country's institutional framework. For an adverse consequence, it implies that inadequate trade resources or low access of trade resources to the poor coupled with weak institutional quality causes a drag to growth inclusiveness. However, model equation (6) can be modified to incorporate the control variables as specified in equation (7):

$$IGI_t = \omega_0 + \omega_1 k_t + \omega_2 to_t + \omega_3 lfp_t + ctv_t + \varepsilon_t \tag{8}$$

Where *igi* is inclusive growth; *k* denotes capital investment; *to* represents trade openness which is a column vector of the ratio of total trade to GDP; and *lfp* is labor force participation rate. Other control variables (*ctv*) are unstable price proxies by annual growth of the consumer price index (*inf*) and financial development (*fd*). The stochastic term is represented by ε; *t* denotes time; and ω_0, ω_{1-4} are parameters.

The second objective of the study, hence, to establish the relationship between trade openness, institutional quality, and inclusive growth as well as the term interacting institutions with trade openness is stated as follows:

$$IGI_t = z_0 + z_1 k_t + z_2 to_t + z_3 iq_t + z_4 (iq * to)_t + z_3 lfp_t + ctv_t + \varepsilon_t \tag{9}$$

All variables remain as previously defined. The net effect of the interactive variable in equation (4) is calculated as:

$$\frac{\partial(igi)_t}{\partial(to)_t} = z_2 + z_4 iq \tag{10}$$

This reveals the net impact of trade openness on inclusive growth at the average value of institutional quality. It equally denotes the trade elasticity of inclusive growth at the mean value of institutions. Afterward, the interaction of institutional quality and trade openness on inclusive growth is conditional on the parameters: z_2 and z_4 in equation (10). Thus, if the net effect value is negative, it means that institutional quality and trade openness are substituted, while complement if the net effect value is positive. Similarly, it suggests that trade openness has a favorable impact on inclusive growth, and the quality of institutions improves and supplements the direct impact if $z_2 > 0$ and $z_4 > 4$. Also, trade openness contributes positively to inclusive growth, but the quality of institutional settings acts as a drag, leaking out the beneficial impact if $z_2 > 0$ and $z_4 < 0$. Meanwhile, trade openness has a detrimental influence on inclusive growth at the same time as institutional quality mitigates and minimizes the negative impact if $z_2 < 0$ and $z_4 > 0$. However, the perspective changes when $z_2 < 0$ and $z_4 < 0$ which implies that trade openness harms inclusive growth, likewise, institutions degenerate or magnify the adverse impact. Besides, z_2 and z_4 in equation (10) have different signs as they indicate the starting point of institutional quality beyond which trade openness is motivated to have a robust impact on inclusive growth.

However, the study presumes that trade openness is expected to have a direct relationship with inclusive growth. This is because as the trade between countries improves, more income is expected to be more inclusive in such countries. As external market provides adequate and easy access to trade resources mostly to the less privileged people in a way that generates an income growth that is inclusive. Also, trade sector development ensures that excess goods and services that will be available for domestic use by the providers will ensure growth inclusiveness. Likewise, a direct relationship is expected between institutional quality and growth inclusiveness. It denotes that an economy with a quality institutional framework would ensure that output growth promotes the welfare of the poor people. More so, capital investment is expected to have a positive relationship with inclusive growth. As capital investment increases, there are higher chances of more commodities available to people living in the economy thus improving income and growth inclusiveness. As regards labor force participation rate and financial development, they equally create the chances of increasing national income which will spur inclusive growth. We further assume that inflation is expected to have a

negative relationship with inclusive growth. A country experiencing stable prices has a higher chance of high inclusive growth.

In light of the discussion above, the paper uses a variety of econometric techniques to capture the economic analysis. These techniques include a pre-estimation assessment that is conducted using descriptive statistics, the unit root and cointegration to determine the stationarity and long-run co-movement of the variables, and regression analysis to determine the relationship between the variables. The study uses fully modified ordinary least squares (FMOLS) piloted by Phillips and Hansen (1990) and dynamic ordinary least squares (DOLS) since OLS produces skewed and unpredictable findings when cointegration is present. Along with offering accurate estimates, FMOLS also makes it feasible to account for the impacts of serial correlation in the predictor factors. Moreover, the optimum and unambiguous cointegrating regression estimates are provided by the FMOLS model (Ogede et al, 2023). Yet, the study's use of the DOLS estimator allowed it to overcome the issues of serial correlation and endogeneity. By employing parametric adjustments to the residuals and past and future values of the integrated predictors of order 1, the DOLS produces unbiased and consistent estimators. As a result, DOLS outperforms FMOLS estimators in terms of mean biases, which is consistent with Kao and Chiang (2000).

RESULT AND ANALYSIS

The empirical results of this research study are discussed in this section. The discussion of results started with descriptive analysis and summary statistics, which provided summary statistics of basic indicators of trade openness, institutions, and inclusive growth in Nigeria.

Pre-Estimation Results: Descriptive Statistics, Correlation and Unit Roots

The summary statistic of the variables presented in Table 3 indicated that the average rate of employment rate (empr) variable of growth inclusive was 88.87% whereas the maximum and minimum values are 98.2% and 72.9% respectively. Regarding the growth of gross domestic product per capita (gdpg) variable of growth inclusive, the average stands at 4.23%, while its highest and lowest rates are 15.32% and -2.04% respectively. It indicates that the standard of living accounts for an average of 4.23% of economic activities produced per individual in the Nigerian economy. Concerning the income equality (ineq) of inclusive growth, the mean value of the series is 59.15% with maximum and minimum values of 64.9% and 48.1% correspondingly. After using the principal component analysis to compute an index using the three components of inclusive growth, the average value of inclusive growth (igi) indicates a positive value of 0.0448 with maximum and minimum values of 1.828 and -2.171 respectively. The average values of the four key factor determinants of inclusive growth stood at 33.95%, 2.96%,

31.15%, and 58.91% for trade openness (to), institutional quality (iq), gross fixed capital formation (k), and labor force participation (lfp) respectively. Whereas, the maximum and minimum values are 53.27%, and 9.13% respectively for trade openness proxy by total trade as a ratio of GDP (to).

Table 3. Descriptive Statistics and Correlation

Variable Measurements	Mean	Max.	Min.	Std. Dev.	Skewness	Kurtosis
Employment (*empr*)	88.484	98.2	72.9	7.7715	-0.4703	2.0328
GDP growth (*gdpg*)	4.2344	15.329	-2.035	3.8614	0.4589	3.3972
(Income Equality) (in*eq*)	59.154	64.9	48.1	6.1610	-0.9019	2.3302
Inclusive growth index (*igi*)	0.0448	1.8289	-2.171	1.2486	-0.2411	1.8879
Trade openness (*to*)	33.955	53.278	9.1358	10.960	-0.3641	2.6643
Institutional Quality (*iq*)	2.9687	3.937	1.9375	0.4324	-0.2292	3.4951
Gross fixed capital formation (*k*)	31.154	54.948	14.1687	12.960	0.2352	1.7863
Labor force participation (*lfp*)	58.91405	61.21	53.91	2.126156	-1.1423	2.9094
Inflation, consumer prices (*inf*)	19.117	72.835	5.3880	17.441	1.7756	4.8461
Financial development (*fd*)	0.0356	2.6317	-2.1189	1.4008	0.1778	1.7075

Note: Std. Dev. – standard deviation; Max. – maximum; Min. – minimum.
Source: Author's Compilations (2023).

As regards the institutional quality, the maximum and minimum values were 3.937 and 1.937 respectively. This therefore means that the Nigerian institutions 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 maximum and minimum values for capital investment as a percentage of GDP (k) stood at 54.94% and 14.16% while the maximum and minimum values of labor force participation rate (lfp) stood at 61.21% and 53.91% respectively. For the control variables, the mean values of the inflation rate measured by the annual growth rate of the consumer price index (inf), and financial sector development (fd) are 19.11% and 0.0356% correspondingly. The two control variables have their minimum values to be at 5.388% and -2.118% whereas the

maximum values are 72.84% and 2.631% respectively inflation rate is measured by the annual growth rate of the consumer price index (inf), and the financial sector development (fd). As well, the standard deviation reports the rate at which these variables deviate from their individual mean values. All our variables have low deviation rates in varying magnitude from their mean values, as their standard deviation values are lower than average values except inclusive growth index and financial development proxy. Moreover, employment, income equality, inclusive growth index, trade openness, institutional quality, and labor force participation rate skewed leftward with a value of -0.4703, -0.9019, -0.2411, -0.3641, -0.2292, and -1.1423 respectively, while other indicators skewed rightward. Also, the Kurtosis identified 3.0 suggesting the normal distribution. Only GDP growth, institutional quality, and inflation exhibit normal distribution. All other variables are platykurtic in distribution implying that the variables are not normally distributed.

Table 4. Correlation Matrix

Variables	EMPR	GDPG	INEQ	IGI	TO	IQ	INF	FD	K	LFP
EMPR	1									

GDPG	-0.162	1								
	(0.336)	-----								
INEQ	-0.502	0.029	1							
	(0.001)	0.861	-----							
IGI	-0.869	0.332	0.818	1						
	(0.000)	0.044	(0.00)	-----						
TO	-0.102	0.278	-0.328	-0.046	1					
	0.546	0.095	0.047	0.786	-----					
IQ	0.044	-0.152	-0.481	-0.314	0.636	1				
	0.794	0.367	0.002	0.058	(0.00)	-----				
INF	0.425	-0.320	-0.178	-0.410	-0.075	-0.012	1			
	0.0087	0.053	0.290	0.011	0.657	0.940	-----			
FD	-0.735	-0.030	0.352	0.598	0.156	0.165	-0.301	1		
	(0.000)	0.857	0.033	0.000	0.353	0.326	0.070	-----		
K	0.688	-0.187	-0.327	-0.613	-0.284	-0.122	0.364	-0.848	1	
	(0.000)	0.265	0.048	0.000	0.087	0.4726	0.026	(0.00)	-----	
LFP	0.488	0.207	-0.349	-0.414	0.408	0.246	0.315	-0.582	0.585	1
	(0.002)	(0.217)	0.034	0.010	0.012	0.140	0.056	0.00	0.000	-----

Note: empr – employment; gdpg - GDP growth; ineg-Income Equality; igi- inclusive growth index; to - trade openness; iq- institutional quality; fd-financial development; inf-inflation; k- gross fixed capital formation; and lfp- labor force participation.
Source: Author's Compilations (2023).

Table 4 presents the partial correlation of trade openness, inclusive growth index, income growth, income equality, employment, institution quality index, investment, labor force, inflation, and financial development in Nigeria using an annual dataset within the period of 1985 and 2021. Summarily, the correlation values suggest the absence of perfect

multicollinearity among the predictive variables, as positive and negative relationships were reported among the variables of interest in varying magnitudes and signs. Consequently, the problem of multicollinearity is avoided in the empirical analysis.

Nevertheless, Table 5 presents the results of the unit root for the indicators. The tau-statistic was employed to assess the statistical significance of variables at the 1%, 5%, and 10% critical levels in both the intercept and trend models, considering levels and first differences. It's important to emphasize that the lag length used for determining the stationarity of these variables and conducting the unit-root test was automatically selected based on the Schwarz-Bayesian Information Criterion (SIC), with a few exceptions where it was set manually. The results obtained from the two-unit root estimation approaches, following conventional methods, led to consistent conclusions regarding the stationarity of the variables of interest. Specifically, at the 5% significance level, it was observed that these variables were not stationary at levels, with only a few exceptions. Consequently, the unit root test results did not reject the null hypothesis of non-stationarity at the level of 5% McKinnon significance. To further investigate, these variables, which were non-stationary at levels, were subjected to testing at their first differences. The results indicated statistical significance at the 5% level. This suggests that, at the first difference, the time series of these variables exhibited stationarity and integration of order one. Therefore, it can be inferred that after differencing at the first level, the series converge towards their long-run equilibrium or true mean.

Table 5. Phillips Perron (PP) and Augmented Dickey-Fuller (ADF) Unit Root Tests

Variables	Level		First Difference		Integration order
	PP	ADF	PP	ADF	
EMPR	-3.738**	-3.840**	-9.888***	-9.888***	I(1)
INEQ	-1.876	-1.800	-5.161***	-5.161***	I(1)
GDPG	-4.074**	-3.988**	-19.75***	-4.055**	I(1)
IGI	-2.201	-2.150	-6.997***	-7.117***	I(1)
TO	-2.518	-2.809	-12.33***	-7.531***	I(1)
IQ	-2.102	-3.393*	-4.970***	-5.024***	I(1)
K	0.265	-0.049	-6.324***	-6.246***	I(1)
LFP	-2.369	-2.961	-3.434*	-5.043***	I(1)
INF	-2.997	-2.448	-6.588***	-4.243***	I(1)
FD	-2.351	-3.145	-6.800***	-5.069***	I(1)

Notes: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%. Empr – employment; gdpg - GDP growth; ineg-Income Equality; igi- inclusive growth index; to - trade openness; iq- institutional quality; fd-financial development; inf-inflation; k- gross fixed capital formation; and lfp- labor force participation.
*MacKinnon (1996) one-sided p-values.
Source: Author's Compilations (2023).

Additionally, Table 6 presents the cointegration results. The co-integrating equation reported for the models indicates that, at a 5% significance level according to the McKinnon-Haug-Michelis test, the incorporated time series variables exhibit co-integration across all hypothesized co-integration equation orders, specifically with r = 6 for the linear deterministic trend model. However, the Max Eigenvalue test indicates cointegration in the second order, i.e., r = 2. This suggests the existence of cointegrating vector equations involving inclusive growth, trade openness, institutional infrastructures index, financial development, inflation, and gross fixed capital formation, as well as labor force participation rate and inflation, in their respective order. In summary, these findings imply a long-term relationship among trade openness, institutional infrastructure index, and inclusive growth in Nigeria. Consequently, both the unit root test and Johansen cointegration test point to the fully modified ordinary least square vector (FMOLS) as the most appropriate estimation technique for parameter estimates.

Table 6. Johansen Cointegration Test of Trade Openness and Inclusive Growth Index

| 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
IGI, TO, IQ, K, LFP, FD, INF	r = 0	0.9267	256.75***	125.62	88.879***	46.231
	r ≤ 1	0.8720	167.87***	95.754	69.907***	40.078
	r ≤ 2	0.6626	97.962***	69.819	36.943**	33.877
	r ≤ 3	0.5083	61.019***	47.856	24.136	27.584
	r ≤ 4	0.4053	36.883***	29.797	17.671	21.132
	r ≤ 5	0.2986	19.213**	15.495	12.060	14.265
	r ≤ 6	0.1897	7.1524***	3.8415	7.1524	3.8415

Note: *** & ** denotes rejection of the hypothesis at the 0.01 and 0.05 level respectively; igi- inclusive growth index; to - trade openness; iq- institutional quality; fd-financial development; inf-inflation; k- gross fixed capital formation; and lfp- labor force participation.

Econometric results and discussions

This section elaborates on the empirical findings of the paper. The study employs FM-OLS and D-OLS for testing the hypotheses. The results of FMOLS and DOLS are reported in Tables 7 and 8 respectively. Table 7 presents the results of the effects of trade openness and inclusive growth, as well as the intermediating effect of institutional infrastructure on trade openness and inclusive growth nexus in Nigeria using the FMOLS. Whereas Table 8 shows the results of the effects of trade openness and inclusive growth, as well as the intermediating effect of institutional infrastructure on trade openness and inclusive growth nexus in Nigeria using the D-OLS. Results of the FMOLS, as reported in Model 1, show that trade openness is an insignificant and positively elastic predictor of inclusive growth. The findings suggest that a once percentage point change in trade

openness leads to a 0.007 increase in inclusive growth on average. It evidences that robust trade activities enhance inclusiveness growth that ultimately stimulates income, equity, and employment in Nigeria. The finding is consistent with Agyei and Idan (2022).

Table 7. Fully Ordinary Least Squares (FM-OLS)

Variable	Inclusive Growth		Inclusive Growth Components					
	Inclusive Growth Index (igi)		Per Capita Income (gdpg)		Income Equality (equ)		Employment Rate (emp)	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
TO	0.0077	0.1883**	0.0614	0.4950**	0.1843	0.7725	-0.0741	-0.8183
	{0.026}	{0.0857}	0.072	0.2159	0.1393	0.4655	0.1563	0.5761
IQ	-1.4947***	0.6768*	-3.889***	1.042	-7.815***	2.691	3.916	-4.336
	{0.462}	{0.9911}	1.29379	2.4959	2.5037	5.3804	2.8081	6.6585
TO*IQ		-0.0680**		-0.1503**		-0.333**		0.2569
		{0.0280}		0.0707		0.1524		0.1886
K	-0.0382**	-0.0261**	-0.1863**	-0.1673**	-0.1972	-0.1335	0.0199	-0.026
	{0.0275}	{0.0249}	0.07692	0.0627	0.1489	0.1352	0.1669	0.1673
LFP	0.2584***	0.2398**	0.989968**	0.9733***	1.4874**	1.3793**	-0.2936	-0.22349
	{0.1290}	{0.1139}	0.36138	0.2868	0.6993	0.6183	0.7843	0.7651
FD	0.5547***	0.4605**	-0.8653	-1.0205**	2.308**	1.7692*	-4.170***	-3.864***
	{0.2126}	{0.1881}	{0.59557}	0.4736}	1.1525}	1.0209	1.2926	1.2634
INF	-0.0198***	-0.0273***	-0.08364***	-0.093***	-0.0395	-0.0834*	0.1051*	0.1307**
	{0.0093}	{0.0086}	{0.02601}	{0.022}	{0.0503}	{0.0466}	{0.0564}	{0.0576}
Constant	-8.9134	-14.093**	-37.2365*	-50.605***	7.3971	-16.328	93.481**	113.5**
	{6.8238}	{6.3556}	19.1118	16.0045	36.985	34.502	41.481	42.69}
R^2	0.619	0.653	0.469	0.497	0.424	0.468	0.601	0.608
Adj. R^2	0.541	0.566	0.359	0.371	0.305	0.335	0.518	0.509

Note: ***, ** &* denotes rejection of the hypothesis at the 0.01, 0.05, and 0.1 level respectively; standard errors in { }; igi- inclusive growth index; to - trade openness; iq- institutional quality; fd-financial development; inf-inflation; k- gross fixed capita formation; and lfp- labor force participation.
Source: Author's computation (2023).

The findings denounce the notion that trade openness has no impact on inclusive growth. However, the findings may be adduced to the low level of institutional and technological infrastructures in Nigeria, which has been declining over the years. Table 7 also presents the result of the effects of institutional infrastructure indicators on the

inclusive growth of Nigeria in Model 1. The results show that the coefficient of institutional infrastructure is a significant and negatively predictor of inclusive growth. The findings suggest that a once percentage point change in institutional infrastructure leads to a 1.494 decrease in inclusive growth on average. The other explanatory variables for the models are capital investment and labor participation. The coefficient of capital investment, proxy with gross fixed capital formation, is a significant and negatively determining factor of inclusive growth in Nigeria. While the coefficient of labor participation exerts a positive and significant effect on inclusive growth in Nigeria. With increased labor output, an economy may produce more goods and services with the same labor force. Also, due to higher output, a greater variety of items and services may be made available to the entire population for a given amount of labor, which contributes significantly to inclusive growth. The control variables for the models analyzing the individual impacts of institutions and trade openness on inclusive growth in Nigeria were established. In Nigeria, inclusive growth is significantly and positively impacted by the coefficient of financial development. This demonstrates the value of strengthening the nation's financial sector as a driver of inclusive growth. This result is consistent with findings made by Agyei and Idan (2022) and Khan et al. (2016), who discovered that improvements to the banking sector have made it simpler to obtain a loan for investments, which in turn, generally encourage inclusive growth. Additionally, the study reveals a negative correlation between inflation and inclusiveness, as indicated by a coefficient of -0.0198 and a significance level of 1%. Higher inflation rates are associated with a slower reduction of poverty levels and a negative impact on wealth redistribution due to reduced welfare growth. This is especially challenging for low-income households, which are disproportionately affected by rising food costs and limited alternative options (Rahul et al., 2013).

Furthermore, the research also explores the moderating effect of institutional infrastructure on the relationship between trade openness and inclusive growth in Nigeria, as presented in Table 7. In Model 2 of Table 7, trade openness is found to have a positive and statistically significant influence on inclusive growth, contrary to the results in Model 1. Specifically, a one percentage point increase in trade openness leads to an average 0.188 increase in inclusive growth. Additionally, the coefficient related to institutional infrastructure demonstrates a positive and significant impact on inclusive growth, indicating that a unit change in the institutional framework would result in a 0.678 increase in inclusiveness. However, it's worth noting that in Table 7, the coefficient associated with the interaction between trade openness and institutional infrastructure is negative, suggesting that the interplay between these factors reflects the true nature of institutional infrastructure in Nigeria. In essence, the findings highlight that the fragile state of institutions in Nigeria may hinder inclusive growth, even as trade openness positively contributes to it. Thus, Table 7 underscores the importance of strengthening

institutional infrastructures alongside trade openness to foster inclusive growth in Nigeria. Furthermore, the study examines the results of other explanatory variables and control variables within the models assessing the moderating role of institutions in the relationship between trade openness and inclusive growth in Nigeria. Notably, the coefficients and significance levels of these explanatory and control variables, including capital investment, labor participation, financial development, and inflation, remain largely consistent between Model 1 and Model 2.

Thus, a closer look at the robustness models (the components of inclusive growth) in Table 7, models 3-8, shows that trade openness positively impacts per capita income and income growth but negatively influences employment (models 7-8). The coefficient of institutional infrastructure is negatively impacted on per capita income and income growth in Models 3 and 5 respectively but positively related in Model 7 (employment rate). As for the interactive term of trade openness with institutional infrastructure, it significantly influenced per capita income and income equality negatively but the impact on employment rate is positive and insignificant statistically. Moreover, the models in columns 1–8 exhibit a high coefficient of determination, as measured by the Adjusted-R2, ranging from 42.4% to 60.1%. Specifically, in model 1, the adjusted R2 of 54.1% suggests that approximately 54.1% of the overall variations in inclusive growth can be attributed to the explanatory variable. Conversely, in the interaction model (Model 2), the adjusted R2 is slightly higher at 56.6%, indicating that around 56.6% of the total variations in inclusive growth are accounted for by the explanatory variable.

To further explore the relationship and the mediating role of institutional infrastructure in the context of trade openness and inclusive growth, we employ the DOLS approach, and the results are presented in Table 8. Notably, the findings from the DOLS approach closely mirror those from FMOLS. Specifically, the coefficient associated with trade openness (0.1225) is positive but statistically insignificant at a 5% significance level. This suggests that an increase of 1% in trade openness tends to have a positive effect on inclusive growth, with an estimated average increase of 0.122 units. However, when examining the interaction term of trade openness with the institutional infrastructure indicator (TOIQ), we observe a negative and statistically significant coefficient of -0.2509 at a 1% significance level. This indicates a negative relationship between the interaction of trade openness with institutional infrastructure and inclusive growth. In practical terms, a 1% increase in TOIQ is associated with a decrease in inclusive growth by approximately 0.2509 units. In light of these findings, both from FMOLS and DOLS, it becomes evident that the second hypothesis of the study, which posited a significant impact of the interaction between institutional infrastructures and trade openness on inclusive growth in Nigeria, must be rejected. This implies that the interaction between institutional

infrastructures and trade openness does not exert a significant influence on inclusive growth in the context of this study.

Table 8. Dynamic Least Squares (DOLS)

Variable	Inclusive Growth		Inclusive Growth Components					
	Inclusive Growth Index (igi)		Per Capita Income (gdpg)		Income Equality (equ)		Employment Rate (emp)	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
TO	0.1225	0.3510***	0.9976***	0.9252	0.4280	1.9792***	-0.0589	-0.7922
	{0.5377}	{0.0633}	{0.2685}	{0.5147}	{0.5121}	{0.3448}	{0.6849}	{0.9488}
IQ	-2.9739***	8.3859***	-11.659***	-13.289	-13.771***	53.116***	7.2136	-39.450
	{0.0735}	{1.9492}	{1.9647}	{15.845}	{3.7482}	{10.615}	{5.0131}	{29.206}
TO*IQ		-0.2509***		0.0870		-1.4019***		1.1564
		{0.0397}		{0.3225}		{0.2161}		{0.5945}
K	-0.0462*	-0.006*	0.0908	0.1009	-0.3771*	-0.4762***	0.1339	-0.4044
	{0.0247}	{0.0182}	{0.0902}	{0.1476}	{0.1721}	{0.0989}	{0.2301}	{0.2720}
LFP	0.09773	1.5933***	-1.3405	-1.8408	0.0709	7.7154***	-2.0008	-9.6968*
	{0.2510}	{0.2540}	{0.9172}	{2.0649}	{1.7497}	{1.3834}	{2.3402}	{3.8061}
FD	0.3315	1.0731***	-1.2167	-0.8504	0.3136	2.6469*	-4.1419	-9.1577**
	{0.3094}	{0.2113}	{1.1305}	{1.7179}	{2.1567}	{1.1509}	{2.8845}	{3.1666}
INF	0.0046	-0.1255***	-0.0373	-0.0136	0.1564	-0.4133**	0.1007	0.8655**
	{0.0152}	{0.0203}	{0.0554}	{0.1652}	{0.1057}	{0.1107}	{0.1413}	{0.3045}
Constant	0.2578	-101.34***	80.834	107.01	89.077	-451.02***	179.53	672.53**
	{12.773}	{16.853}	{46.669}	{137.00}	{89.032}	{91.778}	{119.08}	{252.52}
R^2	0.943	0.987	0.8865	0.9019	0.9373	0.9864	0.8552	0.923
Adj. R^2	0.793	0.916	0.583819	0.353149	0.7700	0.9099	0.4692	0.490

Note: ***, ** &* denotes rejection of the hypothesis at the 0.01, 0.05, and 0.1 level respectively; standard errors in { }; igi- inclusive growth index; to - trade openness; iq- institutional quality; fd-financial development; inf-inflation; k- gross fixed capital formation; and lfp- labor force participation.
Source: Author's computation (2023)

CONCLUSION

This study provides empirical insight into the links among trade openness, institutional infrastructures, and inclusive growth in Nigeria for the period of 1985 and 2021. The problem of weak institutions has been one of the major challenges impeding the Nigerian trade sector and growth inclusiveness. Thus, the issue on the ground is not just to ensure the quality of institutions amidst other economic goals, but to adopt appropriate policies that are able to sustain these qualities over the coming years as they

serve as a catalyst towards ensuring inclusive growth in Nigeria. Hence, the study empirically assesses the relationship between trade openness and inclusive growth and investigates the mediating role of institutions in the relationship between trade openness and inclusive growth in Nigeria.

The study employed the Johansen Cointegration methodology to confirm the existence of the long-run association while fully modified ordinary least square (FM-OLS) and dynamic ordinary least square (DOLS) techniques are used to elucidate the uncertainty in the trade openness-inclusive growth nexus. Consequently, the results of the Johansen Cointegration confirmed the long-run association among variables. The FM-OLS and D-OLS indicate that trade openness enhances growth in Nigeria, suggesting that greater trade openness would foster inclusive growth and remain a focal point for both direct and indirect relations with inclusive growth. The interaction effects of trade openness and institutional infrastructure on inclusive growth show negative and insignificant effects on inclusive growth, demonstrating that institutional infrastructure plays a mitigating influence in the relationship between trade openness and inclusive growth, albeit insignificant at a 5% level.

A study of this nature yields significant policy implications, particularly with respect to the discovery that the quality of institutions can impede trade openness and diminish the impact of trade on inclusive growth in Nigeria, challenging the notion that institutional infrastructure plays a substantial role in the relationship between trade openness and inclusive growth. Consequently, it is recommended that economies in Sub-Saharan Africa (SSA) pursue policies aimed at enhancing government effectiveness, reducing corruption, improving regulatory quality, upholding the rule of law, and fostering accountability. The presence of responsible institutions, transparent business practices, protection of civil liberties, respect for political rights, control of corruption, and political stability all contribute to the expansion of international trade by reducing transactional costs and trading-related risks.

Moreover, the findings regarding the role of financial development in the inclusive growth process in Nigeria are of paramount importance, suggesting that activities within the financial sector have the potential to enhance income distribution, economic growth, and employment in the country. Therefore, stakeholders need to ensure that financial resources are readily accessible to potential investors at affordable rates, thereby stimulating production and ensuring sustainable and equitable income distribution. This underscores the importance of providing credits at lower interest rates to facilitate business operations in Nigeria. Additionally, it is imperative for the government and its agencies to prioritize efforts to improve the development of the financial market since a

well-developed financial institution offering a wide range of both short and long-term financial options is indispensable for the efficiency of the monetary system.

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