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Examining the Mediating Role of Institutional Quality on the Relationship between Trade Openness and Economic Growth in Nigeria

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Abstract

This study investigated the relationship between trade openness, institutional quality, and economic growth in Nigeria, addressing the critical question of how governance factors affect the country's trade-driven growth. Using Freedom House data for institutional quality and applying the Augmented Dickey-Fuller (ADF) unit root test along with the ARDL estimation technique, the research aims to assess both the short- and long-term impacts of trade openness on economic performance. Findings reveal that trade openness boosts economic growth by 0.64% to 0.66% in the short run but reduces it by 0.55% in the long run. Political rights consistently have a negative influence on growth, while civil liberties positively contribute 0.013% to short-term growth but are insignificant in the long term. Interaction effects between institutional quality and trade openness show mixed outcomes. The study recommended enhancing governance to balance short-term trade benefits with long-term sustainable growth and highlights the need for policy reform to address institutional weaknesses.

Keywords: economic growth, Nigeria, institutional quality

Introduction

Nigeria's economic landscape reveals a complex interplay between institutional quality, trade openness, and economic growth. In 2020, trade openness was estimated at 44.6% of GDP (World Bank, 2022), reflecting Nigeria's significant participation in the global economy. However, this openness is heavily skewed by Commodity exports (oil and natural gas), accounting for more than 90% of total exports (Yuguda, Victor, & Olorunipa, 2022). Non-oil exports remain underdeveloped despite diversifying efforts, underscoring the need for broader trade diversification. Persistent bureaucratic inefficiencies, trade barriers, and infrastructural deficiencies constrain the country's trading potential.

The objective of the study is threefold: (i) to assess the impact of trade openness on economic growth, (ii) to evaluate the impact of institutional quality on economic growth, and (iii) to examine the mediating role of institutional quality on the influence of trade openness on economic growth in Nigeria. Using Freedom House data for institutional

quality and employing the ARDL estimation technique, the study aims to provide comprehensive insights into the short- and long-term dynamics of trade openness and institutional quality, offering valuable guidance for policymakers to enhance governance and promote sustainable economic development.

Trade openness refers to a nation's capacity to participate in global trade by reducing trade barriers, which can result in various benefits, such as improved efficiency, technology transfer, and specialization based on comparative advantage (Frankel & Romer, 1999). Several studies have highlighted trade openness as a key driver of long-term and sustainable economic growth (Oppong-Baah et al., 2022; Bunje, Abendin & Wang, 2022; Khan et al., 2020; Rana, 2020; Keho, 2017; Tahir & Azid, 2015; Alesina, Spolaore & Wacziarg, 2000; Sachs & Warner, 1995). This is supported in both long-term and short-term analyses, as evidenced by Malefane and Odhiambo (2018). However, there is also criticism of trade openness, particularly regarding its role in developing nations, which some argue have become dumping grounds for industrialized nations' goods under trade liberalization (Bunje et al., 2022; Easterly, 2008; Sarkar, 2005; Rigobon & Rodrik, 2004; Rodriguez & Rodrik, 2000). Researchers like Bunje et al. (2022) and Jalil and Rauf (2021) have questioned the empirical validity of prior studies, suggesting that trade restrictions may promote growth. Their findings were, however, heavily influenced by the methodologies employed. This study revisits the impact of trade openness on economic growth in Nigeria using updated data to address inconsistencies in past research.

Trade openness can stimulate economic growth by enabling countries to capitalize on their comparative advantages and access a broader range of goods and services. However, its effectiveness largely depends on the quality of a country's institutions (Omoke & Opuala-Charles, 2021). Institutional quality refers to the efficiency of regulatory processes that protect investors and improve access to capital. Weak or dysfunctional institutions create an unproductive economic environment, obstructing trade and hindering growth (Anyanwu & Yaméogo, 2015). In Nigeria, poor institutional quality, reflected in its low ranking on the Ease of Doing Business index, undermines investor confidence and impedes business activities (World Bank, 2020). This institutional fragility remains a major barrier to sustained growth (Abubakar, 2020; Utile, Ijirshar & Sem, 2021; Tran, Le, & Nguyen,

2021). This study aims to investigate these dynamics further, using Freedom House data on political rights and civil liberties, areas often overlooked in recent literature.

Poor institutional quality often hinders the potential benefits of trade openness (Omoke & Opuala-Charles, 2021). Issues such as policy inconsistencies, bureaucratic inefficiencies, and widespread corruption obstruct the positive impacts of trade liberalization. Acemoglu et al. (2001) emphasize the importance of strong institutions for maximizing the benefits of trade, as they play a crucial role in enforcing market regulations and trade policies. In their absence, the anticipated gains from trade openness are significantly reduced, constraining Nigeria's economic growth despite efforts to liberalize trade. Strengthening institutional quality is thus essential for Nigeria to fully realize the economic advantages of trade openness. The Nigerian economy, already fragile, has been further weakened since 2020 due to the COVID-19 pandemic and falling oil prices, resulting in a 1.92% contraction in real GDP (National Bureau of Statistics (NBS), 2021). Slow economic recovery has been exacerbated by structural challenges such as heavy reliance on oil, poor infrastructure, and institutional weaknesses (Onwudiwe & Okechukwu, 2023). Addressing these constraints, especially through institutional reforms, is key to unlocking Nigeria's growth potential and fostering sustainable development.

Despite increasing interest in the relationship between trade openness, institutional quality, and economic growth in Nigeria, the existing research remains inconclusive. Some studies report positive correlations (Asamoah, Mensah, & Bondzie, 2019; Thanh et al., 2019), while others highlight limited or negative effects (Acemoglu et al., 2001; Utile, Ijirshar, & Sem, 2021; Adetokunbo & Iddey, 2022). This inconsistency highlights the need for further empirical investigation to better understand the impact of trade openness on Nigeria’s economy. Few longitudinal studies have explored changes in trade openness and institutional quality over time, making it challenging to establish clear causal relationships. Improved methodologies, such as dynamic data analysis, are essential for addressing issues like serial correlation and heteroscedasticity (Ngouhouo, Nchofoung, & Kengdo, 2021; Adetokunbo & Iddey, 2022; Nzeh et al., 2022).

Additionally, the mediating role of institutional quality in this relationship has received insufficient attention, necessitating detailed studies to inform effective policy interventions. An attempt by Omoke and Opuala-Charles (2021) affirmed a positive influence but overlooked Political Rights and Civil Liberties as established in the Freedom House database. Thus, a research gap is provided to be exploited in this research. In another contribution to existing literature, this study integrated trade openness with institutional quality with a more recent dataset. These enable us to measure the degree of institutional quality pass-through trade openness and its effect on economic growth in Nigeria. The objective of this study was to conduct a comprehensive analysis of the correlation between trade openness, institutional quality, and economic development in Nigeria.

Political rights and civil liberties are fundamental components of institutional quality and good governance. The Freedom House dataset comprehensively measures these aspects, offering insights into how political and civil freedoms influence economic policies and outcomes (Azu & Mohammad, 2020). By incorporating this dataset, researchers can better understand how political and civil liberties contribute to the broader institutional framework that supports or hinders economic growth. A dynamic Autoregressive Distributed Lags (ARDL) estimation technique. This study seeks to provide policymakers and stakeholders with critical insights for navigating Nigeria's economic landscape and fostering sustainable growth and development by addressing methodological limitations and offering evidence-based policy recommendations.

The research fills a significant gap in the existing literature by addressing the often-overlooked mediating role of institutional quality, particularly political rights and civil liberties, on the relationship between trade openness and economic growth in Nigeria. Previous studies have either focused solely on the direct effects of trade openness or institutional quality without adequately exploring their interaction. By incorporating Freedom House data and employing a more recent dataset with the ARDL technique, this study contributes to a deeper understanding of how institutional quality can either enhance or diminish the benefits of trade openness. The scope of the research is justified by Nigeria's ongoing economic challenges, including weak institutions, overreliance on oil

exports, and inconsistent growth. Addressing these issues through an integrated analysis of trade policies and governance offers critical insights for policymakers to promote long-term economic stability and development.

This paper is organized into five sections. Following the introduction, Section Two provides a review of the empirical literature. Section Three details the methodological approach used in the study. Section Four presents and discusses the results, while Section Five offers the conclusion and recommendations.

Empirical Review

Several studies highlight the conditional nature of the impact of trade openness on economic growth. Malefane and Odhiambo (2018) show that trade openness positively influences growth in South Africa when specific proxies are used, suggesting the importance of supportive trade policies. Rana (2020) indicates that in Nepal, trade openness positively affects growth through investment, emphasising the need for policies that facilitate international trade. Mugun (2021) and Khan et al. (2020) confirm the positive relationship between trade openness and economic growth in Sub-Saharan Africa and Pakistan, with recommendations for improving trade policies to enhance economic outcomes. These findings collectively underscore the importance of context, measurement, and supporting policies in understanding the trade openness-growth nexus.

Recent research in the field has contributed to a more intricate and nuanced comprehension of the correlation between trade openness and economic growth. This challenges the conventional belief that trade restrictions automatically lead to economic growth. Jalil and Rauf (2021) question the validity of previous empirical results favouring trade restrictions. Bunje et al. (2022) demonstrate a mixed influence of trade openness on economic growth in Africa, with a sturdy positive relationship in Northern Africa but negative effects in other regions based on the fixed-effects model. Their study also reveals that the resilience of trade openness across different measures is inconsistent, as confirmed by the sys-GMM model. Conversely, Oppong-Baah et al. (2022) find that trade openness and real exchange rates significantly impact economic growth in Ghana and Nigeria, while inflation and investment show insignificant effects.

Some research has focused extensively on the interplay between trade openness, institutional quality, and economic growth, particularly in poorer nations (Khalil, Hussain, Bhatti, & Ibraheem, 2022). Research indicates that efficient institutions are crucial for promoting economic growth, especially in countries that have undergone significant trade liberalisation since the mid-1980s (Khalil et al., 2022). Developing nations, including Pakistan, have adopted policies to integrate into the global economy, as trade openness—defined as reducing trade barriers to encourage free trade—has been linked with improved economic development (Khalil et al., 2022).

Nzeh, Ogwuru, Okolie, and Okolie (2022) explored the relationship between economic openness, institutional quality, and per capita income in the Economic Community of West African States (ECOWAS) using a panel autoregressive distributed lag (ARDL) test with data from 2000 to 2020. They found that foreign direct investment (FDI) outflows and regulatory quality negatively impacted the ECOWAS economy. In the long run, trade openness, political stability, and FDI outflows negatively affected the economy, whereas regulatory quality had a positive impact.

Adetokunbo and Iddey (2022) extended this research to Nigeria, examining the link between economic development and openness with a focus on institutional quality. Their findings revealed a weak and inverse relationship between economic openness and growth, underscoring the need for improved institutional quality to achieve significant economic development. However, there are still gaps in understanding how institutional quality influences Nigeria's development dynamics and economic openness. Further research by Omoke and Opuala-Charles (2021) on Nigeria's economic development revealed the beneficial effects of export trade and the moderating role of institutional quality. Also, Utile, Ijirshar, and Sem (2021) examined how institutional quality affects economic growth in Nigeria. Their results indicated that poor institutional quality significantly negatively impacts economic growth, highlighting the necessity of addressing institutional weaknesses to foster sustainable development. However, there are still gaps in identifying the specific institutional reforms needed to mitigate these negative effects.

Ngouhouo, Nchofoung, and Kengdo (2021) examined the factors shaping trade openness in Sub-Saharan Africa (SSA), with a focus on the role of domestic institutions. Utilizing the Generalized Method of Moments (GMM) approach on data from 36 SSA countries between 1996 and 2017, their study revealed that domestic institutions play a critical role in determining trade openness. Key institutional factors such as effective administration, regulatory quality, and the rule of law were found to positively influence trade openness. Additionally, other factors like access to the sea, foreign direct investment (FDI), and prior trade levels also contributed. The study further identified significant impacts of inflation and population growth on trade openness, with GDP per capita having a positive effect.

Similarly, Chetthamrongchai, Jermsittiparsert, and Saengchai (2020) examined ASEAN countries and emphasised the complex roles of corruption and governance quality in global commerce. Their findings suggest a need for more empirical research to understand these dynamics and inform trade policy design. Lastly, Asamoah, Mensah, and Bondzie (2019) and Thanh, Nguyen, Canh, and Christophe (2019) highlighted the positive impacts of high-quality institutions on trade openness and economic growth in Sub-Saharan Africa and Vietnam, respectively, while Canh, Schinckus, and Thanh (2018) focused on innovation in 84 countries, stressing the importance of institutional reforms for innovation-driven development.

The literature consistently emphasises the critical role of institutional quality in fostering economic growth across various regions and income levels. Abubakar (2020) demonstrates through an OLS model that economic growth in Nigeria positively responds to institutional quality, specifically measured by contract-intensive money, with statistical significance. However, the effective governance index shows an insignificant positive influence. The study also highlights that domestic and foreign direct investments significantly impact economic growth, with a mixed positive and negative response, and reveals a long-term equilibrium adjustment rate of 34%. Tran et al. (2021) reinforces these findings using quantile regression methods with panel data, showing that institutional quality is a key determinant of economic development, particularly more effective in lower-income Asian countries. They also identify a nonlinear relationship between institutions and economic growth, with an institutional threshold beyond which growth benefits reverse. Other

variables such as inflation, labour force, trade openness, and infrastructure also play significant roles.

Further evidence from Wang et al. (2022) underscores the positive impact of institutional quality on economic output in Sub-Saharan Africa, with variations in effectiveness across different regions, notably more pronounced in West Africa. Abate (2022) and Singh and Pradhan (2022) extend this understanding by showing that institutional quality and economic freedom are crucial in the aid-growth relationship and long-term economic performance, respectively, while short-term effects are negligible. Azam et al. (2021) and Asghar et al. (2020) also confirm that institutional quality significantly contributes to sustainable development and economic growth, particularly in lower-middle-income countries, and stress the importance of enhancing institutional frameworks to boost economic outcomes. Uddin et al. (2023) further elaborate that improving institutional quality positively impacts the Human Development Index, highlighting the multidimensional benefits of robust institutions in developing nations.

The literature highlights the conditional nature of the impact of trade openness on economic growth, with mixed results across countries and regions. While studies like Malefane and Odhiambo (2018) and Rana (2020) show positive effects, others, such as Bunje et al. (2022), indicate inconsistencies, particularly in Africa. Research focusing on Nigeria (Adetokunbo & Iddey, 2022; Utile et al., 2021) emphasises weak institutional quality as a significant barrier to growth. However, gaps remain in understanding how institutional reforms can mitigate negative effects and enhance the benefits of trade openness. This study contributes by investigating the mediating role of institutional quality on Nigeria's economic growth.

Method

Model Specification

A relevant theory for the research is the Endogenous Growth Theory, which emphasises the role of internal factors such as human capital, innovation, and institutional quality in driving long-term economic growth (Romer, 1990). This theory extends classical growth models by incorporating factors that influence technological progress (A), a key element in

the expanded Cobb-Douglas production function used in this study. The inclusion of trade openness, institutional quality, and exchange rate variables aligns with the theory's focus on policy and governance (Lucas, 1988), recognising that well-functioning institutions and supportive trade policies are essential for enhancing technological development and economic efficiency, particularly in developing countries like Nigeria (Grossman & Helpman, 1991). By capturing these dynamics, the study provides a comprehensive framework for understanding how institutional quality mediates the relationship between trade openness and economic growth.

Following Mankiw et al. (1992) and Shahbaz (2012), Cobb–Douglas production function in period t is given below:

$$Y = A(t)L(t)^{\beta}K(t)^{1-\beta} \quad 0 < \beta < 1 \qquad (1)$$

In the given Cobb-Douglas production function, **Y** denotes the real domestic output, which is the total value of goods and services produced in an economy, while **A** represents the level of technological progress or efficiency in production. **L** is the labour input, signifying the workforce or labour hours used in production, and **K** is the capital stock, which includes machinery, infrastructure, and other physical assets employed to generate output.

In this extended version of the production function, technological progress (A) is no longer treated as an exogenous factor; instead, it is assumed to be influenced by several key macroeconomic variables: trade openness, institutional quality, and the exchange rate. Trade openness (TO) reflects the degree to which an economy engages in international trade, measured as the ratio of a country's total trade (imports plus exports) to its GDP. A more open economy may benefit from increased access to global markets, advanced technologies, and foreign investment, thereby enhancing technological progress.

Institutional quality (IQ) refers to the effectiveness of governance structures, including the rule of law, political stability, regulatory quality, and the protection of property rights. Strong institutions tend to create a conducive environment for economic activities, fostering innovation, investment, and technological advancement. Lastly, the exchange rate (**EXC**) plays a role in determining the cost of imported goods, capital, and technology, which can influence the level of technological progress. Fluctuations in the exchange rate

affect trade competitiveness, foreign investment, and access to cutting-edge technologies, thereby impacting overall productivity and growth. This is given as follows:

$$A(t) = \varphi.TO(t)^{\alpha} IQ(t)^{\delta} EXC(t)^{\alpha} \quad (2)$$

Where φ is the time-invariant constant, TO is trade openness, IQ is quality of governance, and EXC is the Exchange rate. Putting equation 2 into equation 1 would give:

$$Y = A(t)\varphi.TO(t)^{\alpha} L(t)^{\beta} K(t)^{1-\beta} IQ(t)^{\delta} EXC(t)^{\alpha} \quad (3)$$

Equation 3 is presented in a linear form as follows:

$$GDPC_t = \varphi_0 + \varphi_1 TO_t + \varphi_2 LAB_t + \varphi_3 CAP_t + \varphi_4 IQ_t + \varphi_5 EXC_t + \varepsilon_t \quad (4)$$

In this model, φ_0 represents a constant term while $GDPC_t$ denotes the real GDP at time t. TO_t stands for trade openness at time *t*, LAB_t represents the labour force participation rate at time *t* and CAP_t refers to the real capital stock at time *t*. IQ_t is the institutional quality indicator at time *t*, and EXC_t is the exchange rate indicator at time *t*. ε represents the white noise error term, accounting for random disturbances in the model.

This study employs annual data covering the period from 1981 to 2023. Economic growth is measured using real GDP in 2015 constant US dollars. Trade openness is defined as the ratio of total trade (exports plus imports) to GDP. The labour force participation rate captures labour input, and real capital stock is proxied by gross fixed capital formation. The data for these variables are sourced from the World Bank's World Development Indicators. Institutional quality is measured using the governance indicators from Freedom House, with a focus on two dimensions: political rights and civil liberties.

Table 1 Variables and Expectations

Variables	Measurement	Expectation	Sources
Economics Growth	Real GDP	Dependent Variable	WDI
Institutional	Political Rights and	Negative (-)	Freedom

Quality	Civil Liberties		House
Capital	Gross Capital Formation	Positive (+)	WDI
Labour	Labour Force Participation Rate	Positive (+)	WDI
Exchange rate	Nominal Exchange Rate	Positive (+)	WDI
Trade Openness	The ratio of Total Trade to GDP	Positive (+)	UNCTAD

This study finds it valuable to examine the role of institutional quality in the relationship between trade openness and economic growth. The analysis gains deeper insights by including the interaction between institutional quality and trade openness as an additional explanatory variable in the model. This is accomplished in the log-linear model specified in Equation (5) below:

$$GDPC_t = \varphi_0 + \varphi_1 TO_t + \alpha_2 LAB_t + \varphi_3 CAP_t + \varphi_4 IQ_t + \varphi_5 (TO \times IQ) + \varphi_6 EXC_t + \varepsilon_t \quad (5)$$

Theoretically, φ_1 is anticipated to yield positive, suggesting that trade openness enhances economic growth. Additionally, φ_2, φ_3, and φ_6 are anticipated to produce positive coefficients, indicating that the labour force participation rate, gross capital formation, and exchange rate have positive impacts on economic growth. Given that the Freedom House measures institutional quality in descending order, it is expected that φ_4, and φ_5 will yield negative coefficients. The term $(TO \times IQ)$ is an interaction variable, capturing the combined effect of trade openness and institutional quality on economic growth in Nigeria. If $\varphi_5 < 0$, the interaction between institutional quality and trade openness has a negative coefficient, indicating that these two variables promote economic growth in Nigeria. Conversely, a positive coefficient $\varphi_5 < 0$ suggests that the interaction between these two variables negates economic growth in Nigeria.

Estimation Technique

Autoregressive Distributed Lag (ARDL) model, as proposed by Pesaran and Shin (1999) and Pesaran et al. (2001), was utilised to analyse the impact of trade openness and institutional quality on economic growth in the short and long-run horizon. The ARDL method was employed due to its robustness and consistency in time series analysis. The reason for applying the ARDL method amongst other conventional cointegration methods is the clear advantage ARDL has over other alternatives (Muhammad, Azu & Oko, 2018; Bicudo & Azu, 2018). Firstly, the ARDL bounds testing approach allows the analysis of long-term relationships between variables, regardless of whether they are stationary at levels I(0), first difference, I(1), or a mixture of both (Nuhu, Isik & Azu, 2020; Yusuf & Mohd., 2020). Secondly, according to (Toriolaa et al., 2021), the long-run and short-run parameters can be computed simultaneously. Finally, this method is the most appropriate while working with a small sample size (Lim & Grosheck, 2021).

The researcher will perform unit root tests to determine the stationarity of the data. The ARDL (Autoregressive Distributed Lag) technique is commonly used by researchers to analyse the dynamic relationship between the dependent and independent variables, especially when the series consists of a combination of I(1) and I(0) variables. Once the appropriate lag structure for the ARDL model has been determined, researchers can test for the presence of cointegration using an F-test. This test evaluates the combined significance of the lagged levels of all variables. Furthermore, the researcher will utilise the error correction model (ECM) coefficient to assess the short-term association between the variables.

Equation 4 could be restated in the broad form of the Auto-regressive Distributive Lag model (ARDL) as follows:

$$GDPC_t = \alpha_0 + \varphi_1 TO_{t-i} + \varphi_2 PR_{t-i} + \varphi_3 CL_{t-i} + \varphi_4 CAP_{t-i} + \varphi_5 LAB_{t-i} + \varphi_6 EXC_{t-i} + \sum_{i=0}^{p} \varphi_7 \Delta GDPC_{t-i} + \sum_{i=0}^{p} \varphi_8 \Delta TO_{t-i} + \sum_{i=0}^{p} \varphi_9 \Delta PR_{t-i} + \sum_{i=0}^{p} \varphi_{10} \Delta CL_{t-i} + \sum_{i=0}^{p} \varphi_{11} \Delta CAP_{t-i} + \sum_{i=0}^{p} \varphi_{12} \Delta LAB_{t-i} + \sum_{i=0}^{p} \varphi_{13} \Delta EXC_{t-i} + ECM_t + \varepsilon_t \quad (6)$$

Note that all variables remain as previously described, where Δ represents the change in the respective variables and (-) denotes the lag sign. To satisfy the long-run relationship, the ARDL bound test requires a null hypothesis of no co-integration, HO: $\varphi_1 = \varphi_2 = \varphi_3 = \varphi_4 = \varphi_5 = \varphi_6 = 0$; denoted as for equation (6).

However, in this paper, one of the major aims is to assess how trade openness and institutional quality interact to influence Nigeria's economic growth. As such, an ARDL model emanates for equation 7 as follows:

$$GDPC_t = \alpha_0 + \varphi_1 TO_{t-i} + \varphi_2 PR_{t-i} + \varphi_3 CL_{t-i} + \varphi_4 CAP_{t-i} + \varphi_5 LAB_{t-i} + \varphi_6 (TO \times IQ) + \varphi_7 EXC_{t-i} + \sum_{i=0}^{p} \varphi_8 \Delta GDPC_{t-i} + \sum_{i=0}^{p} \varphi_9 \Delta TO_{t-i} + \sum_{i=0}^{p} \varphi_{10} \Delta PR_{t-i} + \sum_{i=0}^{p} \varphi_{11} \Delta CL_{t-i} + \sum_{i=0}^{p} \varphi_{12} \Delta CAP_{t-i} + \sum_{i=0}^{p} \varphi_{13} \Delta LAB_{t-i} + \sum_{i=0}^{p} \varphi_{14} \Delta (TO \times IQ)_{t-i} + \sum_{i=0}^{p} \varphi_{15} \Delta EXC_{t-i} + ECM_t + \varepsilon_t \quad (7)$$

While all variables and signs remain as earlier described, to satisfy the long-run relationship, the ARDL bound test requires a null hypothesis of no co-integration, HO: $\varphi_1 = \varphi_2 = \varphi_3 = \varphi_4 = \varphi_5 = \varphi_6 = \varphi_7 = 0$; denoted as for equation (7).

Results

Pre-Estimation and Cointegration Tests

The descriptive statistics can be found in Table 2, Panel A, while the correlation is presented in Panel B. The data from Freedom House is commonly employed to assess institutional quality. Prior to 2003, countries and territories were classified as Free if their average ratings for political rights (PR) and civil liberties (CL) fell within the range of 1.0 to 2.5. Those with ratings between 3.0 and 5.5 were categorised as Partly Free, while those with ratings between 5.5 and 7.0 were classified as Not Free. Beginning in 2003, the criteria for classification changed. Countries with combined average ratings ranging from 3.0 to 5.0 were labelled as Partly Free, while those with ratings between 5.5 and 7.0 retained the classification of Not Free. The stationarity of the variables was assessed using the Augmented Dickey-Fuller (ADF) unit root test. The result can be found in Table 3. It indicates that political rights, civil liberty, and labour participation rates remain constant at the same level. On the other hand, the real GDP, capital formation, exchange rate, and trade

openness exhibit stationarity when observed at the first difference. The selection of the ARDL estimation technique was justified.

Table 2 Descriptive Statistics and Correlation

Panel A Descriptive Statistics							
Statistics	GDPC	PR	CL	CAP	LAB	EXC	OP
Mean	3.21E	4.563	4.656	2.20E	55.68	150.9	0.325
Median	3.00E	4	5	1.87E	56.55	130.2	0.343
Maximum	5.35E	7	7	5.40E	56.85	426.0	0.440
Minimum	1.54E	3	3	2.01E	51.64	9.909	0.166
Std. Dev.	1.42E	1.216	0.827	1.83E	1.757	115.8	0.081
Skewness	0.160	1.109	0.705	0.352	-1.390	0.831	-0.451
Kurtosis	1.403	3.052	3.572	1.528	3.294	2.924	2.061
Jarque-Bera	3.538	6.558	3.087	3.549	10.41	3.691	2.259
Probability	0.171	0.038	0.213	0.170	0.005	0.158	0.323
Sum	1.03E	146	149	7.05E	1782	4828	10.39
Sum Sq. Dev.	6.27E	45.875	21.22	1.03E	95.72	415556	0.201
Observations	32	32	32	32	32	32	32
Panel B Correlation Matrix							
Variables	LNGDPC	PR	CL	LNCAP	LAB	EXC	OP
LNGDPC	1	-0.700	-0.066	0.987	-0.662	0.86459	-0.643
PR	-0.700	1	0.487	-0.698	0.376	-0.667	0.409
CL	-0.066	0.487	1	-0.110	-0.273	0.019	-0.185
LNCAP	0.987	-0.698	-0.109	1	-0.599	0.819	-0.553
LAB	-0.662	0.376	-0.272	-0.599	1	-0.878	0.756

EXC	0.865	-0.667	0.019	0.819	-0.878	1	-0.693
OP	-0.642	0.409	-0.185	-0.553	0.756	-0.693	1

Source: Authors Computations

Hypothesis Testing

Using the ARDL technique, the research employed a bound test for cointegration, as shown in Table 3. The model meets Banerjee et al. (1998) criteria for long-run relationships, with a negative ECM-1 of -1.93434 and -0.5013, significant at 1%. Table 3 also confirms Pesaran et al. (2001) criteria, as the F-statistics (13.51605 and 3.922908 for the main model and interaction model, respectively) exceed the upper bound at a 1% significance level, indicating a long-run relationship. The adjustment speed toward long-run equilibrium is 193% and 50.1%, implying no serial error correction or instability due to structural breaks (Sovbetov, 2018; Sovbetov & Saka, 2018).

Table 3 Augmented Dickey-Fuller (ADF) Unit Root Test Result

	Level		Ist difference		Order of integration
variables	t-statistics	p-value	t-statistics	p-values	
LNGDPC	-0.860812	0.7900	-4.038673	0.0031	I (1)
PR	-2.884296	0.0559	-5.890942	0.0000	I (0)
CL	-4.545427	0.0007	-5.173609	0.0001	I (0)
LNCAP	0.196720	0.9691	-4.377561	0.0012	I (1)
LAB	-4.125135	0.0034	-0.549730	0.8637	I (0)
EXC	2.863066	1.0000	-4.211353	0.0019	I (1)
OP	-2.021941	0.2767	-6.119333	0.0000	I (1)

Source: E-Views 12 output

Table 4 provides the long-run and short-run estimations of the effect of trade openness and institutional quality on Nigeria's economic growth. In the short run, the coefficients for

trade openness are consistently positive, with values of 0.638599 and 0.659377 for lags one and two, respectively, both statistically significant at the 1% level. This suggests that trade openness boosts the economy by 0.64% and 0.66% at these lags. However, in the long run, the impact of trade openness shifts. The long-run coefficient, reported in Panel B, is -0.54685 and statistically significant at 1%, indicating that over time, trade openness decreases Nigeria's GDP growth by 0.55%, assuming other factors remain constant. This result highlights a mixed impact of trade openness, benefiting the economy in the short run but posing challenges for sustained long-term growth.

Table 4 Summary of Cointegration Bound Tests

F-statistic (M-Model)	13.51605	EC_{M-1}	-1.93434***	(-15.306)
F-statistic (I-Model)	3.922908	EC_{M-1}	-0.50713***	(-10.481)
Significant level		10%	5%	1%
F-Bounds Test	Lower bound	1.85	2.11	2.62
	Upper bound	2.85	3.15	3.77

Note: the number in parenthesis represents t-statistics, *** signifies a 1% level of significance, F-statistics is determined with restricted constant and no trend

Source: E-views 10 Output

According to Freedom House data, a negative coefficient aligns more appropriately than a positive one. To address the second objective, which examines the impact of institutional quality on economic growth, the analysis focuses on civil liberty and political rights. The coefficient for political rights is 0.032945 and statistically significant at the 10% level, suggesting that political rights in Nigeria reduce economic growth by approximately 0.03%, all else being equal. This result holds in the long run, with a coefficient of 0.017031, also statistically significant at 10%, indicating a long-term negative impact of political rights on economic growth by 0.02%. Additionally, the influence of civil liberty was tested. In the short run, a coefficient of -0.01282, significant at the 1% level, indicates that civil liberty enhances economic growth by 0.013%, all else equal. However, in the long run, the

coefficient is 0.009829, but it is not statistically significant, suggesting a limited long-term effect of civil liberty on growth.

Table 5 Short Run and Long Run Regression

Panel A ARDL Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (LNGDPC (-1))	0.458152	0.064568	7.0957	0.0004
D (LNGDPC (-2))	1.249553	0.09283	13.46062	0.0000
D(PR)	0.032945	0.01688	1.951719	0.0988
D(CL)	-0.01282	0.00226	-5.67121	0.0013
D(LNCAP)	0.210545	0.013588	15.49498	0.0000
D (LNCAP (-1))	-0.24618	0.023291	-10.5697	0.0000
D (LNCAP (-2))	-0.26926	0.022718	-11.8521	0.0000
D(LAB)	-0.18915	0.017389	-10.8776	0.0000
D (LAB (-1))	-0.00786	0.016524	-0.47593	0.6510
D (LAB (-2))	0.148948	0.013738	10.84183	0.0000
D(EXC)	0.000891	0.000102	8.740218	0.0001
D (EXC (-1))	-0.00027	0.000101	-2.68205	0.0364
D (EXC (-2))	-0.00061	0.000115	-5.27981	0.0019
D(OP)	0.054015	0.035002	1.543193	0.1737
D (OP (-1))	0.638599	0.059841	10.67161	0.0000
D (OP (-2))	0.659377	0.058361	11.29829	0.0000
CointEq(-1)*	-1.93434	0.126377	-15.3062	0.0000
Panel B Long Run Estimation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.

PR	0.017031	0.007957	2.140317	0.0761
CL	0.009829	0.005908	1.663538	0.1473
LNCAP	0.342861	0.005858	58.52754	0.0000
LAB	0.029903	0.007516	3.978423	0.0073
EXC	0.001263	0.00019	6.632872	0.0006
OP	-0.54685	0.14514	-3.76775	0.0093
C	16.59508	0.370494	44.79181	0.0000

Case 2: Restricted Constant and No Trend

To assess the mediating effect of institutional quality on the relationship between trade openness and economic growth, the interaction between institutional quality variables and trade openness was analysed. A negative coefficient in this context suggests strong institutional control over the influence of trade openness on economic growth in Nigeria. As presented in Table 6, the short-run interaction between trade openness and political rights reveals consistently negative coefficients of -0.09684 and -0.10362 at level and lag one, respectively. This suggests that political rights enhance the positive impact of trade openness on Nigeria's economic growth by approximately 0.1%, all else being equal. This finding underscores the crucial role of political rights in amplifying the benefits of trade liberalisation. However, in the long run, the interaction coefficient remains negative at -0.67613 but is not statistically significant. This indicates that while political rights influence trade openness in the short term, their long-term mediating effect on economic growth is less conclusive.

On the other hand, the influence of civil liberty on the impact of trade openness has an inconsistent result. The coefficient is positive at level 0.693059 and statistically significant at 1%. This means that such influence tends to reduce the positive relationship of trade openness with economic growth in Nigeria by 0.7%, all things being equal. At lag one, the estimated coefficient is negative, -0.56167 and statistically significant at 1%. This implies that civil liberty could influence the positive impact on trade openness by approximately

0.56%, all things being equal. However, the long-run result reported a positive coefficient of 4.136753, but not statistically significant.

Table 6 Short Run and Long Run Regression (Interaction)

Panel A ARDL Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (LNGDPC (-1))	-0.52232	0.11595	-4.50466	0.0064
D(PR)	0.070221	0.01099	6.389267	0.0014
D (PR (-1))	0.031156	0.012661	2.460728	0.0572
D (CL)	-0.25528	0.037501	-6.80725	0.001
D (CL (-1))	0.219279	0.034354	6.382877	0.0014
D (LNCAP)	0.037068	0.019531	1.897926	0.1162
D (LAB)	-0.004	0.015117	-0.26426	0.8021
D (LAB (-1))	-0.11127	0.020764	-5.35884	0.003
D (EXC)	0.000829	0.000146	5.682218	0.0024
D (OP)	-3.29131	0.491255	-6.6998	0.0011
D (OP (-1))	3.277743	0.487039	6.729942	0.0011
D (PROP)	-0.09684	0.028947	-3.34552	0.0204
D (PROP (-1))	-0.10362	0.041774	-2.4804	0.0558
D (CLOP)	0.693059	0.097874	7.081115	0.0009
D (CLOP (-1))	-0.56167	0.091768	-6.1205	0.0017
CointEq(-1)*	-0.50713	0.048388	-10.4805	0.0001
Panel B Long Run				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
PR	0.256618	0.137578	1.865256	0.1211
CL	-1.4856	0.945968	-1.57046	0.1771
LNCAP	0.237801	0.044462	5.348382	0.0031
LAB	0.226538	0.062553	3.621561	0.0152
EXC	0.004667	0.001408	3.314193	0.0211
OP	-18.1694	11.46014	-1.58544	0.1737
PROP	-0.67613	0.421266	-1.60501	0.1694

CLOP	4.136753	2.556479	1.618145	0.1666
C	14.05349	4.699686	2.990303	0.0304

Case 2: Restricted Constant and No Trend

Discussion

The findings indicate a mixed impact of trade openness on economic growth in Nigeria, with positive effects in the short run but negative effects in the long run. In the short-run estimations, trade openness is associated with significant economic improvements, as seen with the coefficients of 0.638599 and 0.659377 at lags one and two, respectively, both statistically significant at 1%. These results are consistent with previous studies such as Nzeh et al. (2022) and Omoke and Opuala-Charles (2021), which also highlighted the positive short-term impact of trade openness on Nigeria's economy. However, the long-run coefficient of -0.54685 suggests a reversal, where trade openness reduces economic growth by 0.55%, a finding that diverges from short-run trends, emphasising the need for sustainable trade policies that balance short-term gains with long-term development.

The results on institutional quality, particularly regarding political rights and civil liberties, provide further insights. The political rights variable has a negative and significant influence on economic growth both in the short and long run, with coefficients of 0.032945 and 0.017031, respectively. This indicates that increased political rights may slightly hinder economic growth, an outcome aligned with the findings of Adetokunbo and Iddey (2022). Conversely, civil liberties seem to have a positive impact on economic growth in the short run, with a coefficient of -0.01282, suggesting that improvements in civil liberties can enhance Nigeria's economic performance. However, this influence diminishes in the long run, as the coefficient of 0.009829 is not statistically significant, reflecting inconsistencies in the impact of institutional quality over time. This outcome here seems to be consistent with Adetokunbo and Iddey (2022), Nzeh et al. (2022) and Omoke and Opuala-Charles (2021) in the short run. However, these researchers have used different data sources to measure institutional quality.

Regarding the mediating role of institutional quality, the interaction between trade openness and institutional variables reveals important dynamics. Political rights appear to moderate the relationship positively, as seen in the short-run interaction coefficients of -0.09684 and -0.10362, indicating that political rights enhance the impact of trade openness on economic growth by approximately 0.1%. This finding suggests that institutional reforms focused on political governance could strengthen the benefits of trade openness. In contrast, the interaction between civil liberty and trade openness yields mixed results, with both positive and negative coefficients across different lags. For example, a positive coefficient of 0.693059 indicates a reduction in the trade openness-growth relationship by 0.7%. In contrast, a negative coefficient at lag one, -0.56167, points to a strengthening influence of civil liberty on economic growth.

Table 7 Diagnostic Test

Diagnostic Tests	M-Model	I-Model
R-Square	0.986508	0.971275
Adjusted R-square	0.97094	0.940497
Durbin-Watson statistics	2.104611	2.386075
Serial Correlation	3.207297 (0.1475)	7.010855 (0.1740)
Heteroscedasticity Test	0.581756 (0.8363)	0.599183 (0.8195)

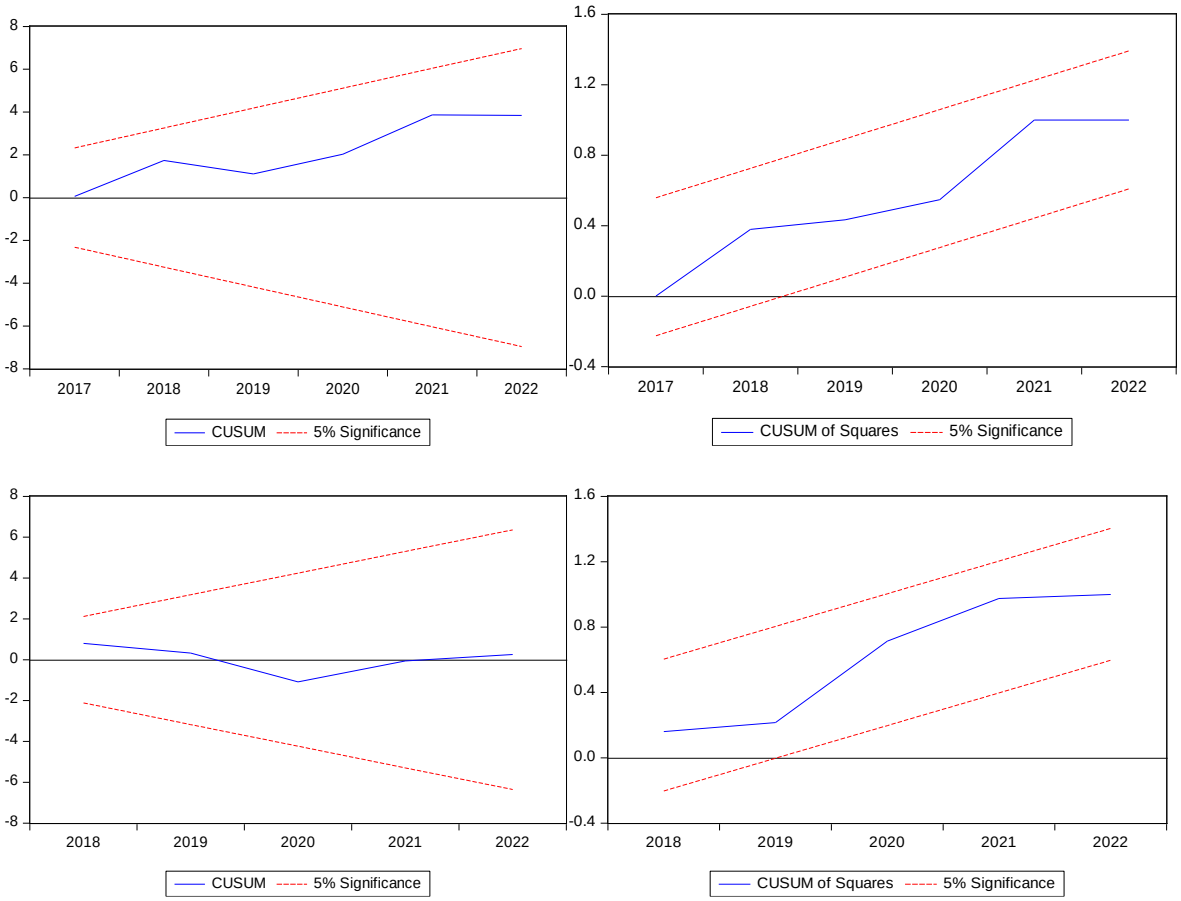
Note: Numbers in parentheses are probabilities, Jarque Bera Normality Test was utilised, Serial correlation is with Breusch-Godfrey serial correlation Lagrange Statistics, Heteroscedasticity test is with Breusch-Pagan-Godfrey test.
Source: Output of E-views 10 version.

Post-Diagnostic Tests

The diagnostic tests for the M-Model and I-Model reveal that both models have high explanatory power, with R-Square values of 0.986508 and 0.971275, respectively, and Adjusted R-Square values of 0.97094 and 0.940497, indicating a strong fit to the data. The Durbin-Watson statistics are close to the ideal value of 2, suggesting no significant

autocorrelation. Specifically, the M-Model has a Durbin-Watson statistic of 2.104611, while the I-Model has 2.386075. The Serial Correlation test (Breusch-Godfrey) and Heteroscedasticity test (Breusch-Pagan-Godfrey) show no significant issues, with p-values well above the 0.05 threshold for both models (e.g., Serial Correlation p-values are 0.1475 and 0.1740, Heteroscedasticity p-values are 0.8363 and 0.8195, respectively). These results indicate that the models are well-specified and have no evident problems of autocorrelation or heteroscedasticity.

Stability tests are crucial for ensuring model reliability and dependency. The CUSUM and CUSUM of Square tests, adapted from Brown, Durbin, and Evans (1975), confirmed the model's stability. Graphically represented tests showed no specification errors as the plotted lines remained within the stability region, indicating the model's reliability.



Conclusion

The study, employing the ARDL technique, delved into the intricate relationship between trade openness, institutional quality, and economic growth in Nigeria. Notably, the analysis revealed significant findings regarding both short-run and long-run impacts. While trade openness exhibited a positive coefficient in the short run, suggesting immediate economic benefits, the long-run results unveiled a negative coefficient, implying a dampening effect on Nigerian GDP growth. Moreover, examining institutional quality, specifically political rights and civil liberties, yielded intriguing insights. Political rights consistently negatively influenced economic growth, whereas civil liberties exhibited a positive impact in the short run but lacked statistical significance in the long run. These findings underscore the complex and nuanced nature of the relationship between institutional quality and economic development in Nigeria, urging policymakers to adopt holistic strategies that consider both short-term gains and long-term sustainability.

In light of these findings, several recommendations emerge. Policymakers must carefully evaluate the long-term implications of trade openness policies, ensuring they align with the country's economic development goals. Moreover, improving institutional quality, particularly in governance and the rule of law, should be prioritised to enhance investor confidence and foster sustainable growth. Future research should explore alternative measures of institutional quality and trade openness to corroborate these findings, while public awareness campaigns can help generate support for institutional reform agendas. Ultimately, by addressing the nuanced relationships uncovered in this study, policymakers can develop more effective strategies to promote inclusive and sustainable development in Nigeria.

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