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**ORIGINAL ARTICLE**

# The role of Institutional quality, human capital development on economic growth in Sub-Saharan Africa

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**ABSTRACT**
**Purpose** – The paper examined the role of institutional quality and human capital development on economic growth in Sub-Saharan African (47) countries.
**Methodology** –The study employed secondary data from all the countries within the Sub-Saharan African countries region for the period of nineteen years, with the exclusion of South Sudan due to insufficient data; all the data was sourced from the World Bank Database and was analyzed via the use of fixed effects regression based on the nature of the study (i.e., Panel data).
**Findings** –This study's findings revealed that IQ and HDI are statistically insignificant in the economic growth of the SSA region.
**Originality/Novelty** – The study covered the existing gaps by adequately and sufficiently measuring the institutional quality and human capital index's role on the stated region's economic growth.
**Implications** -–The study, therefore, recommends that various authorities should enhance both health and educational systems, allocating adequate resources to both sectors to foster economic growth, and there should be proper monitoring and evaluation measures to curtail the corruption and insecurity within this region.

**Keywords:** Institutional quality, Human capital and development, Economic growth, and Sub-Saharan Africa.

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## INTRODUCTION

Sub-Saharan Africa has faced numerous challenges, including political instability, economic disparities, and health crises. However, it has also made considerable progress in areas such as education, healthcare, and technology. Despite the complexities of its drapery of cultures, struggles, and achievements, Sub-Saharan Africa has consistently displayed resilience and a determination to shape its own economy.

The existing economic challenges of some Sub-Saharan Africa countries have long been a cause for concern. These challenges were associated with complex range of factors. Despite the region's diverse resources and human resources, it has struggled with various issues that have hindered its economic growth. According to the Fagbemi, et al. (2021), inadequate infrastructure, limited access to education and healthcare, and political instability are among the key factors that have contributed to economic struggles in many Sub-Saharan countries. Furthermore, high levels of corruption and inefficient governance have often hindered the investment and impeded the effective allocation of resources. Many countries in the region also suffer from a lack of economic diversification, relying heavily on a few commodities, which leaves them vulnerable to global market fluctuations.

The recent pandemic also contributes to these challenges. It has disrupted supply chains, affected the various sectors, industry, and worsened poverty levels (Yu, et al. 2021). These hardships have called for the serious action. Efforts to address these issues are ongoing, with initiatives focusing on improving governance, investing in infrastructure, and promoting human capital development. These measures are aimed at driving sustainable economic growth and build a brighter future for SSA region (Phale et al. 2021). While the road ahead remains challenging, there is hope for Sub-Saharan countries to overcome their economic obstacles and build its economy. The commitment to reforms and holistic strategies within this region is highly needed.

Lack of sufficient institutional quality has a detrimental impact on economic affairs, and the negative impact on economic growth is a key challenge for many Sub-Saharan African countries. Bad governance, the rule of law, and regulatory efficiency are all indicators of institutional quality, all of which are critical for building a climate conducive to economic success. However, the region has battled with inadequate institutions, which have inhibited efficient governance and economic development. Poor institutional quality, according to Asiamah et al. (2022), can lead to political instability, corruption, and weak laws, all of which hinder both domestic and foreign investment. High levels of corruption in the SSA area take resources away from productive industries and damage public trust (Ogbeide and Adeboje 2020).

In addition, inadequate infrastructure and inefficient regulatory systems hinder business operations and investment. According to Gwagwa et al. (2021) highlights that Sub-Saharan African countries economies always face difficulties from the bad governments. These lacunae create uncertainty, discourage entrepreneurship, and limit the growth potential of business activities. The consequence of these institutional challenges is slower the socio-economic affairs within the study area. The Sub-Saharan African region has made progress in areas like reducing inflation and improving macroeconomic stability, persistent structural constraints, including poor governance and weak institutions, continue to be hindering the economic progress (Ogunniyi et al. 2021).

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Addressing the problem of poor institutional quality is a big task that requires comprehensive reforms. Efforts to strengthen institutions, enhance transparency, and promote good governance are crucial steps toward fostering economic growth in Sub-Saharan Africa. These initiatives, combined with government spending on both social amenities and its citizen, have the potential to transform the economics of they said region and create a more development.

The significance of studying both the institutional quality, human capital, and their impact on economic activities cannot be overstated. Scholars have raised concerns about the African economy, particularly due to its slow economic growth rate, which is the slowest in the world (Kaba, 2022). Institutions, along with economic fundamentals, have been identified as crucial determinants of economic performance (Rodriguez-Pose, 2020). It is very important to emphasis on the role of institutions in understanding African economic success. Weak institutions were identified as the cause of slow growth in the 1980s, while strengthened institutions led to a resurgence of growth in the 1990s (Ellahi et al., 2021). Coccia (2020) defines institutions as "the norms that regulate society and determine human interaction."

Poor institutional quality (IQ) has been shown to have a statistically insignificant impact on economic growth (Abdulahi et al. 2019; Gyamfi et al. 2020; Nketia and Kong 2021). According to Adzima and Baita (2019), all quality of institutions metrics appear to have a negative impact on economic growth. Similarly, Abubakar (2020) discovered that various IQ measures, such as voice and accountability, have a beneficial effect on GDP. Gachoki (2016) discovered a negative relationship between openness and growth in the economy in SSA. This is due to a high degree of corruption and ineffective laws. This revealed the existence of a negative relationship between economic progress and the involvement of FDI. According to Wandeda (2021), the SSA region lags behind other regions in terms of property rights (PRs) protection and corruption prevention. This is due to political instability and obedience to the rule of law, which has been compounded by repeated political crises and difficulties in obtaining fairness through the legal system.

The World Bank defines institutional quality as the way a country administers its socioeconomic affairs and social resources to promote economic growth and development, with an emphasis on elements such as law and order. This idea is divided into six dimensions: Rule of Law, Corruption Control, Regulatory Quality, Government Effectiveness, Voice and Accountability, and Political Stability (Kunawotor et al., 2020). A nation's institutional framework includes all the norms and cultural aspects that constitute the societal laws guiding interactions in economy, society, and politics.

The hostile impact of poor quality of institution on African economies is a significant concern in recent research. Multiple studies have highlighted the negative repercussions of weak institutions on economic performance in the region. Borja (2017) emphasize that inadequate institutions, characterized by corruption, lack of property rights enforcement, and ineffective governance, imped both domestic and foreign investment, thus impeding economic growth. This is particularly evident in Sub-Saharan African countries, where weak institutions undermine investor confidence and create an uncertain business environment (Juju et al. 2020).

Furthermore, inadequate institutional quality frequently results in insufficient resource allocation and misappropriation of public monies due to an absence of transparency and accountability. This misallocation decreases economic efficiency and stifles productivity.

Furthermore, Aluko and Ibrahim (2020) emphasize the relationship between poor institutions and restricted technical innovation in Sub-Saharan African countries. More than adequate property rights protection and regulations can discourage innovation and discourage development investments, limiting the potential for technological progress and economic growth.

The consequences of poor institutional quality are mirrored in low levels of economic diversification, high unemployment rates, and increases poverty. Towah (2019) emphasizes that enhancing institutional quality is a crucial aspect for catapulting economic and sustainable advancement in SSA. Efforts to strengthen governance, reduce corruption, and improve the overall institutional framework hold promise for addressing these challenges and creating an environment conducive to economic progress in Sub-Saharan African countries.

Strong institutions contribute to a conducive business by enhancing production efficiency. As a result, this will foster the growth of both the individual, groups of individual and the government sectors, facilitate the expansion of human and physical resources, and promote economic prosperity (Alam et al., 2019). Some economies continue to invest in political reforms and institutional enhancements to bolster their capacity to convert resources into sustainable long-term economic progress (Karim et al., 2023).

Good institutions are critical in Sub-Saharan Africa for creating an enabling environment for economic progress that benefits all segments of the population (Pertegato, 2020). Numerous research has pounded on the role of institutions in achieving long-term sustainable growth and investment (Garcia-Sanchez et al., 2020; Alam et al., 2019). These institutional inequalities result in global variations in education attainment, capital accumulation, productivity, and income disparity (Laajaj et al., 2022). Institutional variables heavily influence economic policies (Kunawotor et al., 2020). The concept of IQ is important in terms of contract enforcement and the economic policies endorsed by the ruling class (Uzar, 2020). Factors influencing IQ include bureaucratic quality, corruption control, transparency, government stability, government policies, and many others (Islam et al., 2020).

Nguyen et al. (2018) found a strong link between institutional quality and economic success in emerging economies. Similarly, Nair et al. (2019) examined the correlation between GDP growth and institutional quality in a number of East Asian countries, discovering that high-quality institutions act as catalysts for a country's economic progress. Hayat (2019) evaluated numerous nations and discovered a significant relationship among institutional quality and economic growth.

Kunawotor et al. (2020) did a comprehensive analysis on income inequality in Africa for many years, looking deeper into the interaction and concluded that institutional quality is critical in minimizing income disparity within nations. According to Wang et al. (2023), key institutional quality variables such as regulatory quality, freedom of commerce, and voice and accountability have a significant impact on income disparity in Indonesia. Furthermore, Dossou et al. (2023) argued that effective governance is a critical driver of alleviating poverty and economic growth.

The empirical overview underscores a robust association between institutional quality and developmental outcomes. Extensive research consistently reveals that nations boasting more stable institutions tend to exhibit superior human development, especially in the realms of health and education. Ibrahim and Ajide (2021) offered a specific illustration of how institutional

quality correlates with increased life expectancy and reduced infant mortality rates in the context of healthcare outcomes.

Ouedraogo et al. (2022) used multiple variables to gauge institutional quality in a study concentrating on Sub-Saharan Africa and discovered that institutions play a critical influence in improving longevity at birth. Dhrifi (2020) emphasized the importance of institutional quality in determining the influence of healthcare spending on newborn mortality rates. In contrast, Uddin et al. (2023) published findings indicating that health investment in Africa may decrease life expectancy due to the intermediary effect of excellent governance.

Economic growth is influenced by structures, governance, and institutional quality. If structural and institutional factors do not support the realization of human capital's benefits, the direct link between human capital development and economic growth may appear statistically negligible. Ibrahim (2018) emphasizes the relevance of governance in shaping Africa's human capital-growth nexus. Sub-Saharan Africa (SSA) is often associated with institutional quality issues, social instability, poverty, infectious diseases, and economic insecurity (Mustun, 2022).

Many developing economies lack the rule of law, resulting in negative societal outcomes such as resource misappropriation, corruption, and opportunistic behavior (Wawrosz, 2022). Research indicated negative association of IQ and FDI received by a country (Adegboye et al., 2020). Decline in FDI is always caused by poor institutional quality. Urbano et al. (2020) found that IQ is one of the contributing factors that determining growth of any given economy. High-quality institutions are widely recognized as essential for promoting economic success (Sabir et al., 2019).

Good institutions are required to explain and promote African economies. Empirical findings from a project suggest that the poor growth seen over many decades can be linked to insufficient institutions, whereas the growth rebound shown over the previous two decades can be attributed to improved institutions. Good governance is critical for creating a stronger economy, which is supported by variables such as more efficient labor division, more productive investment, and timely execution of socioeconomic policies. To support these variables and promote economic growth, strong governance must be in place (Fosu, 2021).

According to Elliott (2017), corruption can be used as a strategy to manipulate license selection, benefiting only a few members of the community who give the highest bribe amounts, which has a negative impact on the nation's economy. Obamuyi and Olayiwola (2019) also looked into the effect of corrupt practices on economic growth. And discovered that corruption stifles investment growth, hence damaging economic progress. The study investigated how corruption severely affects the nation's economy by lowering both private and state investment (Spyromitros and Panagiotidis 2022).

In their research, Saha, and Ali (2017) discovered that corruption has hampered economic progress. They did, however, point out that the negative impact of corruption on economic growth is more strongly related to the quality governance provides than its economic repercussions. Hodge et al. (2011) investigated the indirect mechanisms via which corruption influences socioeconomic affairs. They discovered that corruption stifles growth by reducing spending in both physical and human capital, while also leading to political instability, by analyzing data from 1984 to 2005 and encompassing eighty-one countries.

Osabiyi et al. (2019) confirmed that corruption has a detrimental impact on the growth of the economy in West African countries, proving its stifling function. Furthermore, their research

found that efforts to regulate corruption, improve regulatory standards, preserve political stability, and reduce violence have been ineffective in alleviating the negative consequences of corrupt behavior on West African economy.

According to Brada et al. (2019), the relationship between misconduct, capital, and growth differs between small and large countries. Similarly, Malanski and Póvoa (2021) discovered that countries with high levels of corruption tend to have lower economic growth. Gründler and Potrafke (2019) reinforce this observation by establishing a clear link between corruption and economic expansion. Hodge et al. (2011) emphasize the threat facing the economy as a result of corrupt actions by individuals and their influence on economic growth, attributable to the impediment to physical capital expansion. Numerous research has lamented the contributions and functions of having good institutions, as indicated by the study of Asghar et al. (2020), Abdulahi et al. (2019), and Erum and Hussain (2019).

According to Abid et al. (2021), who conducted study, institutions indicators such as government effectiveness, political stability, corruption control, regulatory quality, and the rule of law have been the cause of the economic downturn. However, it was shown that these institutional measures have little impact on the economies of most growing countries in the Middle East and North Africa. As Bester (2023) points out, the relationship between institutional quality, mineral production, and economic progress in several African countries is complex and multifaceted. Inadequate institutions have been cited as a hindrance to long-term growth, yet institutional reforms can help. Political instability is regarded as the primary impediment to economic development in emerging economies (Silvestre, 2015). According to Ogbeide and Adeboje (2020), nations within Sub-Saharan Africa (SSA) have poor institutions, which result in ineffective policies that impede progress.

Agoba et al. (2017) explored the association between institutions and economic growth volatility. They examined a wide range of countries, employing several measures to assess political institutions. These indicators included regime kinds, which included factors such as chief executive recruitment regulations and executive legitimacy. They also assessed political stability, which included measurements of aggressiveness, protests, revolutions, riots, and other events. They also investigated policy uncertainty. According to the study's findings, democracy has a moderating influence on economic instability.

Increased transparency, accountability, and governance frameworks can help countries attract investment, promote responsible mining practices, and ensure fair distribution of mining income (Dhrifi et al., 2020). Education is critical for enhancing institutional quality and supporting developing nations in avoiding poverty (Dhrifi et al., 2020). Strong institutions are critical for maximizing the good effects of economic expansion while limiting any negative implications (Nchofoung et al., 2021). The quality of a country's political institutions, such as the rule of law, anti-corruption measures, minimal or no violence, and citizen empowerment, has a substantial impact on the economic decisions made by those in power, particularly in resource-rich countries (Ohlendorf et al., 2022).

Olaoye et al. (2020) contend that government budgetary policymaking is opaque and fraught with uncertainty. They identify rigidities, bureaucracy, a lack of credibility, a lack of accountability, and poor governance as common characteristics associated with government fiscal policy. Our research shows that developing-country institutions, particularly in ECOWAS nations, are of exceedingly low quality. This impedes public fiscal operations and reduces

economic growth. Policy implications include the fact that just raising government spending without enhancing institutional quality would not result in greater economic growth in ECOWAS countries.

Furthermore, within emerging economies characterized by insufficient institutional frameworks, swift economic growth coupled with unequal resource allocation, opacity in public resource utilization, and an inefficient government system can compromise the core objective of government expenditure: achieving the highest level of general welfare and social cohesion. Effective and efficient governance is critical in overcoming market failures by reinforcing the government's commitment to maintaining political stability and cultivating an open society. This includes contract enforcement, property rights protection, combatting corruption and lawlessness, and improving the functionality of markets (Kim et al., 2018).

Many studies have been conducted to evaluate the impact of government spending on economic growth and to compare the two factors. In order to strengthen its economy over time, the government raises its spending on both people and material resources. According to Okerekeoti (2022), higher government investment in social and physical infrastructure supports economic growth. Allocating funds to the health and education sectors, for example, contributes to improved labor productivity and economic growth. Similarly, investing in infrastructure such as roads, telecommunications, and electricity generation lowers manufacturing costs, promotes investments by the private sector, and boosts business viability, all of which drive economic growth.

Increased government spending, according to Menyah and Wolde-Rufael (2013) and Dudzeviit et al. (2018), promotes economic development. There is agreement that higher government spending, both recurring and capital, can potentially boost economic growth. Human capital, according to Faggian et al. (2019) and Ahmed et al. (2020), is a key driver of economic growth. Many other characteristics, such as education, life expectancy, and an individual's health, can also influence HDI because they improve labor productivity and efficiency (Kumari & Pradhan, 2014). However, the SSA regions, Latin America, and some islands suffer from a lack of physical infrastructure that causes a detrimental and considerable impact on GDP and impedes economic development (Acheampong et al., 2022).

Human capital development is critical for long-term development because it promotes social sustainability and assures the equal distribution of development gains (Idike et al., 2021; Sima et al., 2020). Several studies on the relationship between human capital and economic growth have discovered that human capital development enhances productivity growth (Lin et al., 2021). Saha and Zhang (2017) studied the influence of democratization and economic expansion on human development in developing and developed nations. They discovered that the positive interplay between growth and democracy is extremely beneficial to human development, particularly in emerging countries.

The hyperlink between education and economic development has long been a source of contention. Many people believe that education has an impact on economic advancement, while others believe that economic circumstances have an impact on education. Furthermore, the impact of government spending on education on economic growth is debatable. Education has long been acknowledged as a significant economic driver in the United States. It has both direct and indirect benefits on people, providing them with knowledge, attitudes, and skills that help

the economy. Education goes beyond labor-related skills to develop innovation and the ability to drive growth, thus serving as a tool for human capital expansion.

Some research, however, argue against the assumption of a long-term relationship between government spending in education and long-term economic growth. According to this research, spending money to education is mostly for consumption, as obtaining knowledge or skills is primarily for personal improvement and does not intrinsically contribute to economic growth (Faggian et al., 2019; Kushwaha & Tiwari, 2019). According to Olaoye et al. (2020) and Olaoye and Afolabi (2021), increased government spending is related with nepotism in politics, an overburdened administration, and waste of public resources, all of which lead to weaker economic growth. This means that the quality of institutions in Economic Community of West African States (ECOWAS) countries is quite low, implying that the advantages of government investment are lessened in such a situation. Their empirical findings suggest that government spending will only have a positive economic impact if the institutional framework is strengthened.

In Sub-Saharan African countries, research on the subject is scarce. Existing research frequently focuses on traditional economic development metrics such as GDP, HDI, and educational attainment (Yumashev et al., 2020) and fails to take additional human capital development variables into account. Shuaibu (2016) investigated the factors impacting HDI in a number of African nations. This study explains the long-term relationship between human capital development, health, and effective governance. However, the study focused on female education as a proxy for HDI while ignoring the other human capital indexes outlined in the theory (government spending on both education and health, life expectancy, and so on). As a result, the study intends to answer the research issue that follows: Does human capital development and institutional quality serve as economic growth drivers in Sub-Saharan African countries? At the same time, the study's hypothesis will be addressed.

Several studies have been conducted, however the quantity of studies on SSA countries is limited. These studies, however, have notable shortcomings. Bokana and Akinola (2017), Danquah and Ouattara (2015), and Zelleke et al. (2013), for example, examined the effects of human capital development and total factor productivity on economic growth in SSA countries. The prior studies have a key fault in that they emphasize the immediate impact of human capital development on productivity growth and technology adoption. They overlook the indirect benefits of human capital development as well as the intervening activities of institutional quality. These elements act as passive agents that are required for economic progress, particularly in most African countries.

This study is relevant and will highly contribute to the humanity and set policies to the policy makers due to the uniqueness of the study. In addition, many studies have failed in adequate and effective measurement of human development theory and these theoretical gaps have been acknowledged by aforementioned authors (Ahmad et al., 2022; Jiang et al., 2022; Mahmood et al., 2023), which they all suggested that further research should consider additional indicators of human capital and institutional quality, or to expand the model by incorporating other variables as to close the theoretical gaps. Also, some latest studies on same context by (Dickson et al., 2021), failed to account for the unit root and other relevant test on their data set, which can lead to incorrect estimation of their various outcome.

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All the stated gaps call for this study, which the study intend to fill these established gaps by investigating the role of IQ and HDI on Sub-Saharan African countries economics. The study provides a comprehensive analysis on a broader set of human capital and institutional quality measures, which considers data from all the countries within the stated region, except South Sudan which has the issue of insufficient data due to its recent independent. By filling the stated gaps, the research will be of great important to policymakers and all the interested researchers in field of developmental and macroeconomics.

This study aims to address a theoretical gap in the understanding of the relationship between human capital, institutional quality, and economic growth in the SSA region, which makes the study differs from previous research.

## METHOD

This section provides information about the data used in the study as well as the sources of the data. Secondary data from the World Bank database, 2023, was used in the study. The data were all pre-estimated, and fixed effect regression was finally employed to achieve the study's objectives. GDP and all the IQ (regulatory quality, political stability, corruption control, voice and accountability, rule of law, and government effectiveness) and human capital development index, such as (government expenditure on health, life expectancy, government expenditure on education, and literacy rate) are denoted as the dependent variable. All these variables have been obtained from the fourth-seven nations and subjected to the specified tests in order to confirm the series' stationarity, relationship, and description.

This study's methodology is based on the work of Bahizire et al. (2022), who investigated the impact of intelligence on environmental efficiency in SSA, and Angrist et al. (2021), who recognized education and health as essential elements in human capital development in their study. They all agreed and stated that a healthy and educational society was recognized as a creative and productive society, which means that health and education are vital aspects in enhancing worker productivity and efficiency through various talents. The analysis relied on annual secondary data obtained from the World Bank database. Due to data availability, the study focused on forty-eight (48) Sub-Saharan African countries over a nineteen (19) year period. Due to its independence in 2011 and a paucity of data, South Sudan was removed from the analysis.

The model used in the study was designed to align with the stated goal:

$GDP_t = f\,(IQ + HCD)$ …….. (1)

Where:

$IQ = f\,(VAE + PVE + GEE + RQE + RLE + CCE)$ and $HCD = f\,(GEED + GHED + TLE + TLR)$

The study derives and summarizes its econometrics equation from the above equations as to achieve the set-out objective, which is formed as follows:

$GDP_t=a_0+a_1VAE_t+a_2PVE_t+a_3GEE_t+a_4RQE_t+a_5RLE_t+a_6CCE_t+a_7GEED_t+a_8GHED_t+a_9TLE_t+a_{10}TLR_t+e$ ……. (2)

This was based on the study conducted by Epo et al. (2020), who investigate the relationship between institutional quality and GDP, in a separate study, Nwani (2021) assessed the human capital investment on the GDP of some countries in Africa.

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## RESULTS AND DISCUSSION

All the extracted data was subjected to econometrics tools, both pre-estimation and estimation tests. Pre-estimation for all the variables is Descriptive, unit root and matrix correlation test) for proper screening of the obtained data and were subjected to Fixed effect regression analysis.

**Table 1.** Descriptive Test

| Variables | Description | Source | Mean | Std. Dev. | Min. | Max |
|---|---|---|---|---|---|---|
| GDP | Gross Domestic Product | WDI | 4.036251 | 5.096539 | -36.39198 | 7.99873 |
| GEE | Government Education Expenditure | WDI | 3.976218 | 2.051267 | 0.00 | 13.21957 |
| GHE | Government Health Expenditure | WDI | 1.732889 | 1.183725 | 0.00 | 6.092366 |
| LER | Life Expectancy Rate | WDI | 59.11631 | 6.480045 | 42.125 | 77.23659 |
| LTR | Literacy Rate | WDI | 63.18994 | 19.66107 | 0.00 | 96.2 |
| RGQ | Regulatory Quality | WDI | -.7278259 | .6358141 | -2.547726 | 1.196947 |
| COC | Control of Corruption | WDI | -.6417318 | .645153 | -1.848734 | 1.633352 |
| GVE | Government Effectiveness | WDI | -.7996504 | .6356619 | -2.445096 | 1.16092 |
| VAA | Voice and Accountability | WDI | -.6073608 | .7589177 | -2.226054 | .9741873 |
| ROL | Role of Law | WDI | -.72247 | .65433 | -2.590877 | 1.023956 |
| PAV | Political Stability and Absence of Violence | WDI | -.5720755 | .9257839 | -3.312951 | 1.201015 |

According to Zhang et al. (2021), Descriptive statistics are vital in research, providing a concise and brief overview of key aspects within a series, aiding in data validation, identifying outliers, missing values, and transforming complex data into visually comprehensible forms. These statistics enable data exploration, validation, presentation, and preliminary analysis, laying the foundation for informed decision-making and comprehensive investigations. Choi et al. (2020), descriptive statistics it is an important test in social and management research. For this study, data was collected from Sub-Saharan African countries spanning from 2002 to 2021, resulting in a total of 940 observations. The data encompasses numerous factors such as GDP, institutional characteristics, and the Human Capital Development Concentration Index. The used data was sourced from (WDI).

**Table 2.** Panel Unit root tests.

| Variables | *Augmented Dickey Fuller (ADF) test* | | | *Phillips–Perron (PP)* test. | | |
|---|---|---|---|---|---|---|
| | t- Statistics | P- Value | Order of Integration | t- Statistics | P- Value | Order of Integration |
| GDP | -12.87997 | 0.0000 | 1(0) | -22.47059 | 0.0000 | 1(0) |
| GEE | -5.514522 | 0.0000 | 1(0) | -5.706737 | 0.0000 | 1(0) |
| GHE | -5.771265 | 0.0000 | 1(0) | -5.594136 | 0.0000 | 1(0) |
| LER | -5.752475 | 0.0000 | 1(0) | -6.956493 | 0.0000 | 1(0) |
| LTR | -6.360607 | 0.0000 | 1(0) | -6.078947 | 0.0000 | 1(0) |
| RGQ | -4.197478 | 0.0000 | 1(0) | -5.627266 | 0.0000 | 1(0) |
| COC | -5.422200 | 0.0000 | 1(0) | -5.786664 | 0.0000 | 1(0) |
| GVE | -5.376661 | 0.0000 | 1(0) | -5.611036 | 0.0000 | 1(0) |

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| | | | | | | |
|---|---|---|---|---|---|---|
| VAA | -3.978283 | 0.0016 | 1(0) | -5.558372 | 0.0000 | 1(0) |
| ROL | -4.296040 | 0.0005 | 1(0) | -5.677783 | 0.0000 | 1(0) |
| PAV | -6.531142 | 0.0000 | 1(0) | -6.597780 | 0.0000 | 1(0) |

Table 3.2 displayed the results of the panel unit root test for both the ADF and Phillips-Perron unit root tests, which were performed on all variables to determine the stationarity of the data used. The results reveal that the variables were stationarity at the level, indicating that all the data can be used for further testing and analysis. Panel unit root tests are critical for effective statistical analysis in research, especially when evaluating time series data over numerous cross-sectional units. They detect common stochastic trends across units, account for potential heterogeneity, and increase estimating efficiency. Ignoring cross-sectional dependence might result in misleading results and erroneous inferences. Panel unit root tests increase robustness, improve estimation validity and efficiency, and provide a solid platform for useful statistical analysis (Affoh et al., 2022).

Tabel 3. **Correlation Matrix.**

| **Variables** | **GDP** | **GEE** | **GHE** | **LER** | **LTR** | **RGQ** | **COC** | **GVE** | **VAA** | **ROL** | **PAV** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP | 1.0000 | | | | | | | | | | |
| GEE | 0.4500 | 1.0000 | | | | | | | | | |
| GHE | 0.3573 | 0.5480 | 1.0000 | | | | | | | | |
| LER | 0.4582 | 0.0605 | 0.0419 | 1.0000 | | | | | | | |
| LTR | -0.0587 | -0.0106 | 0.3983 | 0.2774 | 1.0000 | | | | | | |
| RGQ | 0.3642 | 0.3329 | 0.3371 | 0.4893 | 0.5666 | 1.0000 | | | | | |
| COC | -0.0108 | -0.0043 | 0.4686 | 0.4984 | 0.4236 | 0.2372 | 1.0000 | | | | |
| GVE | -0.0313 | 0.0081 | 0.4385 | 0.4206 | 0.4221 | 0.2842 | 0.6945 | 1.0000 | | | |
| VAA | 0.0179 | 0.0134 | 0.3457 | 0.3265 | 0.3322 | 0.1670 | 0.5638 | 0.5840 | 1.0000 | | |
| ROL | -0.0152 | 0.0003 | 0.3961 | 0.2808 | 0.4035 | 0.2740 | 0.6472 | 0.6414 | 0.6930 | 1.0000 | |
| PAV | -0.0152 | 0.0002 | 0.3961 | 0.2808 | 0.4035 | 0.2740 | 0.6472 | 0.6414 | 0.6953 | 0.5813 | 1.0000 |

Correlation tests, according to Li et al. (2022), are critical in research for assessing numerous variables and identifying their strength and direction. They provide information on potential, trends, and patterns, which aids in the feature process and identifies duplicated or highly linked variables. They also place a premium on multicollinearity regression models, which uncover situations in which independent variables are highly correlated, hence improving the accuracy and validity of study findings.

Table 3.3 shows the link between the variables that were recorded. This test is used to determine the link between two or more variables. The outcomes range from -1 to +1. A correlation value of +1 shows a strong positive association between the variables, whereas a score of -1 suggests a significant negative relationship between the variables. Other independent factors have a positive and negative influence on some of the reported results. As the second requirement of the correlation test, all variables are also in diagonal form. Given all of this, all the variables are completely suitable for further statistical testing.

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**Table 4**. . Fixed-effects Regression Result

| GDP | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. Interval] |
|---|---|---|---|---|---|
| GEE | -.2350512 | .1046713 | -2.25 | 0.025 | -.4404763 -.0296261 |
| GHE | -.381998 | .1807104 | -2.11 | 0.035 | -.7366556 -.0273404 |
| LER | -.078602 | .0368954 | -2.13 | 0.033 | -.151012 -.0061921 |
| LTR | .0031305 | .0094535 | 0.33 | 0.741 | -.0154226 .0216836 |
| RGQ | -.6215716 | .6647469 | -0.94 | 0.350 | -1.926187 .6830436 |
| COC | .4513981 | .5881716 | 0.77 | 0.443 | -.7029324 1.605729 |
| GVE | 1.011122 | .7815521 | 1.29 | 0.196 | -.5227317 2.544976 |
| VAA | .3321409 | .3605771 | 0.92 | 0.357 | -.3755185 1.0398 |
| ROL | -.0737394 | .8806328 | -0.08 | 0.933 | -1.802047 1.654568 |
| PAV | -.0460121 | .2873927 | -0.16 | 0.873 | -.6100416 .5180175 |

$R^2$ within = 0.8601 Prob > F = 0.0706

Fixed effect regression, according to Chen et al. (2021), is crucial when dealing with panel data because it allows researchers to control for time-invariant unobserved factors that may influence the dependent variable. This control is required to achieve accurate estimates of the impacts of variables of interest while minimizing bias caused by omitted variables. Furthermore, fixed effect regression is especially useful in situations with large cross-sectional fluctuations. According to the Hausman test, the fixed effect regression is the suitable test to consider and conduct for this research. The fixed effects regression test findings show that GEE (-0.2350512), GHE (-0.381998), and LER (-0.78602) have P-values of 0.025, 0.035, and 0.033, respectively. RGQ (-0.6215716), ROL (-0.0737394), and PAV (-0.0460121) have P-values of 0.350, 0.933, and 0.873, respectively. Literacy rate (0.0031305), corruption control (0.4513981), government effectiveness (1.011122), and voice and accountability (0.3321409), on the other hand, had P-values of 0.741, 0.443, 0.196, and 0.357, respectively.

**Discussion**

The data was examined in accordance with the study's purpose, and the above conclusion reveals that government spending on health (GHE), education (GEE), and life expectancy rate (LER) have a significant and negative influence on economic growth (GDP). This means that the effect of those investments has not been felt, and that this influence has been influenced by factors such as corruption or underfunding, which is consistent with the study of (Samuel & Lawrence, 2021). In their study of the relationship between government spending and economic growth in Nigeria, they discovered that recurring expenditures on agriculture, health, and education have a short-run impact on economic growth. It was also shown that government capital spending on social services has a considerable negative impact on GDP. Government spending on education has a substantial negative association with GDP (Awan and Naseem 2018).

Corroborate the findings of Balaj and Lani (2017), who evaluated the impact of spending by government on human capital and Kosovo's economic growth between 2000 and 2016. According to their findings, none of the various categories of government spending in Kosovo had a significant impact on the nation's economic progress over this time. This study, like Shobowale et al. (2022), investigated the impact of higher education enrolment, output, and the associated efficiency gap on GDP in Sub-Saharan African countries. Their findings show that human development has no statistically significant effect on economic growth in the twenty-one SSA countries. Ekperiware et al. (2017) explored the dynamic relationship between human

capital formation (education and health) and economic growth in Nigeria. Human capital has had a detrimental effect on the Nigerian economy, according to the study.

Regulatory Governance Quality (RGQ), Rule of Law (ROL), and Political and Administrative Stability (PAV) were also identified as measures of institutional quality in this study. On the GDP, all indicators were negative. As a result, the negative impact of these variables on GDP is minimal. This finding is consistent with the findings of Haidar et al. (2021), who discovered that political stability had a detrimental impact on nonrenewable energy sources, one of the drivers of economic growth. Similarly, Ogbuabor et al. (2020) found a clear negative relationship between IQ and GDP in West Africa.

Finally, in SSA nations, various variables such as Literacy Rate (LTR), Corruption Control (COC), Government Effectiveness (GVE), and Voice and Accountability (VAA) have a favorable impact on GDP. The findings were in two forms: certain obstacles were related with human capital development, while institutional quality was also identified as a significant barrier between government expenditure on both education and health sectors in the SSA region. The region has been experiencing reduced transparency, corruption, and violence difficulties, which have hampered the region's economic success from various angles. Several studies backed up this claim.

The findings did not sound shaky since several studies agreed with the research outcome, i.e., the finding is compatible with many investigations. Examples of such works are as follows: For several years, Aibai et al. (2019) conducted a study to evaluate whether institutional quality is a primary driver of economic growth in developing and emerging economies. Corruption, according to Hodge et al. (2011), has a detrimental impact on economic growth because it inhibits the accumulation of physical capital. Poor institutions, according to the study, impede economic advancement.

According to Smaoui and Nechi (2017) and De Vita et al. (2018), greater government spending is associated with issues such as political corruption, an overburdened government, and waste of public resources. These difficulties eventually lead to slower economic growth. This means that the quality of institutions in some of the African countries is relatively low, which reduces the advantages of government spending. In conclusion, empirical data demonstrates that government expenditure can only produce positive economic effects if it is done inside a more effective institutional framework.

Gankou et al. (2016) studied the "financial revolving door" theory in Cameroon from 1970 to 2010. They discovered that foreign debt, corruption, and oil income all lead to capital flight. The study did, however, show that political and institutional instability can minimize capital flight. This is consistent with the conclusions of another study conducted by Geda and Yimer (2016), which sought to calculate the overall amount of capital flight in Ethiopia from 1970 to 2012 and to identify the factors driving it. Their research found that political and economic governance can help to reduce capital flight. Asongu and Nwachukwu (2017), who investigated the impact of governance on capital flight, back up these findings. Their research discovered that weak governance stifles economic progress and that corruption control has a negative influence. Economy and institutional quality (IQ) have no link, showing that IQ has a statistically minor impact on economic growth (Ntow-Gyamfi et al., 2020; Hamzah et al., 2019; Baklouti & Boujelbene, 2020). According to Adzima and Baita (2019), all intelligence has a

negative impact on economic progress. Similarly, Abubakar (2020) discovered that some IQ traits, such as voice and accountability, have a positive impact on GDP.

Furthermore, Nguyen et al. (2018) discovered a negative relationship between openness and GDP growth in SSA. Corruption and a lack of rule of law are to blame. The IQ confirms the unfavorable link between FDI and economic growth. The SSA region, according to Fagbadebo (2007), lags behind other regions in terms of preserving property rights (PRs) and avoiding corruption. This is due to the country's low levels of political cohesion and adherence to the rule of law, which are exacerbated by periodic political crises and difficulty in obtaining justice through the court system.

The study revealed that institutional quality has a detrimental effect on economic growth, according to Akinlo (2023), a researcher who investigated the connections of institutional quality and economic growth in nations in Sub-Saharan Africa. Furthermore, Ogbuabor et al. (2020) discovered that institutional quality specifically in West Africa has a detrimental effect on economic growth. Ajide and Aderemi (2014) went on to claim that one of the challenges preventing economic growth in Africa is insufficient governance. Data from Acheampong et al. (2021) and Soko et al. (2023) are sufficient to support the contention that low institutional quality and variability have an impact on SSA's economic performance. According to a number of studies, including those by Akinlo and Okunlola (2021) and Yinusa et al. (2022), political unrest and other issues with institutional quality, as well as corruption, have all negatively impacted the region's economy.

To summarize, Sub-Saharan African economies face a variety of obstacles, including poor institutions and limited human capital development. Recent research, which was used to support this analysis, shed light on the harmful impact of these challenges on regional economic growth. Corruption, poor administration, and a lack of property rights enforcement impair investor trust and discourage both local and foreign investment (Acemoglu & Robinson, 2019). This creates a risky business climate, stifling economic growth. Inadequate human capital development, as seen by limited access to excellent education and healthcare, further limits workforce productivity and innovative ability (Zaika and Gridin 2020).

Low levels of human capital investment lead to persistently high rates of youth unemployment and impede the region's potential to capitalize on its population dividend (Brixiová et al., 2020). The interaction with poor institutional quality and inadequate human capital development exacerbates economic issues. Weak institutional quality impedes effective resource allocation, and a lack of human capital inhibits the SSA region's adoption of total productivity. According to Zaborovskaia et al. (2020), investments in education and healthcare are needed to harness the region's human capital potential. Without these investments, Sub-Saharan Africa's economic growth is stagnant, economic diversity is limited, and chances for poverty reduction are constrained (Tilt et al. 2021).

## CONCLUSION

This study examines the impact of institutional quality and human capital development on the economies of Sub-Saharan Africa. The analysis covered (19) years (2002-2021) and forty-seven nations in the region, with the exception of South Sudan, which was excluded owing to insufficient data, as the country got independence (2011) and the data to be collected were insufficient for the study. Eleven variables (including dependent and independent variables)

were used, with GDP serving as the explanatory variable. Furthermore, the explanatory variables include all human capital, such as government spending on both education and health, life expectancy, government health spending, and literacy rate. Control of corruption, regulatory quality, government effectiveness, rule of law, voice and accountability, absence of violence, and political stability are all examined as institutional quality indicators.

All of these indicators are critical and sufficient for evaluating the overall impact of institution quality and human capital development in economic growth. The study filled gaps in previous research on intuitional quality, human capital development, and economic growth in the SSA region. All data utilized in this study was collected from the WBDB, 2023, and was analyzed using econometric software, Stata and E-views. Overall, the data imply that these variables have a statistically minor impact on economic growth in Sub-Saharan African countries. The finding is consistent with the findings of Ouedraogo et al. (2022), who indicated that Africa lacks institutional quality and human capital. In light of the findings, and to help enhance the economies of Sub-Saharan African countries.

According to the study, the governments of these countries should propose and implement significant measures to enhance the health and educational systems. The expected policy involves improving the quality of both health and education, ensuring enough investment in both sectors, and making access to both health and education systems as simple as possible.

This will help to grow human capital while also increasing the overall well-being and productivity of the region's inhabitants. To combat persistent corruption and reduce insecurity, each government should create strong monitoring and evaluation procedures. Furthermore, the governments of each country should invest in expanding prospects for recent graduates. More room for the skilled and knowledge of today's and tomorrow's generation would also rocket growth and development in SSA countries. The application of these measures has the potential to assist Sub-Saharan African countries in fostering economic development in the near future.

Addressing the complex issues posed by weak institutions and inadequate human capital development in Sub-Saharan African countries necessitates a broad, coordinated effort. Policymakers, stakeholders, and international organizations must collaborate to bring about beneficial change through a multifaceted strategy.

A critical step in overcoming the stated issues is to execute significant institutional reforms aimed at strengthening governance, reducing corruption, and improving the rule of law. Awadhi et al. (2019) emphasize the importance of transparent and accountable institutions in generating investor trust and fostering a favorable economic climate. Combating corruption and improving regulatory efficiency can make a significant contribution to the creation of thankful economic development.

Concurrently, investing in human capital development is critical. Governments should emphasize education and healthcare by investing adequate funding to ensure access and quality. The prerequisite of equipping workers with the skills and knowledge required for creativity and productivity, as advocated by Eneogu et al. (2020). Increasing access to vocational training, upskilling programs, and healthcare services by various governments in each country in order to improve the overall work force capacity.

Partnerships among governments in the affected region, international organizations, and the private sector can also help to accelerate this process. Collaborative projects focusing on capacity building, knowledge transfer, and technology adoption can also help to improve

institutional quality and human capital development. These collaborations will make it easier for the SSA region to share best practices, resources, and knowledge. Long-term success is dependent on an ongoing commitment to policy stability. All governments should also prioritize and implement initiatives that improve institutional quality and human capital development on a constant basis. To assist the region in achieving economic prosperity.

This study indicates that future research should focus on individual nations or the Economic Community of West African States (ECOWAS) region in West Africa, which consists of 15 countries, using longer time series data and develop robust both human capital and institutional indicators.

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