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DOES GOVERNANCE QUALITY ENHANCE DEVELOPMENT? EVIDENCE FROM SELECTED COUNTRIES IN SUB-SAHARAN AFRICA

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ABSTRACT

The effectiveness of macroeconomic policy in driving sustainable development is closely tied to the quality of governance and institutional frameworks. Sub-Saharan Africa (SSA), despite its potential, continues to face governance challenges that hinder its development. Existing literature has primarily focused on governance's impact on economic growth, often neglecting broader development dimensions. This study fills that gap by examining the relationship between governance and economic development in 15 SSA countries from 2002 to 2023. Economic development was measured using the Human Development Index (HDI), incorporating data from Countryeconomy and Statista. Governance was proxied by six indicators from the World Governance Indicators (WGI): Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law, and Voice and Accountability. The study employed the CIPS second-generation unit root test and Westerlund cointegration test to address cross-sectional dependencies and determine long-run relationships. Short-run and long-run coefficients were estimated using the Pooled Mean Group (PMG) estimator within an Autoregressive Distributed Lag (ARDL) framework. Results revealed that all governance indicators positively and significantly influence economic development in the long run, while only control of corruption and government effectiveness have significant short-run impacts. The findings emphasised on the importance of implementing robust anti-corruption policies and ensuring transparent, effective governance. Additionally, strengthening the judiciary's independence and efficiency is vital for fostering an enabling environment for development. These insights provide valuable policy implications for SSA countries aiming to achieve sustainable economic development beyond mere growth.

Keywords: *Governance Indicators, Human Development Index, Institutions, Pooled Mean Group, Sub-Saharan Africa*
JEL Classification Code: *G38, O10*

1.0 Introduction

The effectiveness of any macroeconomic policy in driving sustainable development is closely associated with the quality of governance and institutional frameworks. The United Nations Development Programme (UNDP) defines governance as the authority to manage a country's affairs across executive, economic, and political domains (UNDP, 1997). Governance entails the structures, processes, and institutions through which citizens articulate their interests and exercise their rights and civil liberties (Awan et al., 2018). Empirical evidence suggests that effective governance characterized by capable institutions and transparent processes plays a pivotal role in driving sustainable development (Brautigam, 1991; Landell-Mills & Serageldin, 1991; Boeninger, 1992). Conversely, poor governance marked by corruption and inefficiency can significantly impede progress toward economic development (World Bank, 1997).

The relationship between governance and economic development has attracted scholarly interest within the field of development economics. Empirical studies revealed that countries with strong institutional frameworks tend to achieve higher levels of development than those with weaker institutions (Fagbemi et al., 2021; Altun, 2016). Sub-Saharan Africa (SSA) lags behind other regions in governance quality. The average governance indicators for SSA countries are significantly lower than the global benchmarks. Countries in North America (e.g., Canada, United States), Europe (e.g., Spain, Germany), and Asia (e.g., Japan, Hong Kong) exhibit strong institutional frameworks, with average governance estimates of 1.5 and above over the period 2002–2023. (World Governance Indicators (World Bank, 2024). In stark contrast, most SSA countries exhibit a negative governance estimate, with the exception of upper middle-income countries (UMICs) such as South Africa, Namibia, Botswana, Mauritius, and Seychelles that possess relatively stronger institutions. It is alarming that countries like Nigeria, Sudan, and Angola consistently record governance estimates below -1 (World Bank, 2024).

The Human Development Index (HDI) moves in a similar direction with governance. Advanced countries with strong institutions exhibit average HDI scores of 0.9 or higher, while SSA countries with weaker institutional frameworks struggle to maintain HDI between 0.35 and 0.6. Though the UMICs in SSA had an average HDI score between 0.65 and 0.77, it is still below the global standard. Scholars have identified poor governance as a key factor contributing to the region's developmental challenges. For instance, Fagbemi et al. (2021) argued that the institutional weaknesses prevalent in many SSA countries underpin their persistent socioeconomic challenges. Similarly, Mbaku (2020) posits that strengthening governance is essential for SSA countries to achieve the Sustainable Development Goals (SDGs) by 2030. The extant studies on governance-development nexus in SSA, have presented mixed findings. While some studies report a positive relationship (Fagbemi et al., 2021; Altun, 2016), others suggest no significant association (Almohammed & Eksi, 2021; Adegboyega & Arikewuyo, 2020) or even conflicting results (Afolabi, 2019). These divergent findings highlight the need for further investigation, particularly within the SSA context.

This study examined the relationship between governance and economic development in SSA, with a focus on human development. It distinguishes itself by employing second-generation unit root tests to assess the stationarity properties of the variables, an approach largely overlooked by previous research. Additionally, it utilised a dynamic panel Autoregressive Distributed Lag (ARDL) model, in contrast to the static models predominantly used in prior studies.

The remainder of this paper is organised as follows. Section 2 presents a comprehensive review of the empirical literature. Section 3 outlines the methodological framework and data sources. Section 4 provides the empirical analysis and discussion of the results. Finally, Section 5 concludes the study and offers policy recommendations.

2.0 Literature Review

2.1 Conceptual Review

Governance is a complex, multidimensional concept interpreted differently across disciplines. The World Bank (2024) defines it as the traditions and institutions by which authority is exercised, including the processes of government selection, resource management, and institutional respect. Similarly, Hyden, Court, and Mease (2004) highlight governance as the rules and behaviours shaping how power is exercised, with emphasis on transparency, accountability, and the rule of law. To assess governance, the World Bank (2024) developed the Worldwide Governance Indicators (WGI), encompassing six interrelated dimensions: (1)

Voice and Accountability, reflecting citizen participation and freedom of expression; (2) Political Stability and Absence of Violence, measuring threats to political order; (3) Government Effectiveness, evaluating public service quality and policy credibility; (4) Regulatory Quality, assessing the ability to formulate sound policies; (5) Rule of Law, capturing legal enforcement and property rights; and (6) Control of Corruption, gauging the misuse of public power for private gain. These indicators provide a comprehensive framework for understanding governance and its developmental impact.

Human development on the other hand focuses on expanding individuals' capabilities and opportunities to lead meaningful lives. The United Nations Development Programme (UNDP, 2020) defines it as enhancing people's choices and abilities to live healthy, educated, and creative lives. Amartya Sen (1999) emphasises human development as the expansion of substantive freedoms, including access to education, healthcare, and civic participation. Unlike income-based economic measures, the human development approach centers on empowerment, equity, and dignity, offering a more holistic view of progress. Together, the concepts of governance and human development provide a robust lens for analysing how institutional quality and public freedoms influence a nation's developmental outcomes.

2.2 Empirical Literature Review

Although an extensive body of literature has explored the link between governance and economic growth, relatively few studies have examined its relationship with economic development—especially within Sub-Saharan Africa (SSA). While these concepts are related, economic growth refers to increases in GDP, whereas economic development encompasses broader improvements in living standards, poverty reduction, and human well-being (Todaro & Smith, 2024).

Several studies reported a positive relationship between governance and economic development. Altun (2016), using a panel first-difference and fixed effects model on 157 countries (2002–2011), found political stability to enhance development both short- and long-term. Similarly, Fagbemi et al. (2021), analysing 25 SSA countries (2005–2019), showed that weak institutions contribute to poor socioeconomic outcomes. In Europe, Noja et al. (2019) examined EU countries (1995–2017) using regression analysis, structural equation modelling, and Gaussian graphical models, finding public administration positively influences GDP and poverty reduction. However, results across studies are not always consistent. For example, Afolabi (2019) applied the GMM method to West African data (2002–2016) and found mixed short-term effects—voice and accountability were beneficial, while regulatory quality and corruption control were harmful. All governance indicators, however, were positively significant in the long run. Adams and Mengistu (2008) also reported a positive link between governance and growth in 82 developing countries (1991–2002), though they noted governance negatively impacted income inequality. Some research found no significant relationship. Almohammed and Eksi (2021), using principal component analysis and GMM for 25 emerging economies (2002–2018), reported insignificant effects of governance on development. Likewise, Adegboyega and Arikewuyo (2020), using an ARDL model for Nigeria (1982–2019), observed both positive and negative but statistically insignificant effects across governance indicators.

By contrast, the relationship between governance and economic growth has been more extensively documented, with largely positive findings. Mahran (2023) employed spatial regression on 116 countries, while Nikzad (2021) used GLS estimation on over 200 countries (1996–2019); both found governance indicators significantly boost growth. Similarly, Lahouij (2017) identified positive effects from voice and accountability, rule of law, and political

stability in 110 countries (2002–2014). Fayissa and Nsiah (2013) also highlighted how governance impacts growth differently across income levels in Africa.

Yet, some studies reported mixed effects. Fawaz et al. (2021) found that while rule of law and corruption control support GDP per capita in developing countries (1996–2018), voice and accountability have a negative effect. Azam (2022), using panel ARDL/Pooled Mean Group estimations in 14 Latin American and Caribbean countries, found corruption hindered growth, whereas political stability and government effectiveness promoted it. Likewise, Vajrapatkul (2021) noted positive effects from corruption control and accountability in 10 ASEAN countries, but a negative impact from regulatory quality. Other studies reveal bidirectional or selective influences. Abdelbary (2018) found a causal link between governance and growth in Egypt (1996–2016). Tharanga (2018) showed that only corruption control was significant among governance indicators across 145 countries (2002–2014). Conversely, Al Naser and Hamdan (2021) found no significant relationship in Gulf Cooperation Council countries (1996–2019), a conclusion also supported by AlAdlalni (2019) in 22 Arab countries, Fraj et al. (2018) in 50 countries, and Emara and Chiu (2016) in MENA countries.

Despite these contributions, there remains a notable research gap in understanding governance's influence on economic development, particularly in SSA. Most studies focus on growth (GDP-based), which does not reflect development's multidimensional nature. Exceptions like Fagbemi et al. (2021) are rare. To address this, the present study adopted the Human Development Index (HDI) as a more holistic measure of development, capturing health, education, and living standards. Methodologically, prior studies often assume cross-sectional independence, which may be unsuitable for SSA due to regional interdependencies. This study therefore utilised the second-generation unit root tests and a dynamic panel ARDL model. While ARDL has been applied in other regions (e.g., Azam, 2022), its use in SSA remains limited. Thus, this research provides a more robust, context-sensitive understanding of how governance shapes economic development in SSA.

2.3 Theoretical Framework

This study is grounded in institutional economic theory, which emphasises the role of institutions, both formal rules and informal norms in shaping economic growth and development (North, 1991). Institutions influence incentives and behaviour, thereby affecting a country's development trajectory (Raudla, 2014). A core principle of this theory is the significance of secure property rights, which encourage investment, innovation, and trade by ensuring individuals and businesses can benefit from their efforts (Ostrom, 2010). Another vital concept is transaction costs; effective institutions lower these costs, enhancing market efficiency, while weak institutions increase them and hinder economic progress (Coase, 1937).

Governance is central to this framework, as governments shape institutions by defining property rights, enforcing contracts, and regulating markets (North, 1990). Political stability is equally critical; instability disrupts institutions and deters investment (Tharanga, 2014). Inclusive and accountable political systems foster stronger economic institutions by limiting rent-seeking and promoting fair competition (Acemoglu & Robinson, 2012). Research shows that political and economic institutions jointly influence growth, with democratic and inclusive systems enabling sustained development (Flachaire et al., 2014; Jellema & Roland, 2011; Acemoglu & Robinson, 2012). Ultimately, nations with strong institutions allocate resources better and experience more durable economic growth (Acemoglu, Johnson, & Robinson, 2001).

3.0 Methodology

3.1 Data

In an attempt to explore the relationship between governance and economic development in SSA. This study employed a quantitative approach using panel data on Human Development Index (HDI) and the various governance indicators from 2002 to 2023. The study covers 15 countries (Nigeria, Ghana, South Africa, Kenya, Senegal, Togo, Tanzania, Benin, Angola, Botswana, Niger, Seychelles, Namibia, Mauritius and Cabo Verde) making a total of 330 observations. The data on governance indicators were sourced from the World Governance Indicators (WGI) while that of HDI were sourced from Countryeconomy and Statista.

Human Development Index (HDI) is a statistical measure of a nation's overall progress in terms of its social and economic aspects. It encompasses dimensions related to the well-being of individuals, including their educational achievements and standard of living and it is measured on a scale of 0 to 1 where a value close to 1 indicates a more developed country, while a value farther from 1 suggests lower economic development (Todaro & Smith, 2011). Governance indicators on the other hand measures the quality of institutions of a country and they include rule of law, control of corruption, voice and accountability, political stability, regulatory quality and governance effectiveness. All of which are measured on a scale of -2.5 to +2.5. A value close to 2.5 represents good governance while a value farther from 2.5 represents poor governance (World Bank, 2024).

3.2 Model Specification

In a bid to explore the relationship between governance and economic development in SSA countries, this study made modifications to the model of Afolabi (2019) where per capita growth was a function of all the governance indicators. In order to achieve the study objective, the model was modified by replacing per-capita growth with Human Development Index to proxy economic development. This is because HDI is a multi-dimensional index i.e. it captures other areas of development like health, education and living standard (Todaro & Smith, 2024).

The functional and econometric form of the model are stated in Equation 1 and 2 respectively:

HDI = f (COC, GOE, POS, REQ, ROL, VOA) ---------- [1]

$$HDI_{it}=\beta_0+\beta_1 COC_{it} + \beta_2 GOE_{it} + \beta_3 POS_{it} + \beta_4 REQ_{it} + \beta_5 ROL_{it}+\beta_6 VOA_{it} + \mu_i + \varepsilon_{it} \text{-------- [2]}$$

Where HDI (Human Development Index) is the dependent variable proxied for Economic Development while COC (control of corruption), GOE (government effectiveness), POS (political stability), REQ (regulatory quality), ROL (rule of law) and VOA (voice and accountability) are the explanatory variables. In addition, i represent the cross-sectional units (the selected countries in SSA), t denotes the time periods, μ_i represents the country specific effect while ε_it is the error term.

3.3. Estimation Technique or Procedure

This study utilised the panel Autoregressive Distributed Lag (ARDL) model to estimate the relationship between the Human Development Index (HDI) and governance indicators. To ensure accurate modelling, unit root tests were first conducted to examine the stationarity of the variables. Given the presence of cross-sectional dependence across the panel units, the study employed the second-generation unit root test (CIPS) by Pesaran (2007), as first-generation tests would be unreliable under such conditions. The ARDL model was chosen because the variables exhibited a mixed order of integration (I(0) and I(1)), making it the most

appropriate technique (Pesaran et al., 2001; Pesaran & Smith, 1995). A key advantage of the panel ARDL model is its ability to estimate both short-run and long-run relationships within a single framework, offering robust and consistent estimates (Pesaran, Shin & Smith, 1999). To further verify a long-term relationship between HDI and governance indicators, the Westerlund (2007) cointegration test was used, as it better accounts for cross-sectional dependence than earlier methods such as Pedroni (1999) and Kao (1999). Finally, based on the Hausman (1979) test, the Pooled Mean Group (PMG) estimator was selected over other alternatives (Mean Group and Dynamic Fixed Effects), as it assumes homogeneity in the long-run but allows for heterogeneity in short-run dynamics across countries. The dynamic panel ARDL model for this study is specified in Equation 3.

$$\begin{aligned}\Delta HDI_{i,t} &= \alpha_{i1} + \lambda_1 HDI_{i,t-1} + \lambda_1 COC_{i,t-1} + \lambda_3 GOE_{i,t-1} + \lambda_4 POS_{i,t-1} + \lambda_5 REQ_{i,t-1} + \lambda_6 ROL_{i,t-1} \\ &+ \lambda_7 VOA_{i,t-1} + \lambda_8 X_{i,t-1} + \sum_{j=1}^{p} \beta_{i,j} \nabla HDI_{i,t-j} + \sum_{k=0}^{q} \theta_{i,k} \nabla COC_{i,t-k} + \sum_{k=0}^{r} \varphi_{i,k} \nabla GOE_{i,t-k} \\ &+ \sum_{k=0}^{s} \delta_{i,k} \nabla POS_{i,t-k} + \sum_{k=0}^{v} \pi_{i,k} \nabla REQ_{i,t-k} + \sum_{k=0}^{w} \psi_{i,k} \nabla ROL_{i,t-k} + \sum_{k=0}^{y} \rho_{i,k} \nabla VOA_{i,t-k} \\ &+ \sum_{k=0}^{z} \gamma_{i,k} \nabla X_{i,t-k} + \mu_i + \varepsilon_{i,t} \text{ -------[3]}\end{aligned}$$

Equation 4 and 5 are the error correction model and the long run-form respectively.

$$\begin{aligned}\Delta HDI_{i,t} &= \alpha_{i1} + \sum_{j=1}^{p} \beta_{i,j} \nabla HDI_{i,t-j} + \sum_{k=0}^{q} \theta_{i,k} \nabla COC_{i,t-k} + \sum_{k=0}^{r} \varphi_{i,k} \nabla GOE_{i,t-k} + \sum_{k=0}^{s} \delta_{i,k} \nabla POS_{i,t-k} \\ &+ \sum_{k=0}^{v} \pi_{i,k} \nabla REQ_{i,t-k} + \sum_{k=0}^{w} \psi_{i,k} \nabla ROL_{i,t-k} + \sum_{k=0}^{y} \rho_{i,k} \nabla VOA_{i,t-k} + \sum_{k=0}^{z} \gamma_{i,k} \nabla X_{i,t-k} \\ &+ \partial ECT + \mu_i + \varepsilon_{i,t} \text{ ----------[4]}\end{aligned}$$

$$\begin{aligned}\Delta HDI_{i,t} &= \alpha_{i1} + \lambda_1 HDI_{i,t-1} + \lambda_1 COC_{i,t-1} + \lambda_3 GOE_{i,t-1} + \lambda_4 POS_{i,t-1} + \lambda_5 REQ_{i,t-1} + \lambda_6 ROL_{i,t-1} \\ &+ \lambda_7 VOA_{i,t-1} + \lambda_8 X_{i,t-1} + \mu_i + \varepsilon_{i,t} \text{ ----------[5]}\end{aligned}$$

Where i= 1, 2… N is the number of cross-sections (countries); t=1… T is the time; j is the number of lags of the dependent variable (HDI); k is the number of lags of the explanatory variables; $\theta,\ \varphi, \delta, \pi, \Psi$ *and* ρ represent the short-run coefficients of all the governance indicators; β_{ij} reperesents the short-run coefficient of the dependent variable. λ_1 is the long-run coefficient of the dependent variable (HDI), λ_2-λ_7 represent the long-run coefficient of all the governance indicators. ϑ is the coefficient of the error correction term measuring the speed of adjustment from short-run disequilibrium to long-run equilibrium. μ_i represents the country specific effect while ε_{it} is the error term. Δ represents the difference operator.

4.0 Results and Discussions

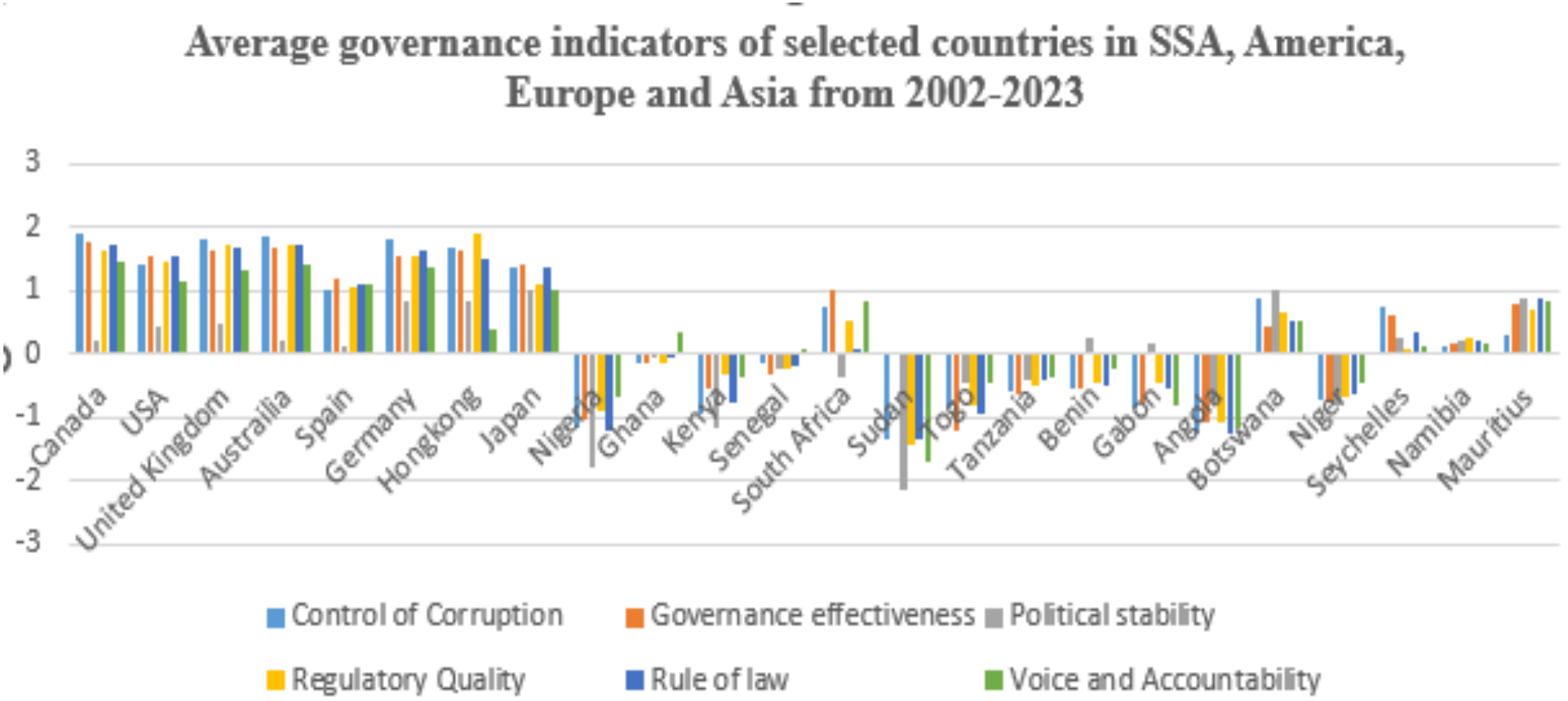

Figure 1: The Average Governance Indicators of Selected Countries in SSA, Asia, North America and Europe from 2002 -2023. All indicators are on the scale of -2.5 to +2.5.

Source: World Bank (2024)

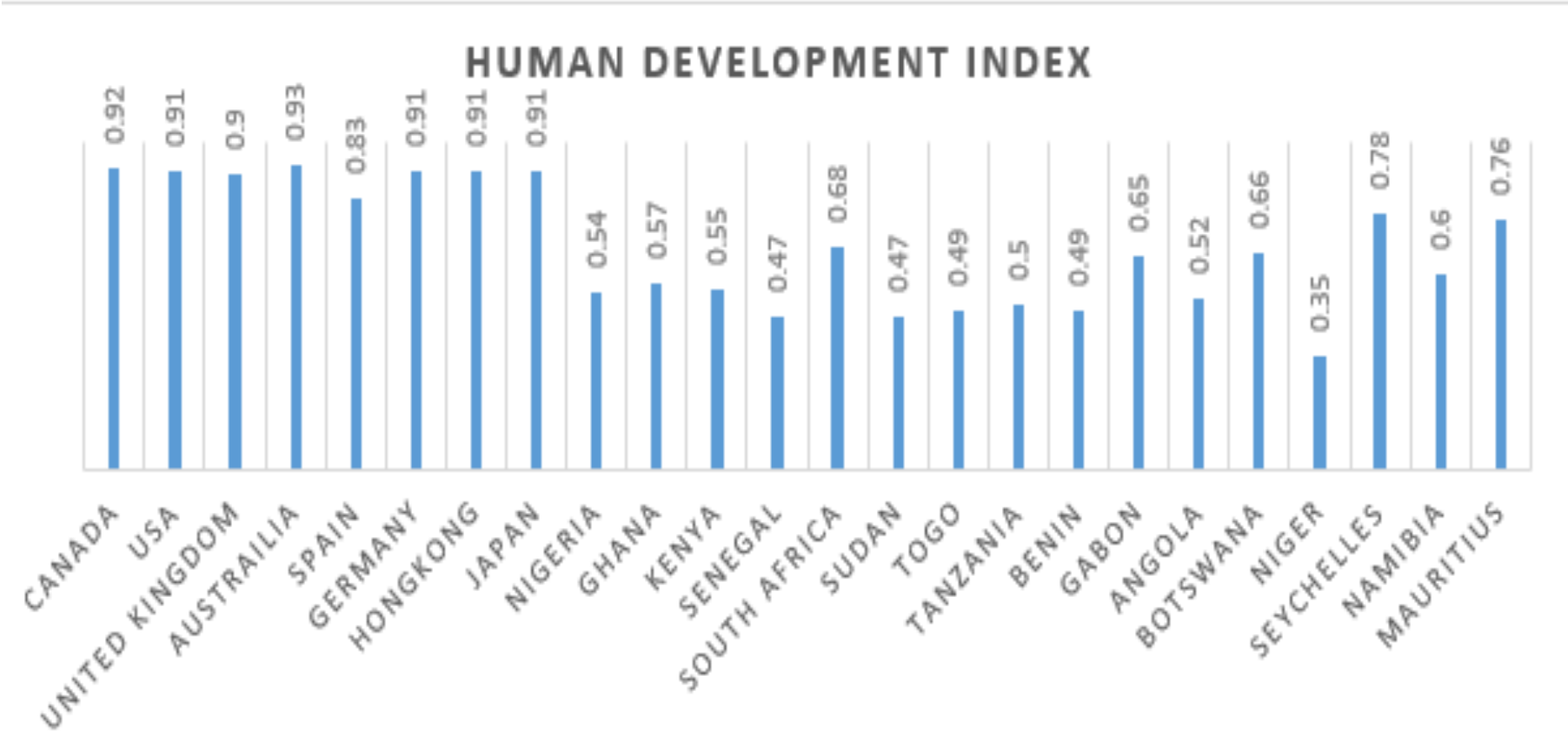

Figure 2: The Average HDI of Selected Countries in Asia, America, Europe and Africa from 2002 to 2023.

Source: World Bank (2024)

4.1 Descriptive Statistics

This section describes the statistical nature of the data used in the study and it includes the mean, median, minimum, maximum, standard deviation and normality (See Table 1).

Table 1 Descriptive Statistics

	Obs.	Mean	Median	Max.	Min.	Std.	Jarque B.
Human Development Index	330	0.57	0.55	0.81	0.27	0.121	3.791
Control of Corruption	330	-0.266	-0.244	1.633	-1.546	0.77	16.556***
Government Effectiveness	330	-0.258	-0.156	0.942	-1.534	0.587	17.769***
Political Stability	330	-0.089	-0.039	1.201	-2.211	0.860	17.583***
Regulatory Quality	330	-0.242	-0.273	1.197	-1.653	0.612	1.061
Rule of Law	330	-0.265	-0.214	1.024	-1.65	0.681	14.317***
Voice and Accountability	330	-0.092	0.024	0.974	-1.851	0.748	20.903***

***, **, & * denote statistical level of significance @ 1%, 5%, and 10% respectively
Source: Author's Compilation, 2024

From Table 1, the average Human Development Index (HDI) for SSA countries between 2002 and 2022 is 0.57, signifying a significantly lower level of development compared to that found in developed nations. Additionally, the mean values for COR, GOE, POS, REQ, ROL, and VOA are all negative (-0.266, -0.258, -0.089, -0.242, -0.265, and -0.092, respectively), indicating a poor quality of governance in SSA countries. The Jarque-Bera statistic revealed that COR, GOE, POS, ROL and VOA do not follow a normal distribution.

4.2 Correlation Matrix and Variance Inflation Factor

This section describes the nature and magnitude of the relationship among the variables used in the study. The VIF helps to check if there is multicollinearity in the model (a violation of the assumption of the ordinary least squares regression) (see Table 2).

Table 2 Correlation Matrix and VIF

	HDI	COC	GOE	POS	REQ	ROL	VOA
HDI	1						
COC	-0.0782	1					
GOV	-0.0579	0.2761	1				
POS	0.0011	0.0410	0.0915	1			
REQ	0.1176	0.2218	0.0416	0.1740	1		
ROL	0.1089	0.3510	0.2455	0.0753	0.2060	1	
VAO	0.0153	0.1547	0.1482	0.1196	-0.0736	0.1980	1
VIF	-	1.24	1.23	1.13	1.13	1.09	1.06
1/VIF	-	0.8058	0.8137	0.8833	0.8860	0.9138	0.9463
Mean VIF				1.15			

Source: Author's Compilation, 2024

From Table 2, the explanatory variables exhibit a mixture of moderate and weak correlation among each other which means there is no strong relationship among them. Also, the mean variance inflation factor of 1.15 is lower than the benchmark of 5. Therefore, we can conclude that the variables do not exhibit multicollinearity. Hence, the model to be estimated on the basis of these variables would be robust for policy prescription.

4.3 Pre-Estimation Test

To guide against having a spurious result. It is appropriate to test for the econometrics properties of the variables in the model. This includes testing for the cross-section dependence, unit-roots and cointegration.

Table 3 Cross-Section Dependence Test

Variables Level	Cross-Section Dependence			Variables First Diff.	Cross-Section Dependence		
	CD-test	Corr	Abs (Corr)		CD-test	Corr	Abs (Corr)
HDI	44.15***	0.963	0.963	ΔHDI	11.27***	0.252	0.276
COC	4.14***	0.090	0.345	ΔCOC	1.87*	0.049	0.209
GOE	2.27**	0.052	0.359	ΔGOE	3.61***	0.081	0.181
POS	1.89*	0.043	0.256	ΔPOS	2.88***	0.065	0.190
REQ	-0.15	-0.003	0.406	ΔREQ	1.84*	0.047	0.231
ROL	2.44**	0.058	0.387	ΔROL	1.73*	0.040	0.221
VOA	1.93*	0.045	0.385	ΔVOA	2.40**	0.054	0.242

***, **, & * denote statistical level of significance @ 1%, 5%, and 10% respectively
Source: Author's Computation, 2024

The cross-section dependence test indicates that all the variables have cross-sectional dependence in their series except REQ. This implies that, there are shared factors, interactions, or spillover effects influencing governance across different entities. Since the first-generation unit root test would not provide a robust result in the presence of cross-section dependence, the second-generation unit root (CIPS) test was performed for the variables at their levels and first difference data (see Table 4).

Table 4 Second Generation (CIPS) Unit Root Test (Lag 1)

Variable Level	Second Generation CIPS (Z_t bar)		Variable First Difference	Second Generation CIPS (Z_t bar)	
	Without Trend	With Trend		Without Trend	With Trend
HDI	-1.499	-0.569	ΔHDI	112.645***	-5.116***
COC	2.09**	1.275	ΔCOC	122.574 ***	-4.229***
GOE	1.370	1.276	ΔGOE	131.051***	-2.933***
POS	-2.791***	-0.204	ΔPOS	170.670***	-4.707***
REQ	-0.382	0.275	ΔREQ	170.670***	-1.180
ROL	-2.484***	-1.299	ΔROL	85.206***	-3.035***
VOA	-1.059	2.134	ΔVOA	125.237***	-3.839***

***, **, & * denote statistical level of significance @ 1%, 5%, and 10% respectively
Source: Author's Computation, 2024

From Table 4, COC (5%), POS (1%), and ROL (1%) are stationary at their levels data without trend making them I (0) variables. On the other hand, HDI, GOE, REQ, ROL, VOA are not stationary at levels. However, their first difference data are stationary at 1% with both trend and without trend which makes them I (1) variables. This mixture of I (1) and I (0) variables necessitated the adoption of the Panel ARDL technique as propounded by (Pesaran et al., 2001).

Table 5 Westerlund Cointegration Test

Statistics	Value	z-value	p-value	P-value robust
Gt	-20.320	-4.029	0.000	0.000
Ga	-29.214	-3.022	0.000	0.000
Pt	-6.013	-1.227	0.144	0.022
Pa	-14.834	-1.443	0.098	0.014

Source: Author's Computation, 2024

The Westerlund (2007) cointegration test was employed to ascertain the long-run relationship between governance and economic development in the selected SSA countries (see Table 5) The Gt and Ga statistics show that cointegration exist when the individual countries are considered but there is no cointegration at the panel level (with p-value of Pt and Pa both greater than 5%). This result may be biased considering the fact that there is cross-section dependence among the countries. Hence, the P-value robust option provided us with a more robust result. The p-value robust option shows the presence of cointegration for both individual and panel level (as indicated by a p-value less than 5%).

4.4 Panel ARDL Model Estimation

Table 6 Pool Mean Group Model

Variables	Pooled Mean Group Coefficients	T-Statistics
	Long Run Estimates	
COC	0.3263	7.18***
GOE	0.0971	2.41**
POS	0.4684	7.08***
REQ	0.0663	2.08**
ROL	0.3596	7.44***
VAO	0.5453	14.64***
	Short Run Estimates	
ECT	-0.475	3.86***
ΔCOC	0.3337	2.72**
ΔGOE	0.4417	2.82**
ΔPOS	0.0109	0.91
ΔREQ	0.0120	0.97
ΔROL	-0.0027	-0.32
ΔVOA	-.00122	-1.21
Constant	0.0023	0.27
Hausman MG, PMG (Chi-square p-value=0.5539); DFE, PMG (Chi-square p-value= 1.000)		

***, **, & * denote significance at 1%, 5%, & 10% respectively.
Source: Author's Compilation, 2024

Table 6 shows both the short-run and long-run estimate of the panel ARDL model using the pooled mean group (PMG) estimator. The p-value of the Chi-Square of the Hausman test (0.5539 in the case of MG and PMG and 1.000 in the case of DFE and PMG) suggested the acceptance of the null hypothesis that the PMG estimator is a more efficient and consistent estimator than the MG and DFE. Based on this, the short run and long run model was estimated using the PMG estimator.

From the long-run PMG estimates, the estimate of COC, GOE, POS, REG, ROL and VOA all have a significant positive impact on HDI in the long-run and a unit increase in the estimates will on the average increase the HDI by 0.3263, 0.0971, 0.4684, 0.0663, 0.3596 and 0.5453 unit respectively. Moreover, the impacts of COC, POS, ROL and VOA are all significant at 1% while GOE, REQ are statistically significant at 5%

The short-run estimates of the PMG model revealed that only COC and GOE have a significant positive impact on HDI at 5% while all other governance indicators show an insignificant impact at 5% level of significance. For instance, an increase in COC and GOE will on the average increase HDI by 0.3337 and 0.4417 units respectively. Their coefficients are statistically significant at 5% level of significance. The coefficient of the error correction term of -0.475 shows that about 47.5% of the short-run deviations in HDI will be corrected in the long-run. The coefficient is also statistically significant at 1% level and it is correctly signed with a negative value conforming to economic theory.

4.5 Panel Granger Causality

The pairwise granger causality test was used to test for the causality between governance indicators and economic development. It was also used to know if causation exists and to also identify the direction of the causality. The result is presented in Table 7.

Table 7 Pairwise Granger Causality Test

Null Hypothesis:	F-Statistic	Prob.
COC does Not Granger Cause HDI	1.2085	0.3072
HDI does not Granger Cause COC	1.5835	0.1939
GOE does not Granger Cause HDI	0.4696	0.7038
HDI does not Granger Cause GOE	0.5204	0.6687
POS does not Granger Cause HDI	0.9937	0.3964
HDI does not Granger Cause POS	0.6545	0.5808
REQ does not Granger Cause HDI	3.8008	0.0108
HDI does not Granger Cause REQ	1.0426	0.3743
ROL does not Granger Cause HDI	3.1589	0.0253
HDI does not Granger Cause ROL	0.9656	0.4096
VOA does not Granger Cause HDI	1.4889	0.2181
HDI does not Granger Cause VOA	0.9212	0.4311

Source: Author's Computation, 2024

Table 7 shows that no causality exists between HDI and four governance indicators i.e. COC, GOE, POS, and VOA. The result however indicates that only REQ and ROL granger cause HDI with a p-value of 0.01 and 0.02 respectively.

4.6 Robustness Check

To enhance a robust estimate, it is always important to evaluate and harmonize the result from different estimation techniques. This study employed the Panel Fully Modified Ordinary Least Squares (FMOLS) and Dynamic Ordinary Least Squares (DOLS) (see Table 9) to confirm the robustness of the long-run coefficients of the Panel ARDL model.

Table 8: Panel FMOLS and DOLS

	FMOLS	DOLS

Variables	Coefficients	T-statistics	Coefficients	T-statistics
COC	0.0115	1.8400	0.0034	0.24
GOE	0.0420	5.3427***	0.0556	-3.42***
POS	0.0484	11.0881***	0.0199	-2.07**
REQ	0.0063	1.1039	0.0124	1.80
ROL	0.0298	4.3420***	0.0476	2.92***
VAO	0.0571	8.1069***	0.0674	4.19 ***

* Represents significance at 1% and ** represents significance at 5%

Source: Author's Compilation, 2024

From Table 8, all the governance indicators showed a positive long-run relationship with HDI. However, while four of the indicators- GOE, POS, REQ and VOA are statistically significant on HDI, COC and REQ are not statistically significant. The positive relationship between HDI and all the governance indicators confirms the result of the PMG/ARDL estimates. However, COR and REQ are statistically significant based on the PMG/ARDL estimator negating the findings of the FMOLS and DOLS.

4.7 Discussion of Findings and Policy Implications

This study examined the relationship between governance and economic development across 15 selected Sub-Saharan African (SSA) countries. Employing the Westerlund cointegration test, the analysis revealed a long-term association between various governance indicators and the Human Development Index (HDI), which serves as a proxy for economic development. The Hausman test supported the use of the Panel ARDL model estimated via the Pooled Mean Group (PMG) estimator, which was found to be more efficient and consistent than both the Mean Group (MG) and Dynamic Fixed Effects (DFE) estimators.

Results from the PMG estimation indicated that, in the long run, all governance indicators—Control of Corruption (COC), Government Effectiveness (GOE), Political Stability (POS), Regulatory Quality (REQ), Rule of Law (ROL), and Voice and Accountability (VOA)—have a statistically significant and positive impact on HDI at the 5% level. In contrast, findings from Fully Modified OLS (FMOLS) and Dynamic OLS (DOLS) models suggest that while GOE, POS, ROL, and VOA remain significantly positive, the effects of COC and REQ, though positive, are not statistically significant at the same level. These outcomes are consistent with previous research, including Fagbemi et al. (2021) on SSA countries and Afolabi (2019) on West Africa. Notably, the significant role of political stability aligns with the conclusions of Altun (2016) and Noja et al. (2019).

The findings offer several important policy implications for SSA governments. Firstly, the significant impact of government effectiveness highlights the need to enhance public service delivery, reduce bureaucratic inefficiencies, and improve resource management. Secondly, the effect of political stability underscores the importance of reducing conflict, mitigating the risk of violence, and fostering a secure political climate. Thirdly, the positive influence of the rule of law points to the necessity of investing in the judicial system, law enforcement, and the consistent application of legal frameworks to attract investment. Furthermore, the contribution of voice and accountability suggests that promoting civic participation, safeguarding freedoms, and ensuring transparent decision-making are vital for long-term development.

Although FMOLS and DOLS did not find significant impacts for COC and REQ, these should not be disregarded. Governments should continue to strengthen anti-corruption measures,

promote transparency, and develop a fair and efficient regulatory environment conducive to private sector growth.

In the short term, according to the PMG model, only control of corruption and government effectiveness show statistically significant effects on HDI. This implies that immediate policy efforts should prioritise anti-corruption initiatives and the enhancement of governmental performance, which can yield tangible economic benefits in the near term. Conversely, other indicators—such as political stability, regulatory quality, rule of law, and voice and accountability—do not exhibit short-term significance, possibly due to the time required for institutional changes to manifest in economic outcomes. Despite this, their long-term importance justifies continued investment and policy focus.

The error correction coefficient of -0.475 implies that 47.5% of short-run deviations from the HDI equilibrium are corrected within a single period, indicating a relatively rapid adjustment process. This highlights the potential for governance-focused policies to drive sustainable improvements in economic development if maintained consistently over time.

Lastly, the Granger causality tests reveal a unidirectional causal relationship from regulatory quality and rule of law to HDI, with no causal links identified for the other governance indicators. This suggests that among all governance dimensions, regulatory quality and rule of law serve as the primary drivers of economic development in SSA countries.

5.1 Conclusion and Recommendation

This study examined the relationship between governance and economic development in 15 countries within the SSA region. Previous literatures have used different variables to capture development. However, those variables are not comprehensive enough to capture economic development. This study used the human development index (HDI) as a proxy to capture the economic development of the countries within its scope. The stylized facts showed that countries with strong institutions have witnessed a high level of economic development while the ones with weak institutions especially the countries within the SSA region have a low human development index. The ARDL model was estimated using the pooled mean group estimator as suggested by the Hausman test. The findings from PMG model indicated that all the governance indicators are positive and statistically significant on economic development in the long-run. The FMOLS and DOLS also revealed similar result in the long-run. However, control of corruption and voice and accountability were not statistically significant at 5%. In addition, only control of corruption and governance effectiveness were statistically significant on HDI in the short-run and a unidirectional causality only runs from regulatory quality and rule of law to HDI. Based on the findings, the study recommends that the governments of SSA should implement and enforce robust anti-corruption laws and ensure that government activities and decisions are transparent and accessible to the public. In addition, there should be investment in the judiciary to ensure its independence, efficiency, and effectiveness.

REFERENCES

Abdelbary, I. (2018). Governance matters and economic growth: Beyond the Egyptian revolution. Theoretical Economics Letters, 8(4), 741–754. https://doi.org/10.4236/tel.2018.84051Acemoglu, D., & Robinson, J. A. (2012). Why nations fail: The origins of power, prosperity and poverty. Crown Publishers.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). Colonial origins of comparative development: An empirical investigation. The American Economic Review, 91(5), 1369–1401. http://www.jstor.org.ezproxy.library.uq.edu.au/stable/pdf

Adams, S., & Mengistu, B. (2008). Privatization, governance and economic development in developing countries. Journal of Developing Societies, 24(4), 415–438.

Adegboyega, R. R., & Arikewuyo, K. A. (2020). Good governance and economic development in Nigeria. Journal of Business, 9(1), 7–22.

Afolabi, J. O. (2019). The impact of governance on economic development in West Africa: A system GMM dynamic panel approach. Acta Universitatis Danubius. Œconomica, 15(3), 217–231.

AlAdlani, A. H. (2019). Governance and economic growth in the Arab world: Evidence from panel data analysis (Dissertation No. 3448). Western Michigan University. https://scholarworks.wmich.edu/dissertations/3448

Almohammed, H., & Ekşi, İ. (2021). Is governance effective in economic growth? Evidence from MSCI countries. Hitit Journal of Social Sciences, 14(1), 40–55. https://doi.org/10.17218/hititsbd.926999

Al-Naser, M., & Hamdan, A. (2021). The impact of public governance on economic growth: Evidence from Gulf Cooperation Council countries. Economics and Sociology, 14(2), 85–110. https://doi.org/10.14254/2071-789X.2021/14-2/6

Altun, R. K. (2016). The effect of political stability and governance on economic development. SSRN. https://ssrn.com/abstract=2948652 or https://doi.org/10.2139/ssrn.2948652

Awan, R. U., Akhtar, T., Rahim, S., Sher, F., & Cheema, A. R. (2018). Governance, corruption, and economic growth: A panel data analysis of selected SAARC countries. Pakistan Economic and Social Review, 56(1), 1–20.

Azam, M. (2022). Governance and economic growth: Evidence from 14 Latin America and Caribbean countries. Journal of the Knowledge Economy, 13(2), 1470–1495.

Boeninger, E. (1992). Governance and development: Issues and constraints. Proceedings of the World Bank Annual Conference on Development Economics, Washington, D.C.: The World Bank.

Brautigam, D. (1991). Governance and economy: A review. World Bank Policy Research Working Paper No. 815. Washington, D.C.: The World Bank.

Coase, R. H. (1937). The nature of the firm. Economica, 4(16), 386–405. https://doi.org/10.1111/j.1468-0335.1937.tb00002.x

Emara, N., & Chiu, I. (2016). The impact of governance environment on economic growth: The case of Middle Eastern and North African countries. Journal of Economics Library, 3(1), 24–37.

Fagbemi, F., Nzeribe, G., Osinubi, T. T., & Asongu, S. (2021). Interconnections between governance and socio-economic conditions: Understanding the challenges in Sub-Saharan Africa. Regional Sustainability, 2(4), 337–348.

Fawaz, F., Mnif, A., & Popiashvili, A. (2021). Impact of governance on economic growth in developing countries: A case of HIDC vs. LIDC. Journal of Social and Economic Development, 23(1), 44–58.

Fayissa, B., & Nsiah, C. (2013). The impact of governance on economic growth in Africa. Journal of Developing Areas, 47(1), 91–108.

Flachaire, E. C., Garcia-Penalosa, C., & Konte, M. (2014). Political versus economic institutions in the growth process. Journal of Comparative Economics, 42(1), 221–229.

Fraj, S. H., Hamdaoui, M., & Maktouf, S. (2018). Governance and economic growth: The role of the exchange rate regime. International Economics, 156(3), 326–364.

Hadri, K. (2000). Testing for stationarity in heterogeneous panel data. The Econometrics Journal, 3, 148–161. https://doi.org/10.1111/1368-423X.00043

Hausman, J. A. (1978). Specification tests in econometrics. Econometrica, 46(6), 1251–1271.

Hyden, G., Court, J., & Mease, K. (2004). Making sense of governance: Empirical evidence from sixteen developing countries. Lynne Rienner Publishers.

Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. Journal of Econometrics, 115(1), 53–74. https://doi.org/10.1016/S0304-4076(03)00092-7

Jellema, J., & Roland, G. (2011). Institutional clusters and economic performance. Journal of Economic Behaviour & Organisation, 79, 108–132.

Kao, C. (1999). Spurious regression and residual-based tests for cointegration in panel data. Journal of Econometrics, 90(1), 1–44.

Lahouij, H. (2017). Governance and economic growth in developing economies: A comparative study (Master's thesis, Eastern Illinois University). https://thekeep.eiu.edu/theses/2724

Landell-Mills, P., & Serageldin, I. (1991). Governance and the development process. World Bank Finance and Development, 28(3), 14–17.

Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: Asymptotic and finite-sample properties. Journal of Econometrics, 108(1), 1–24. https://doi.org/10.1016/S0304-4076(01)00098-7

Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. Oxford Bulletin of Economics and Statistics, 61(S1), 631–652.

Mahran, H. A. (2023). The impact of governance on economic growth: Spatial econometric approach. Review of Economics and Political Science, 8(1), 37–53.

Mbaku, J. M. (2020). Good and inclusive governance is imperative for Africa's future. The Brookings Institution. https://www.brookings.edu/articles/good-and-inclusive-governance-is-imperative-for-africas-future/

Nikzad, R. (2021). Governance, institutions, and economic development. International Journal of Innovation and Economic Development, 7(4), 7–22.

Noja, G. G., Cristea, M., Sirghi, N., Hategan, C., & D'Anselmi, P. (2019). Promoting good public governance and environmental support for sustainable economic development. International Journal of Environmental Research and Public Health, 16(24), 1–21.

North, D. C. (1990). Institutions, institutional change and economic performance. Cambridge University Press.

North, D. C. (1991). Institutions. Journal of Economic Perspectives, 5(1), 97–112.

Ostrom, E., & Hess, C. (2010). Private and common property rights. In B. Bouckaert (Ed.), Property law and economics (Ch. 4). Edward Elgar Publishing.

Pedroni, P. (1999). Critical values for cointegration tests in heterogeneous panels with multiple regressors. Oxford Bulletin of Economics and Statistics, 61(S1), 653–670. https://doi.org/10.1111/1468-0084.61.s1.14

Pesaran, M. H. (2007). A simple panel unit root test in the presence of cross-section dependence. Journal of Applied Econometrics, 22, 265–312.

Pesaran, M. H., & Shin, Y. (1995). Autoregressive distributed lag modelling approach to cointegration analysis. DAE Working Paper Series No. 9514, University of Cambridge.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. Journal of the American Statistical Association, 94(446), 621–634. https://doi.org/10.1080/01621459.1999.10474156

Pesaran, M. H., Shin, Y., & Smith, R. P. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289–326.

Raudla, R. (2014). Institutional economics. In J. Backhaus (Ed.), Encyclopedia of law and economics (pp. 1–8). Springer. https://doi.org/10.1007/978-1-4614-7883-6_56-1

Sen, A. (1999). Development as freedom. Oxford University Press.

Tharanga, S. (2018). Impact of governance on economic growth. MPRA Paper 89834, University Library of Munich, Germany.

Tharanga, S. (2019). The relationship between institutions and economic development. MPRA Paper 97755. https://mpra.ub.uni-muenchen.de/97755/

Todaro, M. P., & Smith, S. C. (2024). Economic development (13th ed.). Pearson Education.

United Nations Development Programme (UNDP). (1997). Governance for sustainable human development: A UNDP policy document. http://mirror.undp.org/magnet/policy/

United Nations Development Programme (UNDP). (2020). Human development report 2020: The next frontier—Human development and the Anthropocene. https://hdr.undp.org

Vajrapatkul, A. (2021). The linkage between governance and growth. In Proceedings of the 3rd International Conference on Future of Social Science, Berlin, Germany.

Westerlund, J. (2007). Testing for error correction in panel data. Oxford Bulletin of Economics and Statistics, 69(6), 709–748.

World Bank. (1997). The state and the changing world. World Development Report. Oxford University Press.

World Bank. (2024). Worldwide governance indicators (WGI). https://info.worldbank.org/governance/wgi/