

Institutional Quality and Economic Growth in Sub-Saharan Africa

Blessing Mngunengen Vehe¹, Innocent Okwanya², & Patricia Abah³

^{1,2, & 3} Department of Economics, Federal University of Lafia. Email:

Abstract

This study examined the effect of institutional quality on economic growth in Sub-Saharan African countries using secondary data covering the period of 2002-2023. The study applied the panel Auto Regressive Distributed Lag model of mean group. Institutional quality in Sub-Saharan African countries over the years have been found to be weak and ineffective towards economic growth. It is believed that quality institutions play a critical role in ensuring the regulation and implementation of social, political and economic activities around the globe, as well as effective monitoring and evaluation. Sound institutions foster global social cohesion and macroeconomic stability which then result to increase in productivity, investment and economic growth. The study revealed that rule of law, voice and accountability have significant effect on growth while government effectiveness, control of corruption, political stability, and regulatory quality had insignificant effect on growth. The result further revealed that voice and accountability had significant effect on growth in both long and short run. Consequently, the study revealed that institutional quality has insignificant effect on growth in SSA countries implying that the regions' institutions are weak. The study recommends governments of SSA countries should prioritize improvements in institutional quality through stronger rule of law, effective governance, and corruption control, since they exhibited negative and insignificant effect on growth. There should be stringent laws against any political office holder who acquire assets through fraudulent means. Governments of SSA countries should stabilize their political system so as to attract both local and foreign investors to enhance economic growth.

Key words: Institutional Quality, Economic Growth, Panel ARDL

1. Introduction

Institutional quality plays a crucial role in contributing to economic growth of a nation. This is because sound and effective institutions create an environment that fosters economic activities, while weak or dysfunctional institutions can hinder economic progress. Institutional quality is undeniably of paramount significance as it plays a fundamental role in contributing to the overall economic growth and development of a nation, thereby establishing a direct correlation between the efficacy of institutions and the prosperity of the economic landscape. This observation stems from the understanding that robust and well-functioning institutions are instrumental in creating an environment that not only fosters but also actively promotes a wide array of economic activities, whereas institutions that are characterized by weaknesses or dysfunctionality can significantly impede and obstruct the pathway to economic advancement and progress.

It is essential to acknowledge that there exist six major indicators which are utilized to assess and measure the quality of institutions on a global scale; these pivotal indicators encompass government effectiveness, adherence to the rule of law, control of corruption, regulatory quality, political stability, as well as voice and accountability (World Development Indicators, 2023). There is an undeniable consensus within the academic community that institutional quality serves as a foundational bedrock that not only facilitates but also actively

promotes the economic growth and development of nations across the globe. The significance of this concept is magnified when one considers its implications for both developed and developing nations alike, as the presence of quality institutions is crucial for enabling the governmental frameworks of nations to effectively protect individual property rights, resolve disputes that may arise between aggrieved parties, enforce and monitor contracts that are being awarded for infrastructural development and economic growth.

The importance of institutional quality towards economic growth cannot be over emphasized. Quality institutions is very critical in ensuring the regulation and implementation of social, political and economic activities around the globe, as well as effective monitoring and evaluation. Sound institutions foster global social cohesion and macroeconomic stability which then result to increase in productivity, investment and economic growth (Ritzen & Brooks, 2024). There are other strong evidences that suggest that countries with sound and effective institutions motivates a strong legal framework for resilient fund mobilization and allocation thereby resulting to a less vulnerable and risky business environment (Abubakar, 2023).

Sub-Saharan African countries and Latin American countries are faced with basic impediments and setback in terms of economic growth due to political instability, uncertainties and manipulation, lack of trust in the judiciary system, bribery, tax evasion, ill-defined property rights, high level of insecurity, worst of all corruption. Africa as a continent and Latin Americans are experiencing inefficient institutions such as non-economic growth enhancing policies that are ill conceived and arranged by political leaders thereby making their environment unattractive for both local and foreign investors (Luz, 2019; Fussu, Bettes & Hueffler, 2024.). For example, economies in Asia have achieved development economically due to their institutional quality, but most Sub-Saharan African countries are plagued with high level of corruption, unemployment and poverty (Abubakar, 2023). For instance, the Democratic Republic of Congo and Nigeria, despite being endowed with abundance of mineral and natural resources; these countries struggle to attract foreign investors due to weak institutions such as political instability and bad governance (Abubakar, 2023). However, this empirical tale have shown that institutional quality can influence both foreign and local investment (Nair, Arvin, Pradhan & Bahmani, 2021).

Consequently, most African nations have diverted their attention more on advancing institutional quality as that of advanced nations to enhance economic growth (Rodrick, 2022). Eventually Andrews (2023) buttressed that nations with very weak institutions find it very difficult to evolve assiduously enough to enjoy economic growth and also compete with developed economies. This is because, strong institutions protect property rights, promotes investment and capital formation, it reduces corruption and misallocation of public funds. Interestingly, Finland and Sweden remarkable economic transformation is linked to its strong governance system and robust democratic institutions which facilitated innovation, thereby making these nations among the most competitive economies in the world (Andrews, 2023). This means that institutional quality is key to economic growth of every nation. It is seen as part of a nation's productiveness and capability frontier. Over the years, Sub-Saharan Africa has witnessed deteriorating quality of institutions. It is glaring that the indices for political stability, regulatory quality, rule of law, control of corruption, government effectiveness, voice and accountability in most of the countries within the region have been trending negatively in the 21st century (WDI, 2023). It is imperative to note that most African countries are bedeviled by the aforementioned institutional challenges. However, nations like Nigeria, Rwanda, Ghana,

South Africa, and Burkina-Faso over the years have established the Corrupt Practices Investigation Bureau, the Code of Conduct Bureau, and Public Complaint Commission to strengthen the institutions in their various nations but this effort has not yielded significant result and some of these countries are still faced with the challenge of weak institutions (Abubakar, 2023). Furthermore, Andrews (2023) decried that institutions in most Sub-Saharan Africa keeps declining and it has become worrisome; these countries rate of economic growth has been slow compared to developed nations with sound institutions. Therefore, this study seeks to examine how institutional quality can influence economic growth in Sub-Saharan African countries covering the period of 2002-2023.

2. Literature Review

2.1 Conceptual Clarification

Institutional quality

Institutional quality refers to the overall effectiveness, integrity, and performance of a country's institutions, such as government, legal systems, regulatory bodies, and public services. It encompasses the degree to which these institutions support economic growth, political stability, and the rule of law. High institutional quality implies strong governance, low corruption, and the protection of individual rights, fostering an environment conducive to economic growth and social well-being (Andrews, 2023). Similarly, Bruins (2023) view institutional quality as the ability of a country to maintain law and order, ability of a nation to have high quality government regulation and services, individual's rights and her ability to reinforce laid down laws which in turn will result to economic growth. Institutional quality also entails individual rights, rule of law, effective government regulation and services. It is believed that when institutions are strong and effective, it brings about economic growth and development. For instance, a strong, stable political institution reduces uncertainties and promote economic activities, and political turmoil can deter investment and economic growth; nations with low levels of corruption tend to perform better economically than countries with high record of corruption. Furthermore, corruption erodes trust in institutions, discourages investment amongst local and foreign investors and can lead to diversion of public resources from productive uses to personal and unproductive uses. The extent to which a nation's institutions foster international transactions, predictability, ability to provide effective and sound security for her citizens matters a lot. Furthermore, institutional quality serves an important function by contributing positively to an economy, it helps in reducing uncertainty inherent in economic interactions by making information readily available and the behavior of other key players more predictable. It has been pointed out by Abubakar (2023), Andrews (2023), and Luz (2019) that for nations to experience sustainable growth, their institutions must be very effective. For instance, the works of Acemoglu and Robinson (2008), Arvin, Pradhan and Nair (2021) affirm that institutional quality make the difference between developed and developing nations and whether a nation is on a steady growth trajectory. Furthermore, Botswana and Rwanda are reference point where despite limited resources, these countries experienced a dramatic positive change in political stability, governance and adherence to the rule of law which later transcended to their economic growth rate relative to many other African countries where their institutional framework is weak and compromised. After Rwanda experienced genocide, their government laid emphasis on reforming their institutions which later made their economy more robust than ever (Acemoglu, 2010). This

simply implies that institutional quality is needed for the enhancement of economic growth in both developed and developing nations.

Economic Growth

Economic growth is viewed as the sustained increase in the real national income of an economy over successive years for a protracted duration (Asteriou & Spanos, 2019). The totality of outputs produced within an economy over a specified timeframe—typically one fiscal year—is denoted as economic growth. Economic growth also refers to an increase in the nproduction of goods and services in an economy over a specific period of time. It is often measured by the percentage change in Gross Domestic Product (GDP). It serves as an indicator of developmental achievement and is intrinsically linked to the enhancement of individuals' living standards (Sevinj, 2023). Economic growth is realized through various determinants, including the accumulation of both human and physical capital, enhancements in productivity, and specialization facilitated by trade.

According to Todaro and Smith (2011), economic growth constitutes a gradual evolution that enhances the economy's capacity for production over an extended timeframe, thereby yielding augmented levels of national revenue. Economic growth is characterized by rise in the total value of goods and services produced within a country, growing incomes of individuals and businesses within a country, increase in employment opportunities, and improved standard of living. This phenomenon is characterized by swift augmentations in per capita production and overall factor productivity, with a particular emphasis on labor productivity. According to Adjudua (2018), the principal attributes of economic growth encompass productivity rates, structural transformation, growth in per capita income or output, as well as the international mobility of labor, capital, and commodities. Traditionally, economic growth has also been quantified through the lens of Gross Domestic Product (GDP), in addition to the Human Development Index (HDI).

However, this study has conceptualized economic growth as the sustained increase in the real national income of an economy over successive years for a protracted duration (Asteriou & Spanos, 2019). The percentage is employed as the metric for measurement. Furthermore, economic growth is seen as the aggregate outputs documented within an economy during a specified temporal interval, typically spanning one year.

2.2 Theoretical Framework

This study is anchored on the inclusive and extractive theory of institutions notably propounded by Acemoglu and Robinson's in 2012. The theory posits that the quality of a country's institutions largely determines its economic performance and long-term growth trajectory. According to the theory, institutions can be broadly categorized into inclusive institutions and extractive institutions.

Inclusive institutions are characterized by the rule of law, protection of property rights, effective governance, accountability, political participation, transparency, and equal economic opportunities for citizens. These institutions encourage investment, innovation, entrepreneurship, human capital development, and productive economic activities. Consequently, countries with inclusive institutions tend to experience sustained economic growth and improved living standards. In contrast, the extractive institutions are designed to concentrate on political and economic power in the hands of a few elites who exploit national resources for personal gain. Such institutions are associated with corruption, weak rule of law,

poor regulatory quality, political instability, lack of accountability, and limited citizen participation. Extractive institutions discourage investment and innovation which eventually leads to low productivity, poverty, and slow economic growth.

The theory is highly suitable for this study because institutional quality is the central explanatory variable that determines the level of growth in Sub-Saharan Africa. Notably, institutional quality encompasses dimensions such as government effectiveness, control of corruption, rule of law, regulatory quality, political stability, and voice and accountability. These indicators closely align with the characteristics of inclusive institutions identified by the theory. It is pertinent to buttress that many Sub-Saharan African countries over the years have struggled with weak institutions, corruption, political instability, and governance challenges, which reflect extractive institutional structures. Such institutional weaknesses have hindered economic transformation despite the region's abundant natural and human resources. For example, countries experiencing persistent corruption and weak governance often record lower levels of investment, reduced productivity, and slower economic growth.

The theory also explains the variation in economic performance among Sub-Saharan African countries. Nations such as Rwanda, Mauritius, and Botswana have achieved relatively higher and more sustained economic growth due to stronger institutional frameworks characterized by effective governance, respect for property rights, and lower levels of corruption. In contrast, countries affected by prolonged political instability, weak governance, and rent-seeking behavior have experienced slower economic growth. For example, in Kenya, Nigeria, and Zimbabwe, extractive economic policies and centralized political control have contributed to economic decline due to weak governance, political and social unrest (Abubakar, 2023). Furthermore, the theory provides a strong foundation for examining how improvements in institutional quality can stimulate economic growth in Sub-Saharan African countries by strengthening inclusive institutions through enhanced accountability, judicial independence, regulatory effectiveness, political stability, and anti-corruption measures. This implies that resilient institutions can enable the governments create an enabling environment for investment, innovation, and sustainable economic growth. Therefore, the Inclusive and Extractive Institutions Theory is particularly suitable for studies on institutional quality and economic growth in Sub-Saharan African countries because it directly links institutional arrangements to economic outcomes. The theory offers a robust framework for understanding why some countries achieve sustained growth while others remain trapped in underdevelopment despite possessing similar resource endowments.

2.3 Empirical Literature

Billy and Buchanan (2024) examined the impact of institutional quality, foreign direct investment (FDI) economic growth using data from 64 developed and developing countries. The study employed a simple OLS regression analysis, and their findings revealed that institutional quality has a positive and significant effect on FDI and economic growth. They opined that a positive change in a country's institutional quality significantly improves FDI and economic growth. However, the study found that control of corruption, government effectiveness, voice and accountability had insignificant impact on growth.

Bonn (2024) investigated the role of governance quality on inclusive growth using a balanced panel data of 42 provinces in Vietnam from 2010 to 2023 through the estimation method of difference panel Generalized Method of Moments (GMM). The study revealed that Government effectiveness, political stability, regulatory quality, voice and accountability had

positive and significant effect on growth while control of corruption and rule of law exhibited inverse and insignificant effect on growth. The study further concluded that governance quality has positive and significant effect on economic growth.

Using time series data for Nigeria, Abubakar (2023) carried out research on the effect of institutional quality on economic growth from 2000 to 2022. The study used Johansen Cointegration and Ordinary Least Square (OLS) approach and the results showed that institutional quality does not significantly influence economic growth, the study revealed that political stability, government effectiveness, regulatory quality, and control of corruption had inverse relationship with growth while rule of law, voice and accountability exhibited positive but significant effect on economic growth in the country. However, the study examined the relationship using asymmetric approach while considering the composite index of institutional quality on economic growth in the country and found that institutional quality does not contribute to growth.

Walma (2023) employed Generalized Method of Moments (GMM) technique to examine the relationship between institutional quality and economic growth in Ethiopia. The study used time series data spanning for 36 years basically sourced from WDI. The study used rule of law, political stability, government effectiveness, control of corruption, and regulatory quality as measures of institutional quality. The findings revealed that weak institutions and per capita income are the major setback to economic growth in the country. This is because, control of corruption, political stability, government effectiveness, and regulatory quality all had insignificant effect on economic growth, while only rule of law was discovered to have positive and significant effect on economic growth. The study added that nations with robust per capita income, and strong institutions tend to do better than nations with less per capita income and weak institutions. In addition, the study further revealed that institutional quality has positive but insignificant effect on economic growth.

Uddin (2023) examined the role of institutional quality, human capital index on economic growth in selected Sub-Saharan African countries. The study used Auto Regressive Distributed Lag model to examine the short and long run relationship between institutional quality and economic growth in SSA countries. The study found that government investment in health and education sector significantly influence growth in Africa, it added that institutional quality influences investment and economic growth. Though the study discovered that negative but significant relationship exist between control of corruption and economic growth in most of the selected SSA countries. The study concluded that institutional quality is the most effective driver of economic growth in the region but most African countries do not have strong institutions that would enhance growth.

Akinlo (2023) investigated the impact of institutional quality on economic growth in sub-Saharan Africa (SSA). The study used panel data from 26 SSA countries spanning the period from 1998 to 2021 were utilized, employing a two-step generalized method of moments technique. The findings of this study indicated that government effectiveness, voice and accountability had negative and insignificant impact on growth in the region. Economic governance exhibited positive but insignificant effect on growth while institutional governance had inverse and insignificant impact on growth in SSA countries. However, it was discovered that only the rule of law and the control of corruption exhibited a stimulating effect on economic growth. Contrary to initial expectations, the findings of this study suggest that institutional quality does play a role in mitigating the negative impact on economic growth in

the SSA region. The study concluded that most SSA countries are blessed with abundant resources, but it is not evident on the citizens because of high level of corruption, mismanagement and government ineffectiveness. The study further recommended that developing nations should focus on strengthening institutions and priority should be focused on agencies combating corruption in the country.

Sadik (2023) studied the effect of institutional quality on economic growth: Evidence from tripartite approaches in the context of war – torn countries. The study utilized panel Auto regressive distributive lag (PARDL) consisting of pooled mean group (PMG), mean group (MG) and dynamic fixed effect (DFE) to examine the link existing between governance indicators and economic growth. The study found that political stability as well as adherence to regulatory quality enhances economic growth of the war -torn countries. Also, the study found that rule of law, government effectiveness, voice and accountability had positive but insignificant effect on economic growth of the war – torn countries. Based on these findings, the study recommended the imperativeness of improving institutional quality as a sure course of actions among nations interested in driving economic growth.

A similar study conducted by Asongu (2021) examined the impact of institutional quality on inclusive growth in 42 selected African countries from 1990-2020 using the GMM system. The study found that good governance positively amplifies inclusive growth, voice and accountability had positive but insignificant impact on inclusive growth, while rule of law and control of corruption had negative and insignificant impact on growth in the region. The study showed that institutions have positive but insignificant impact on inclusive growth in selected Africa. This shows that most institutions in Africa are weak and insignificant. This finding is apparent in the region because most countries in Africa are bedeviled with corruption, political instability, and government ineffectiveness.

Bekana, Hayil, and Sheen (2020) investigated the influence of institutional quality on economic growth and innovation across 37 African nations from 1996 to 2018. The study employed two methodological approaches: linear econometric specifications that are appropriate for panel data analysis and structural equation models to discern both the direct and indirect effects of institutional development on economic performance. The findings indicated that political stability, voice and accountability had negative and insignificant impact on growth even though the study found that institutional quality exerts a significant influence on economic performance and innovation within sub-Saharan African countries. Furthermore, the study revealed that democracy is positively correlated with economic growth, whereas autocracy negatively affects economic performance. Additionally, the research corroborated that political development toward democratization positively impacts economic performance through two pathways: directly and indirectly via its favorable effect on the innovative capabilities of states.

Similarly, Adegboye, Osabohien, Olokoyo, and Adediran (2020) studied the effect of institutions' challenges on the FDI inflow and its impacts on economic growth. The study used data from 30 selected Sub-Saharan Africa (SSA) countries. It employed fixed and random effect regression model of estimation, it was discovered that foreign capital inflow is very crucial for economic growth in Sub-Sahara Africa and it was also discovered that institutional quality affect the level of FDI inflow to Sub-Sahara African countries.

Sabir, Rafique, and Abbas (2019) conducted research on the impact of institutional quality on FDI and economic growth using the system Generalized Method of Moments (GMM).

In all groupings of nations, the study indicated that institutional quality has a significant impact on FDI. The study used panel data for low, lower-middle, upper-middle, and high-income economies covering the period of 1996-2016. The study revealed that institutional quality influences FDI as well as economic growth in developed economies more than developing economies which are considered low income countries. The study further revealed that institutional quality indices such as control of corruption, rule of law, political stability, and regulatory quality appeared to be key drivers of growth in upper-middle and high-income countries. However, voice and accountability as well as government effectiveness were less relevant but significant driver to economic growth in Europe.

Peres, Ameer and Xu, (2018) used OLS regression method to examine the impact of institutional quality on foreign direct investment (FDI) constituting developed and developing economies; their results revealed that institutional quality positively and significantly influence FDI. The study revealed that developed economies tend to have high level of investment than developing economies due to quality institutions, capital intensity and advanced technologies while developing economies tend to be backward in terms of investment due to weak institutions and low level of technical know-how. The study therefore concluded that governance is a very important indicator of institution that is needed to boost and attract foreign direct investment in both developed and developing economies.

Methodologically, previous studies reviewed employed different estimation techniques such as OLS, GMM, ARDL, Panel ARDL, Fixed and Random Effects models, which might have accounted for the inconsistencies in their findings. However, this study employed a dynamic fixed effects model which is believed to offer more robust results. Also, most of the studies concentrated on the aggregate effect of institutional quality without adequately examining the individual contributions of institutional quality indicators such as control of corruption, rule of law, regulatory quality, government effectiveness, political stability, voice and accountability. Therefore, this study investigated the effect of each institutional quality indicator on economic growth in Sub-Saharan Africa.

3. Methodology

3.1 Nature and Sources of Data

This study utilized secondary data sourced majorly from World Governance Indicators (WGI) spanning for the period of 2002 to 2023 to carry out the analysis. Institutional quality was proxied on control of corruption, government effectiveness, rule of law, political stability, regulatory quality, voice and accountability, while GDP growth rate was adopted as proxy for economic growth which was sourced from World Development Indicators (WDI, 2023) for the period under consideration. World Governance Indicators (2023) stressed that political stability, control of corruption, regulatory quality, government effectiveness, rule of law, voice and accountability of a country is considered weak if the index is close to -2.5 and strong if the index is close to 2.5.

The SSA countries which is considered for this study include; Angola, Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast (Côte d'Ivoire), Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Republic of the Congo, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Tanzania, Togo, Uganda, Zambia, and Zimbabwe.

3.2 Variables Description, Measurement and Sources

Table 1: Description and Measurement of variables

Variables	Description	Sources	Unit of measurement
GDPGr	Annual GDP growth rate, it refers to steady increase in national product over a period of time. Is the total of the gross value contributed by all producers who are residents of the country, plus any product taxes and minus any subsidies that aren't factored into the product value. It is computed without accounting for the depletion and deterioration of natural resources or the depreciation of artificial assets.	WDI 2023	It is measured using composite index ranging from -2.5 to +2.5
RQ	<i>Regulatory quality</i> : It measures the ability to formulate and implement sound policies such as business friendly regulations, market friendly policies, and regulatory framework.	WGI 2023	It is measured using composite index ranging from -2.5 to +2.5
RL	<i>Rule of law</i> : It measures confidence in and adherence to societal rules such as property rights, contract enforcement, and judicial independence.	WGI 2023	It is measured using composite index ranging from -2.5 to +2.5
CC	<i>Control of Corruption</i> : This measures the extent to which public power is exercised for private gain. It includes aspect like bribery, nepotism, and corruption in government	WGI 2023	It is measured using composite index ranging from -2.5 to +2.5
PS	<i>Political stability</i> : It measures the likelihood of political instability and violence. This includes terrorism, political violence and government stability.	WGI 2023	It is measured using composite index ranging from -2.5 to +2.5
VA	<i>Voice and accountability</i> : This measure the extent to which citizens can participate in selecting their government, freedom of expression, and free media. This include aspects like electoral process, freedom of speech and media, citizen participation in politics.	WGI 2023	It is measured using composite index ranging from -2.5 to +2.5
GE	<i>Government effectiveness</i> : This refers to the quality of public services, civil service, and policy formulation. This aspect include quality of bureaucracy, effectiveness of policy implementation and public service delivery.	WGI 2023	It is measured using composite index ranging from -2.5 to +2.5

3.3 Model Specification

This study employed Auto Regressive Distributed Lag Model (ARDL) to examine the effect of institutional quality on economic growth in Sub-Saharan African countries. The model is specified based on the institutional quality and economic growth theory, and adapting the work of Akinlo (2023), the study investigated the impact of institutional quality on economic growth in sub-Saharan Africa (SSA). The functional multiple regression model is specified in the equation as thus;

$$GDPGr_{it} = f(RQ_{it}, RL_{it}, PS_{it}, GE_{it}, CC_{it}, VA_{it}) \quad 1$$

$$GDPGr_{it} = \rho_0 + \rho_1 RQ_{it} + \rho_2 RL_{it} + \rho_3 PS_{it} + \rho_4 GE_{it} + \rho_5 CC_{it} + \rho_6 VA_{it} \mu_i + \lambda_i + e_{it} \quad 2$$

Where; GDPGr is Gross Domestic Product Growth rate which is proxied for growth rate in Sub-Saharan African countries; RQ represents regulatory quality, RL represents rule of law, PS represent political stability, GE represent government effectiveness, CC represent control of corruption, and VA represent voice and accountability, ρ_0 is the constant term, $\rho_1 - \rho_6$ are the coefficients of the variables, μ_i represents the country-specific effects, λ_i stands for the time-specific effects and e_t is the error term.

Apriori Expectation: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 > 0$, $\beta_5 > 0$ & $\beta_6 > 0$.

Therefore, the ARDL model used in this study is presented in equation [3];

$$\Delta GDPGr_{it} = \alpha_0 + \sum_{t=i}^p \varphi_1 \Delta RQ_{it} + \sum_{t=i}^p \varphi_2 \Delta RL_{it-i} + \sum_{t=i}^p \varphi_3 \Delta PS_{it-i} + \sum_{t=i}^p \varphi_4 \Delta GE_{it-i} + \sum_{t=i}^p \varphi_5 \Delta CC_{it-i} + \sum_{t=i}^p \varphi_6 \Delta VA_{it-i} + \alpha_1 GDPGr_{it-i} + \alpha_2 RQ_{it-i} + \alpha_3 RL_{it-i} + \alpha_4 PS_{it-i} + \alpha_5 GE_{it-i} + \sum_{t=i}^p \varphi_6 \Delta CC_{it-i} + \sum_{t=i}^p \varphi_7 \Delta VA_{it-i} + \varepsilon_t \quad [3]$$

The long-run co-integration was estimated using Equation [3];

$$\Delta GDPGr_{it} = \alpha_0 + \sum_{t=i}^p \varphi_1 \Delta GDPGr_{it} + \sum_{t=i}^p \varphi_2 \Delta RQ_{it-i} + \sum_{t=i}^p \varphi_3 \Delta RL_{it-i} + \sum_{t=i}^p \varphi_4 \Delta PS_{it-i} + \sum_{t=i}^p \varphi_5 \Delta GE_{it-i} + \sum_{t=i}^p \varphi_6 \Delta CC_{it-i} + \sum_{t=i}^p \varphi_7 \Delta VA_{it-i} + \varepsilon_t \quad [4]$$

The selection of Pooled Mean Group (PMG) maximum lag (p q) was based on the automatic lag length selection. The study derives the short-run dynamic parameter from Error Correction Model (ECM) estimation, associated with the long-run estimate.

$$\Delta GDPGr_{it} = \alpha_0 + \sum_{t=i}^p \varphi_1 \Delta GDPGr_{it} + \sum_{t=i}^p \varphi_2 \Delta RQ_{it} + \sum_{t=i}^p \varphi_3 \Delta RL_{it} + \sum_{t=i}^p \varphi_4 \Delta PS_{it} + \sum_{t=i}^p \varphi_5 \Delta GE_{it} + \sum_{t=i}^p \varphi_6 \Delta CC_{it} + \sum_{t=i}^p \varphi_7 \Delta VA_{it} + \delta ECM_{t-1} + \varepsilon_t \quad [5]$$

Where;

$\varphi_1 - \varphi_7$ represents short-run dynamic coefficients converging to long-run equilibrium and δECM_{t-1} represents the speed of adjustment parameter and error correction model originated from the estimated equilibrium relationship.

3.4 PMG Estimation Procedure

Pre-diagnostic tests were conducted before carrying out PMG analysis was done. These tests consist of the Descriptive Statistics which considers the mean, the minimum, maximum values, Kurtosis, Jaque-Bera, and Skweness. followed by Cross Section Dependence Test. The (CDS) was conducted to explore whether the variables are cross-sectionally dependent or not. Afterward the Panel Unit Root Test using CIPS and CD-ADF was performed on individual variable to ascertain the order of stationarity. The lag selection was based on automatic selection, and the Panel Co-integration Test for long-run relationship among non-stationary variables using Westerlund was performed. After the pre-estimation tests, the analysis was accomplished through the PMG Dynamic fixed effect.

4. Results and Discussions

This section presents the results of the study, ranging from descriptive statistics, cross section dependence test, unit root test results, panel ARDL-Bounds test results, and Panel ARDL regression results.

Table 2: Descriptive Statistics

	GDPGRT	RQ	RL	GE	PS	CC	VA
Mean	2.439853	-1.87325	-1.13335	0.170471	-1.06861	-0.65407	-1.051
Median	2.903373	-1.92281	-1.07861	0.180008	-1.05831	-0.67763	-0.75639
Maximum	12.27614	-0.58824	-0.90095	0.259346	-0.71347	-0.31936	-0.41226
Minimum	-7.31401	-2.21112	-1.50207	-0.92364	-1.51251	-1.5537	-2.21112
Std. Dev.	3.588532	0.259411	0.128201	0.138667	0.195541	0.206598	0.584234
Skewness	-0.27537	2.328402	-1.06645	-7.59754	-0.6034	-0.98796	-0.8554
Kurtosis	4.151721	11.44266	4.115161	60.55075	2.815169	6.944867	1.97074
Jarque-Bera	4.481865	255.6518	15.93039	9743.193	4.098954	53.53215	10.96202
Probability	0.106359	3.06E-56	0.000347	0	0.128802	2.37E-12	0.004165
Sum	161.0303	-123.635	-74.8012	11.25109	-70.5282	-43.1685	-69.3662
Sum Sq. Dev.	837.0413	4.37412	1.068308	1.249858	2.485365	2.774377	22.18638
Observations	786	786	786	786	786	786	786

Source: Author's computation using STATA version 15

Table 1 shows the panel descriptive test result. The mean of GDPGrT is 2.439853 indicating a relatively low growth rate, the mean is within the minimum and maximum values, with a standard deviation of 3.588 implying moderate variation in economic growth in Sub-Saharan African (SSA) countries. The result further revealed that regulatory quality (RQ), rule of law (RL), government effectiveness (GE), political stability (PS), control of corruption (CC), voice and accountability (VA) all have low mean values which could imply that countries within SSA are faced with weak institutions, stifling economic growth rate, and low productivity. Low mean value could also reflect limited economic opportunities, lack of adequate investment in critical sectors such as security, education, health, and infrastructural development. While a high mean value indicates economic prosperity such as speedy economic growth rate or high economic productivity. The summary of the descriptive statistics revealed that RQ, RL, PS, CC, and Va had inverse relationship with growth rate while only GE had positive relationship with growth rate. Similarly, the standard deviation which

shows the nature of dispersal in the worth of the variables are small, which reveals that there has not been much increase in the value of the variables over the years considered for this study. The kurtosis of the variables are above 3, except for political stability (PS), voice and accountability (VA) which are below 3 implying that most of the variable's distribution is thin and would turn leptokurtic. The jarque bera statistics means GDPGrt, RQ, PS, and CC series are not normally distributed while RL, GE, and VA were found to be normally distributed because their probability values were less than 0.05. The implication is that the contribution of institutions towards growth during the period of study has been low in the region and low growth rate could discourage investment, both domestic and foreign which eventually will reduce capital inflows and limited economic expansion.

Table 3: Cross Section Dependence Test (CDS Test)

Variables	CD-Test	P-Value	Pesaran (CD)	P-Value
GDPGrt	18.28***	0.000	22.639	0.000***
RQ	7.92***	0.000	-4.243	0.005***
RL	6.43***	0.000	9.655	0.013***
PS	21.46***	0.000	3.602	0.041***
GE	3.82***	0.002	-5.201	0.002***
CC	8.90***	0.000	-3.162	0.135*
VA	3.98***	0.000	3.627	0.000***

Source: Author's computation using STATA version 15

Note: Null hypotheses states that there is no cross-section dependence or correlation. ***, **, * indicate significant at 1%; 5%, & 10%. It also indicates rejection of the null hypotheses at 1 percent level of significant.

Table 3 shows the results of the cross-section dependence test. The test indicated that GDPGrt, RQ, RL, PS, GE, CC, and VA have high positive values with low P-values. So we reject the null hypotheses of no cross-sectional dependence at 1% level of significance. This simply implies that there is cross section dependence in all the variables. This also implies that a shock in one of the selected tends to be transmitted to other countries within the SSA countries. This outcome necessitated the use of second generation unit root test for this study.

Table 4: Pesaran's CADF Unit Root Test in the presence of Cross-sectional dependence

Variables	Level(CADF)	t-bar	Remark	First Diff(t)	t-bar	Remark
GDPGrt	-3.156	0.003	1(0)	-4.387	0.000	1(1)
RQ	-2.541	0.166	1(0)	-2.810	0.002	1(1)
RL	-2.256	0.178	1(0)	-2.560	0.042	1(1)
PS	-2.782	0.006	1(0)	-2.373	0.000	1(1)
GE	-2.087	0.059	1(0)	-2.772	0.000	1(1)
CC	-2.354	0.236	1(0)	-2.363	0.000	1(1)
VA	-2.244	0.159	1(0)	-2.508	0.000	1(1)

Source: Authors Computation using Stata 15.0, 2025

Table 4 reveals the Pesaran CADF unit root test which indicated that Gross Domestic product growth rate (GDPGr), political stability (PS) and government effectiveness (GE) were stationary at levels I(0) while regulatory quality (RQ), rule of law (RL), control of corruption (CC), voice and accountability were stationary at first difference I (1).

Table 5: Im-Pesaran CIPS Unit Root Test in the presence of cross-sectional dependence

Variables	Level(t)	1%	5%	10%	Rmk	1 st Diff(t)	1%	5%	10%	Remark
GDPGrt	-3.387	-2.35	-2.25	-2.11	1(0)	-4.682	-2.35	-2.25	-2.11	1(0)
RQ	-2.540	-2.35	-2.25	-2.11	1(0)	-3.446	-2.35	-2.25	-2.11	1(0)
RL	-2.812	-2.35	-2.25	-2.11	1(0)	-4.625	-2.35	-2.25	-2.11	1(1)
PS	-2.116	-2.35	-2.25	-2.11	N	-4.542	-2.35	-2.25	-2.11	1(1)
GE	-2.118	-2.35	-2.25	-2.11	N	-5.223	-2.35	-2.25	-2.11	1(1)
CC	-2.274	-2.35	-2.25	-2.11	1(0)	-4.166	-2.35	-2.25	-2.11	1(1)
VA	-3.040	-2.35	-2.25	-2.11	1(0)	-5.099	-2.35	-2.25	-2.11	1(1)

Source: Authors Computation using Stata 15.0, 2025

Table 5 reveals the Pesaran CIPS unit root test which shows that GDPGrt, RQ, RL, CC, and VA were stationary at level while PS and GE were stationary at first difference. This suggest that there is mixed order of integration, therefore, the study applied pooled mean group or the panel ARDL approach to explore the long-run and short-run effect of institutional quality on economic growth in SSA countries.

Table 6: Co-integration Test for Pedroni's Residual and Westerlund

	Statistics	P-value
Modifies Phillips Perron, L	-8.929	0.000
Phillips-Perron L	-9.625	0.000
Augmented Dickey-Fuller L	-11.448	0.000
Westerlund Co-integration Test: H0:38, Ha:20		
	Statistic	P-value
Augmented Dickey-Fuller L	-4.659	0.000

Source: Author's computation using STATA version 15

The Pedroni and the Westerlund are the two main variants of panel co-integration test used in the study and it was presented in table 6. In all the two cointegration test conducted, the null hypothesis is that there is no cointegrating relationship, because the P-values of all the three test was below the 5% (0.05) critical value, this implies that they were all found to be significant, suggesting rejection of the null hypothesis of no cointegrating relationship between economic growth rate (GDPgrt) and institutional quality (RQ, RL, PS, GE, CC, and VA) employed in the model. Based on this result, the study proceeded to establish the ARDL MG, and DFE long run and short run coefficients.

Table 7: MG-ARDL Estimation Outcomes

Dependent Variable: Economic growth				
D.GDPgrt	Coefficient	Std. Err	Z-stat	P>(Z)
Long-run Coefficient				
RQ	0.2532	0.0039	63.6486	0.0000
RL	0.0262	0.0197	1.3276	0.2055
PS	-0.0052	0.0041	-1.2569	0.2293
GE	-0.0196	0.0147	-1.3287	0.2052
CC	0.0008	0.0030	0.2901	0.7759
VA	0.14053	0.0027	51.7845	0.0000
Error Correction Coefficient (EC)	-0.7557	0.0383	19.76	0.000
Short-run Coefficient				
ΔRQ	0.0006	0.0018	0.3419	0.7374
ΔRL	-0.1894	0.0029	-64.1962	0.0000
ΔPS	0.0047	0.0013	0.3550	0.7278
ΔGE	-0.0006	0.0022	-0.2868	0.7784
ΔCC	0.0003	0.0016	0.2093	0.8372
VA	-0.4295	0.1750	-2.4529	0.0496
Intercept	-16.351	1.820	-8.98	0.000
Observation	728	728	728	728
Hausman Test Result				
PMG VS MG Chi2(5)	Chi2=68.64	Prob>chi2	0.000	Decision=MG

Source: Author's computation using STATA version 15

Based on the Hausman test, the MG (Mean Group) model is preferred over the PMG model because the MG model is consistent, while the PMG model is not, given the significant difference.

Table 6 reveals the Mean Group (MG)-ARDL estimation results which examined the long-run and short-run effects of institutional quality indicators on economic growth across the sampled countries. The Hausman test result ($\chi^2 = 68.64$, $p = 0.000$) rejects the null hypothesis that the Pooled Mean Group (PMG) estimator is efficient and consistent, thereby confirming that the Mean Group estimator is the appropriate model for this study. This implies that the long-run coefficients differ significantly across countries and that country-specific heterogeneity is important in explaining economic growth.

The result revealed that regulatory quality (RQ) has a positive and statistically significant long-run coefficient ($\beta = 0.2532$, $p = 0.0000$). This indicates that improvements in the quality of regulations in Sub-Saharan Africa over the years has enhanced the private sector development, market efficiency, and business activities which in the long promoted economic growth. Specifically, a one-unit increase in regulatory quality increases economic growth by approximately 0.25% in the long run. This could also imply that effective regulations in countries can reduce business uncertainty, encourage domestic and foreign investment, improve resource allocation, and stimulate productivity. Countries with strong regulatory

frameworks are better positioned to attract capital and foster sustainable economic growth than countries with weaker regulatory qualities. The coefficient of Rule of Law exhibited a positive ($\beta = 0.0262$) but insignificant ($p = 0.2055$) effect on growth in the region. Although the positive sign suggests that stronger legal institutions and contract enforcement may promote growth, the effect is not sufficiently strong to be statistically confirmed in the long run. This means that while legal frameworks are important for economic activities, weaknesses in judicial effectiveness, enforcement mechanisms, or poor institutional implementation may limit their contribution to growth within the sampled countries. Improvements in the rule of law alone may not immediately translate into higher economic performance unless accompanied by broader institutional reforms.

The result for political stability (PS) also exhibited a negative and insignificant coefficient ($\beta = -0.0052$, $p = 0.2293$) indicating that political stability does not have a significant long-run influence on economic growth in the study period. The insignificant effect suggests that the benefits of political stability may not automatically lead to economic growth if stable political environments are not accompanied by effective economic policies, institutional reforms, and productive investments. Similarly, the result for government effectiveness (GE) had a negative and insignificant coefficient ($\beta = -0.0196$, $p = 0.2052$). This implies that variations in government effectiveness do not significantly influence long-run economic growth. The result may reflect inefficiencies in public service delivery, bureaucratic bottlenecks, corruption, or poor implementation of government policies within the study area. Although effective governance is theoretically expected to promote growth, but the result suggests that government effectiveness within Sub-Saharan Africa have not yet translated into measurable economic gains across the sampled countries. Consequently, the result for control of corruption records a positive but exhibited insignificant coefficient ($\beta = 0.0008$, $p = 0.7759$). This indicates that efforts to reduce corruption over the years in the region have not significantly influenced economic growth in the long run. The insignificant impact simply suggest that anti-corruption measures remain weak or insufficiently enforced. It may also indicate that corruption is deeply embedded within institutional structures, thereby reducing the effectiveness of policies aimed at curbing it. This finding is in consonance with the study of Abubakar (2023) which purported that nations with high level of corruption tends to be backward compared to countries with minimal corrupt cases.

Voice and Accountability had a positive and highly significant long-run coefficient ($\beta = 0.1405$, $p = 0.0000$). This suggests that greater citizen participation, freedom of expression, media independence, and government accountability contribute significantly to economic growth. This means that democratic governance and accountability mechanisms enhances transparency, improve policy responsiveness, and strengthen investor confidence. As citizens gain greater participation in governance, governments become more accountable, leading to better economic decision-making and improved growth outcomes. This result is in line with the study of Uddin (2023) which revealed that voice and accountability has positive and significant impact on growth in countries like South Africa, Rwanda, Togo, Sudan, and Madagascar. The Error Correction Term (ECT) is negative and statistically significant ($\beta = -0.7557$, $p = 0.0000$), satisfying the theoretical expectation. The coefficient implies that approximately 76% of any short-run disequilibrium in economic growth is corrected within one period. The high speed of adjustment indicates a strong tendency for the economies to return to their long-run equilibrium path following short-term shocks. This confirms the

existence of a stable long-run relationship between institutional quality indicators and economic growth.

The short run result revealed that only rule of law ($\beta = -0.1894$, $p = 0.0000$), Voice and Accountability ($\beta = -0.4295$, $p = 0.0496$) significantly influence economic growth, and these indicators exhibited negative effects on growth. The remaining indicators such as regulatory quality, political stability, government effectiveness, and control of corruption were statistically insignificant. The negative short-run impact of rule of law may reflect adjustment costs associated with legal reforms, stricter regulations, and institutional restructuring, which can temporarily slow economic activities before yielding long-term benefits. Similarly, the negative but significant effect of voice and accountability depicts that increased voice and accountability might have initially created policy uncertainty, political debates, or governance transitions which had temporarily reduced growth. However, the significant but positive long-run coefficients of regulatory quality, voice and accountability suggest that the long-term benefits of institutional development outweigh these temporary adverse effects.

In the nutshell, the MG-ARDL results demonstrated that among the institutional quality indicators examined, regulatory quality and voice and accountability are the most important drivers of long-run economic growth. In contrast, rule of Law, political stability, government effectiveness, and control of corruption do not exert significant long-run effects. Consequently, it can be deduced that institutional quality had negative and insignificant effect on growth during the period of study in Sub-Saharan Africa. Therefore, the findings are in contrast with the study of Bonn (2024), Billy and Buchanan (2024), their study found that institutional quality has positive and significant effect on growth in both developed and developing nations. However, this study is in consonance with the works of Abubakar (2023), Walma (2023), and Akinlo (2023), these studies found that institutional quality does not significantly influence economic growth in SSA countries.

5. Conclusion and Recommendations

This study examined the effect of institutional quality on economic growth in SSA countries. The outcome of the cross-sectional dependency test revealed the presence of cross-sectional dependence between dependent and explanatory variables, second-generation unit root test such as CADF and the CIPS was employed. The cointegration test of Pedroni and Westerlund, shows that long run relationship existed between the dependent variable and the explanatory variables from 2002 to 2023, the study employed the mean group estimator because it was found to be more efficient having conducted Hausman test. However, the regression result revealed that regulatory quality, voice and accountability are the most important drivers of long-run economic growth while rule of Law, political stability, government effectiveness, and control of corruption were found to be insignificant. The short run result revealed that rule of law, voice and accountability had significant effect on growth while the remaining indicators exhibited insignificant effect on growth in SSA. Consequently, the study revealed that institutional quality has insignificant effect on growth in SSA countries implying that the regions' institutions are weak. The outcome of this study underscores the critical needs for governments of SSA countries to set out measures to strengthen her institutions to enhance economic growth.

The study recommends that governments of SSA countries should prioritize improvements in institutional quality through stronger rule of law, effective governance, corruption control, and political stability since they exhibited negative and insignificant effect

on growth. Also, rigorous anti-corruption campaign should be taken very seriously and the agencies should be constituted by reputable staff to bring forth desired result. Similarly, there should be stringent laws against any political office who acquire assets in western countries through fraudulent means. Lastly, efforts should be made by governments of SSA countries to stabilize their political system so as to attract both local and foreign investors to enhance economic growth.

References

- Abubakar S. (2023) Institutional Quality and Economic Growth: Evidence from Nigeria. *African Journal of Economic Review*, 8 (1) 223-230
- Acemoglu, D. (2010). Growth and institutions. In *Economic Growth*. London: Palgrave Macmillan UK. (pp. 107-115
- Acemoglu, D., & Robinson, J. (2008). *The role of institutions in growth and development*. Washington, DC: World Bank.
- Adegboye, F.B., Osabohien, R., Olokoyo, F.O., & Adediran, O.O. (2020). Institutional quality, foreign direct investment, and economic development in sub-Saharan Africa. *Humanit Soc Sci Commun* 7, (38). <https://doi.org/10.1057/s41599-020-0529-x>.
- Ajudua, W. A., (2018). Financial development, human capital and its impact on economic growth of emerging countries, *Asian Journal of Economics and Banking*, 5 (1), 86-100
- Akinlo, A.T., (2023), Institution and economic growth in sub-Saharan Africa. *Journal of Emerging Economy Studies*, 12 (2) 180-187.
- Andrews, A. A., (2023). Institutional quality in enhancing economic development: Transforming Nations through institutions: *Journal of Governance Quality* 30-35
- Arvin, M. B., Pradhan, R. P., & Nair, M. S. (2021). Are there links between institutional quality, government expenditure, tax revenue and economic growth? Evidence from low-income and lower middle-income countries. *Economic analysis and policy*, 70, 468-489.
- Asongu, E.A. (2021) Institutional Quality and Economic Development: An Empirical Investigation of institutions in selected developing countries in Africa, *Journal of Governance Quality*, 22(8) 99-106
- Asteriou, O.A., & Spanos, A.C., (2019). Institutional quality and economic growth: empirical evidence from the Asian countries and SSA. *Journal of Economic Growth Management*, 25 (6) 301-309
- Bekana, A.A., Hayil, O.S, & Sheen, K.D., (2020). Governance quality and economic growth: Evidence from Asian countries and Sub-Saharan African countries. *Journal of Comparative Economics*, 46(9), 195-220.
- Billy, C.N., & Buchanan, A.J., (2024). Institutional quality and economic development in selected SSA countries and Latin American countries. *International Journal of Governance and Economic Development* 19 (12), 178-183.
- Bonn, F.D., (2024) Institutional Quality, Public Investment- Economic Growth in Vietnam. *Theoretical Economics Letters*, 9, 691-708.
- Bruins A.D., (2023). Institutional quality and economic performance of developing nations: Empirical evidence of Sub-Saharan African countries. *Creative Leadership Journal* 44(11), 220-227

- Fussu, B.A., Bettés. A. A., & Hueffler, C.A., (2024). Institutions, governance quality and economic growth in Sub-Saharan Africa: contribution of governance towards economic growth. *Journal of African Economies*, 22 (8), 301–308.
- Luz, N.H., (2019). Performance of institutions and economic development. *Journal of Economic Development & Management*, 15 (7) 418-423.
- Nair, M., Arvin, M. B., Pradhan, R. P., & Bahmani, S. (2021). Is higher economic growth possible through better institutional quality and a lower carbon footprint? Evidence from developing countries. *Renewable Energy*, 167, 132-145.
- Peres, M., Ameer, W., & Xu, H. (2018). The impact of institutional quality on foreign direct investment inflows: evidence for developed and developing countries. *Economic research-Ekonomska istraživanja*, 31(1), 626-644.
<https://doi.org/10.1080/1331677X.2018.1438906>.
- Ritzen, O.O., & Brooks, A.O., (2024). Institutional quality and economic development in developed and developing countries: Evidence of Sub-Saharan African countries and European countries. *Economic Development and Managerial Sciences*, 11 (4), 128-134.
- Rodrick, A.A., (2022). Governance quality and economic growth in developing and developed nations: The role of institutions and FDI . *American Journal of Economic Review*. 80 (3), 213-219.
- Sabir, S., Rafique, A. & Abbas, K. (2019). Institutions and FDI: evidence from developed and developing countries. *Financial Innovation*, 5(8), 1-20.
- Sadik, S.K., (2023). Institutional quality and economic growth among countries in economic crisis. *Governance Quality and Economic Development Journal*, 13(6), 406-412.
- Sevinj, A.A., (2023). Empirical analysis of governance quality, foreign direct investment and economic growth in both developed and developing countries. *Applied Economics and Management*, 55 (15), 172–178.
- Todaro M. P. and Smith S. C. (2011), “*Economic Development*”. Eleventh Edition: Pearson Education (Singapore) Pte Ltd, Delhi, India.
- Uddin, B. S., (2023). Institutional quality, human capital index and economic growth in Sub-Saharan African countries. *Asian Journal of Economics and Governance*, 15 (10), 867-893.
- Walma, G.B., (2023). Impact of institutional quality on economic growth in Ethiopia. *African Journal of Economic Management and Development* 19 (9) 801-808.
- World Development Indicators (2023). Atlas method [Data file]. Retrieved from <http://data.worldbank.org/indicator/NY.GNP.PCAP.CD>.
- World Governance Indicators (2023). *Overview of global governance growth rate*. World Governance Report, Washington.