

# Institutions, Investment and Economic Growth: Evidence from Sub-Saharan Africa

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**Abstract:** Sub Saharan African countries experience low private investment compared to other developing countries in world. For instance, private investment in the region averaged 15% of GDP from 2010 to 2016, as compared to 22%, 18% and 17% for developing countries in Asia, Europe and Latin America respectively. This low investment level constrained the region's ability to grow and improve social outcomes such as; increase in the real wages and poverty reduction. Low quality institutions could explain this phenomenon. Therefore, this study examined the effect of institutions on investment and economic growth of 37 SSA countries from 1996 to 2017 using dynamic panel data model. The data were retrieved from Worldwide Governance Indicators, World Development Indicators and the Chinn-Ito index. System Generalised Method of Moments was used to estimate the result. The key findings generated by the study confirmed that these measures of institutional variables and there interaction with investment yield a positive and statistically significant result. Indicating that strengthening the quality of these institutions could positively affect investment and economic growth of the region. For instance, unit increase in controlling corruption increases investment by 1.4%. Furthermore, there is evidence showing financial development slows investment growth, which can be attributed to the weak institutional arrangements, as the coefficient of financial development is negative and statistically significant. The study recommends that SSA countries should pay greater attention on institutional reforms particularly; control of corruption and political stability to drive a meaningful growth and development in the region.

Key words: institutional factors, economic growth, investment, SSA, political stability, control of corruption, rule of law

#### I. Introduction

During the past three decades, the average economic growth in Sub-Saharan Africa was not impressive. Growth has been dwindling from an average of 1.72 percent in the 1980s to 5.3 percent during the last decade, which is quite below the average growth of the other regions like SAS countries that achieved an average growth rate of 5 and 6.51 percent recorded within same time periods<sup>1</sup>.Perhaps, due to some structural reforms that took place in the LDCs between 1980sand 1990s, the average growth in the countries increased from 1.77 in the 1980s to 6.38 percent in 2000s.

Private investment increases when real GDP growth is high via accelerator effect (IMF, 2005). However, in SSA private investment is also low if compared with other countries with similar level of economic development. In the regional economic outlook report, IMF (2018)noted that private investment across SSA is on average, 2 percent of GDP lower than in other developing countries. It averaged 15 percent of GDP during the 2010 to 2016, as compared to 22 percent for developing countries in Asia, 18 percent in Europe, 17 percent in Latin America and 16 percent in the Middle East(IMF, 2018). This low level of private investment constrained the region's ability to improve social outcomes such as increase in real wages and household's income consequently leading to a negative relationship between private investment and poverty in the region.

Can weak institutions explain these phenomena? If yes, which of the institutional variables are growth enhancing, and which are detrimental? This study addressed the issue of low growth and investment levels in SSA with special emphasis on the role of institutional factors such as political stability, control of corruption and rule of law. A growing literature has documented the importance of institutions that protect property rights for growth in the very long run (Acemoglu, Johnson, & Robinson, 2001; Engerman & Sokoloff, 1997; Hall & Jones, 1999). Sub-Saharan African countries on average, have been characterised by poor quality governance institutions (Ahlerup, Baskaran, & Bigsten, 2016). This shortcoming is particularly related to democratic institutions like; political stability, control of corruption, government effectiveness, rule of law and order, freedom of the press and administrative quality. Sub -Saharan African countries were left behind their counterparts in the other regions because of the poor

<sup>&</sup>lt;sup>1</sup>These figures were calculated by the Author from World Bank Development indicators available at <u>http://datatopics.worldbank.org/world-development-indicators/</u>



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governance institutions. If they were to pay attention to strengthening the institutional quality to global average, the region's growth will be enhanced by 1-2 percentage points as observed by (Hammadi, Mills, Sobrinho, Thakoor, & Velloso, 2019).

Poor institutions weaken economic performance through different channels. These include: higher tax evasion, lower tax revenue and consequently increases Central Banks' financing government deficits; it also leads to deficiency in the composition and quality of government spending; creates poor lending practices and weak financial market supervision; it lowers investment and distortion to economic environment(IMF, 2016).

A sound institutional environment is capable in providing a positive investment climate that encourages economic agents, both domestic and foreign firms, to invest more in projects with high added value and use, judiciously, the proceeds earned from foreign donors. Whereas, institutions of poor qualities increase uncertainty, unpredictability, instability, corruption and transaction cost. Where this situation prevails, investment in tangible and non-tangible assets, especially by private entities, is discouraged because of increasing uncertainty. Hence, economic growth becomes vulnerable since growth mechanisms are blocked, and all positive potentials of a country are limited. This points to the reason why weak institutions and corrupt practices have been identified as the potential factors that hinder economic growth and investment expansion in SSA(Collier & Gunning, 1999; Kilishi, Mobolaji, Yaru, & Yakubu, 2013; Ndulu & O'Connell, 1999).

No much empirical studies were done to analyse the effects of institutional factors on private investment and economic growth in SSA. The few studies that attempt to examine the effect of institutions on economic growth in SSA focused on aggregate index of institutional factors and other specific factors like corruption, property rights and information sharing<sup>2</sup>, ignoring the role play by other factors, such as political stability, government effectiveness and the impact they have on growth of the region. This study intends to fill this gap, specifically by examining the impact that other institutional factors have on economic growth, aside corruption and property right. Secondly, it also examined the effect that these institutional factors have on investment. Thirdly, it examined the effect of the institutional factors on the productivity of investment.

As part of the recognition of the channels through which institutional factors affect growth and investment, recent and earlier studies have also acknowledged the importance of economic policies in explaining the cross-country economic achievements. The extended versions of the neoclassical model for instance, relaxes the assumption of exogenous factors such as savings and capital formation, to allow for policies to affect growth both in the short and medium-term through impact on savings and investment. In fact, some of these models allow the level of efficiency in the economy to be related to policy and institutional settings, reinforcing the notion that policy can change the level of the long-run growth path. For instance, (Aysan, Nabli, & Véganzonès-Varoudakis, 2007; Zouhaier, 2012)both examined the effect governance institutions on economic growth and found a significant relationship. While Aysan et al. (2007) used a simultaneous equation model of private investment and various form of governance institutions to show how economic policies concurrently explained both the variables, Zouhaier (2012)used a dynamic panel model.

In other to achieve the above stated objectives, the study is organised as follows. Section two discusses the various institutional factors and their relationship with economic and investment growth. Section three presents the role of other determinants of private investment that will be taken into account in the empirical analysis and point out how these factors influence the growth of SSA countries. Section four discussed the characteristics of the data used for estimation. Section five presents the econometric models tested and the results of the estimations. Lastly, section six concludes and makes recommendation based on the findings.

#### II. Relationship Between Governance Institutions, Investment and Economic Growth

Governance institutions are essential for economic growth of countries. North (1991) viewed governance institutions as humanly devised constraints that shape political, economic, and social interaction. They consist of informal constraints such as: sanctions, taboos, customs, traditions, and codes of conduct and formal rules like (constitutions, laws, property rights). Throughout history, institutions have been designed by human beings to create order and reduce uncertainty in exchange. Together with the standard constraints of economics, they define the choice set and therefore determine transaction and production costs and hence the profitability and feasibility of engaging in economic activity.

However the question remains as to which of the institutional factor(s) are investment friendly and which are detrimental for investment and economic growth. Another important issue relates to degree of the effect of interaction among these factors. As it would be shown later, many empirical studies have emerged in an attempted to provide additional support to the controversial link between institutional factors and economic growth on one hand, and on the other hand with investment. Findings from these

<sup>&</sup>lt;sup>2</sup>For example, McDonald and Schumacher (2007) are among the few studies that examined the role of creditor right and information sharing in explaining the reasons why financial markets in Sub-Saharan Africa remained shallow despite attempt made by governments within the region in liberalizing their financial sector.



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studies show a mixed result of the link between economic growth and good institutional qualities. It is therefore pertinent to examine these institutional factors and how they affect growth and investment, both within and outside African region.

Although, various authors (Fosu, 1992; Kilishi et al, 2013) have aggregated certain indicators to capture the common features of the existing data, this study utilises the classification offered by(Kaufmann, Kraay, & Mastruzzi, 2004). Based on their categorisation, governance institutions are broadly grouped into six. These are; Political Stability and Absence of Violence, Control of Corruption, Rule of Law, Regulatory Quality, Government Effectiveness and Voice and Accountability. All these indicators, together or otherwise, give a clear picture of good governance performance of a nation. Since these indices are available virtually for most of the Sub-Saharan Africa, it is easy to make comparison of these indicators across SSA countries.

Despite the fact that the role of governance institutions in economic growth through market-enhancing and market-complementing channels has well been documented in the literature (Acemoglu et al., 2001; Acemoglu & Robinson, 2010; Barro, 1998; Knack & Keefer, 1995), evidences from other empirical work are not always in support of these significant importance of governance institution as requisite for economic growth (Kurtz & Schrank, 2007; Quibria, 2006). This being part of the motivation to study each of these indicators in relation to their impact on growth and investment of SSA.

#### 2.1 Political Stability

Political stability and absence of violence captures the perception of the likelihood that the government will be destabilised or overthrown by unconstitutional and violence means, including politically motivated violence and terrorism (Kaufmann et al., 2004). The index, based on WGI comprises of four variables: internal conflict, external conflict, government stability and ethnic tension. Absence of political stability and violence serve to reduce the availability of factors of production. Investment in physical capital will probably be discouraged as risk of capital loss will tend to rise with political instability. Primarily because, political and economic rules governing investment may likely to change with political regimes, increasing the level of uncertainty in the economy and this deters the risk-averse firms to undertake any profitable investment decision.

Studies that uses the index of political uncertainties in their analysis show that government institutions that are associated with political instability deteriorate aggregate investment and growth potentials. Fosu (1992) constructed a sample of 31 SSA countries over the period 1956 to 1985 classifying them into low and high political instability countries to examine the effect on economic growth. By employing a multiple regression based on augmented production-function framework observed that political instability, on average, has a deleterious impact on economic growth. Controlling for labour, capital and export, Fosu (1992) estimated that the direct effect of political instability in SSA countries is 1.1 percentage point reduction on annual GDP growth rate between 1956 to 1985 on average. Although, this evidence is only suggestive because of low statistical significance.

The key risk factor that can hinders the growth and development of any region is its stability (IMF, 2013). Therefore, the success of any development strategy in SSA needs to focus on stability as well as good governance. Many countries in the SSA experiences conflicts and crises in one way or the other. According to World Bank (2011), one-quarter of African countries suffers from the effect of armed conflict, while at the same time 20 percent of Africans live in an area that is prone to conflict and crises. The risk of conflict is high, and the region is exposed to humanitarian crises, terrorism and ethnic and criminal crises. This means that economic activities in the region are largely influenced by these conflicts (Ouedraogo & Kouaman, 2014)

Alesina, Özler, Roubini, and Swagel (1996)is one of the recent studies that uses a sample of 113 countries to examine the relationship between political instability and per capita GDP growth for the period 1950 to 1983. The main result of the study reveals that economic growth slows in most of the countries, and during time period with high possibilities of political instability. Meaning that political instability reduces economic growth. the result, off-course, is strong for the case of unconstitutional government changes such as coup, however, it does not establish the channel linking political instability and economic growth in the Sub-Saharan Africa show that political instability decreases economic growth through indirect channel by decreasing capital accumulation. The study further indicates that political instability and economic growth are jointly endogenous. Slow economic growth causes political instability which in turn leads to further economic stagnation.

Early studies that considered political instability as one of the determinants of investment is McGowan and Johnson (1984). The study has also observed a negative correlation between economic growth and political instability in the Sub-Saharan Africa. Although the study did not report any significant test, it thus, analysed the relationship between political instability and growth from the context of political science. Hence, no control of the role of economic factors that influence economic growth was accounted for. Barro (1991) in a cross-country study also argued that measures of political instability are inversely related to growth and investment, arguing further that the relation could be as a result of the adverse effect of political instability on property rights and the linkage between property rights and private investment.



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#### 2.2 Control of Corruption

Based on World Governance Indicators of Kaufmann et al. (2004), corruption is considered as the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as captures of the state by elites and private interest. Good governance is expected to have control over corruption, as widespread of it pose challenge to investment and economic growth of a nation. Although, there are empirical studies have examined the effect of corruption on investment and economic growth, however, results from these studies suggest that the impact that corruption has on investment and economic growth remains unclear. On one hand, corruption raises cost of doing business, heightens uncertainties and hence, deter investment and growth(Campos, Lien, & Pradhan, 1999; Shleifer & Vishny, 1993; Wei, 1997). This is because, if capital is partially or completely irreversible, greater uncertainty about future returns on investment increases the option of waiting to undertake an irreversible investment (Dixit & Pindyck, 1994).

On the other hand, corruption creates opportunities for private illicit gains to firms. In this case its effect neutralises. This usually occur when firms pay cash for contracts. For instance in many developing countries firms pay bribe to; win lucrative government contracts, gain access to raw material at subsidised rate, obtain credit below market interest rate, acquired scarce foreign exchange rate, or collude with tax collectors to evade tax payment (Asiedu & Freeman, 2009). Under these prevailing situations, firms that gain from corruption may expand on their investment activities and as such investment increases (Hellman, Jones, & Kaufmann, 2002). When analysing the effect of corruption on investment among firms from Latin America, SSA and Transition economies, Asiedu and Freeman (2009) found that corruption has a negative and significant effect on firm investment only in the transition economies. But in Latin America and SSA, there was no significant impact.

On a different note, Campos et al. (1999)argued that it is not only the level of corruption that affect investment, but the effect depends on predictability. Corruption regime that are more predictable by economic agents have less negative impact on investment as compared to unpredictable corruption. For Kilishi et al. (2013), individual indicators of institutional factors were not found significant with respect to SSA countries, only when interacted with other indicators. Five among the variables tested were found to have significant impact of which control of corruption is not among and this is similar to what Cieślik and Goczek (2018)obtained in their study. Control of corruption tends to be significant only on interaction with other macroeconomic policies like trade openness. From this, it is obvious that the effect of corruption on investment and economic growth is unclear. Effect of corruption on investment can either be positive, negative or even neutral, this makes it an empirical issue.

#### 2.3 Rule of Law

Rule of law captures the perception about the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts as well as the likelihood of crime and violence. Kilishi et al. (2013) is among the most recent study that takes rule of law into account to examine the growth performance of SSA countries. The study argued that among the six components of governance institutional factors observed, rule of law and regulatory quality are the most important determinants of growth in the region. Based on their findings, growth in Africa can be enhanced if authorities pay much attention in improving the qualities of institutions especially rule of law and regulatory quality. They further stress that pursuing the policies together is more important than taking them in isolation as the interaction term shows high positive correlation than for single variable. However, Kilishi et al. (2013) did not account the effect of rule of law on investment processes of SSA countries. The emphasis made in the study is on the growth performance of the countries.

Typical studies that account for the impact of rule of law, particularly property rights, on investment is (Saleh, 2004). He argued that the way property rights are defined and enforced affects not only the efficiency of resources use, the level and types of investments made, but also the allocation of risk and the distribution of income. Svensson (1998) shows that the relationship between property rights and economic growth stems from the presence of political instability. Under this condition, government do refrain from legal reforms that strengthen property rights and lack of strong property rights protection leads to lower economic growth in LDCs.

#### 2.4 Regulatory Quality

Regulatory quality as one of the governance indicators in Kaufmann et al. (2004) index captures the ability of government to formulate and implement sound policies and regulations that permits and promote private sector development. Regulatory quality or investment profile as it is sometimes referred to, focuses on the policies themselves and it includes measures of the incidence of market-unfriendly policies such as price control or inadequate bank supervision and perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and domestic business development. It concerns much in assessing factors affecting the risk to investment that are not covered by other political, economic and financial risk components. Based on WGI, it



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consists of three subcomponents including, Contract Viability, Profits expatriation and Payment Delays. Few studies have addressed the impact of regulatory quality on investment.

Issever Grochová (2015) examined the relationship between regulatory quality and economic performance of 166 countries. Although, the study focused on environmentally related issues, it does observe that regulatory quality is important, as average shock in it reduces the effect of pollution in the sample countries. Meaning that reinforcement of regulatory quality leads to enhancement of environmental quality and growth of GDP per capita as well. Furthermore, Ouedraogo and Kouaman (2014) study the causal relationship between business environment and economic development in SSA using the World Bank Doing Business indicators along with other macroeconomic indicators for the period between 2006 to 2011. They discovered that poor quality regulation that are unfriendly to investment affect firms' investment, while good investment climates improve the growth of private investment in the region. Similarly, Aysan et al. (2007) also observed that improving investment profile by one unit would increase private investment in MENA countries by approximately 0.2 and 0.3 percent of GDP during the 1980s and 1990s respectively. This shows that institutional factors matter for the regional growth.

#### 2.5 Government Effectiveness

Governance effectiveness measures the quality of public service, the quality of the civil service and its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to its stated policies. Basically, countries are evaluated based on the governments' ability to coordinate conflicting objectives into coherent policies, the competence of their civil and public servants, policies consistencies and the extent to which government commitments are honoured by new governments. Theoretically, Countries where government effectiveness is ranked high, are expected to achieve higher levels of economic growth through obtaining better credit ratings and attracting more investment, offering higher quality public services and encouraging higher levels of human capital accumulation, putting foreign aid resources to better use, accelerating technological innovation, and increasing the productivity of government spending as opposed to countries with low ranking in terms of government effectiveness.

Efficiency in the delivery of public services also has a direct impact on poverty. On average, countries with effective governments tend to have better educational systems and more efficient health care also. There is evidence that countries with independent, meritocratic bureaucracies do a better job of vaccinating children, protecting the most vulnerable members of society, reducing child mortality, and curbing environmental degradation (Al Bassam, 2013; Issever Grochová, 2015; Lim et al., 2012). Countries with a meritocratic civil service also tend to have lower levels of corruption(Brewer, Choi, & Walker, 2007). The effect of this betterment society can be reflected into a quality workforce and hence boost productivity and economic growth. In a panel of 81 countries Alam, Kiterage, and Bizuayehu (2017)by employing a GMM technique to examine the impact of government effectiveness on economic growth. the study reveals that government effectiveness has a significant and positive effect on economic growth. they also found evidence of asymmetric relationship between government effectiveness and economic growth.

#### 2.6 Voice and Accountability

According WGI, voice and accountability measures the extent to which citizens are able to participate in selecting their leaders as well as having freedom of expression, freedom of association, and a free media. If citizens perceived that their interests are properly represented in the political processes and they also understand that they would receive an adequate provision of public goods(strict adherence to voice and accountability) their trust in the government and their identification with the state increases. Hence, their willingness to invest and contribute more to economic growth also increases. Ideally, the citizens' voice has the ability to control the politicians' discretionary power. An effective voice can help limit the abuse of political power by selfish politicians and allows citizens to express their preferences in the political process (Torgler, Schneider, & Macintyre, 2011) and freely partake in profitable investment.

One way a government can create or maintain compliance is to provide reassurance by giving citizens an effective voice<sup>3</sup>. A government that pre-commits itself to providing citizens a voice declares self-imposed restraints on its own power and thus sends a signal that citizens are seen as responsible persons. In turn, this signals that citizens are not perceived as ignorant, is an indication of trust that could potentially create or maintain a certain social capital stock, and the government demonstrates that citizens' preferences are taken into account during the political process. In other words, the social contract between citizens and the government is based on trust and this trust in turn will add to the moral costs of behaving illegally.

Voice and accountability also produce a kind of procedural utility as the opportunity set increases. It leads to a more favourable economic outcome as opposed to the situation where no such possibilities are expected. If voice and accountability is deficient in a

<sup>&</sup>lt;sup>3</sup>See Levi, 1988 for further reading.



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country, citizens might feel less satisfied with the system as well as feeling powerless, and thus might be less inclined to comply (Alm, Jackson, & McKee, 1993). Rules developed through active involvement of the citizens enhances rule obedience and the willingness to cooperate and act in line with those rules. The more involved people are in establishing rules, the stronger is their sense of obligation to comply<sup>4</sup>(Torgler et al., 2011).

The importance of legitimacy and allegiance to authority in compliance decisions has been given attention by (Tyler, 1990a, 1990b) and (Tyler, 1997). The way people are treated by the authorities affects their evaluation of these authorities and their willingness to cooperate<sup>5</sup>. Furthermore, Tyler (1997)argues that understanding what people want in a legal procedure helps to explain public dissatisfaction with the law and provides direction for building public support for the law in the future.

#### **III. Other Determinants of Growth and Investment**

Apart from governance factors, empirical literatures also show that other factors such as financial openness and financial development affect economic growth and investment. For example, financial openness is a concept closely related, but different from financial development. As financial system developed and became more complex, it allows the inflows of foreign capital and becomes more closely integrated to foreign financial system. Furthermore, it is evident that countries can achieve financial development without necessarily having financial openness just like in the case of China.

Thus, financial openness affects economic growth and investment indirectly through its effect on financial development and the effect can either be positive or negative. Taking SSA into consideration, financial openness can affect financial development through participation of foreign institutional investors for instance, in their bonds and capital market which in turn, can positively affect investment and growth of the region. However, the reversal of volatile short-term capital flows on the other hand can negatively affect the financial development and can trigger financial instability thereby affecting the growth opportunities. The 2008 global financial crisis is a typical example.

Beck and Levine (2004)examined whether measures of stock market and bank development have positive relationships with economic growth after controlling for simultaneity and omitted variable bias. The study use data for 40 countries, over the period 1976 to 1998, employing generalized method of moments estimators. They find that stock markets and banks are jointly significant in affecting economic growth, suggesting that stock markets and banks provide different financial services such as credit to private sector. Similarly, Čihák, Demirgüç-Kunt, Feyen, and Levine (2012)use an updated version of the global financial development database to replicate the model of King and Levine (1993). They find similar growth-enhancing effects of financial development.

Studies regarding the relationship between financial openness and growth reveal mixed results or provide little evidence on developing countries (Kose, Prasad, Rogoff, & Wei, 2009; Obstfeld, 2009; D. Quinn, Schindler, & Toyoda, 2011; D. P. Quinn & Toyoda, 2008). Differences in the type of openness measure, the sample period, country coverage, and the choice of empirical methodology are the main reasons for the diverse findings in the literature. Despite these disagreement, measures such as KAOPEN index by Chinn and Ito (2008) are found to be ideal for aggregate studies. However, Kose et al. (2009) further argued that Financial openness such opening up to FDI has the biggest positive effect on domestic investment and growth. But to generate such growth benefits, a well-developed and well supervised finance sector, good institutions, and sound macroeconomic policies need to be in place. Financial openness affects economic growth in several ways including comparative advantage, technology transfer and diffusion of knowledge, increasing economies of scale and exposure to competition. Aysan et al. (2007) stressed that trade openness, human capital and financial development directly affect private investment or through their positive impact on governance factors.

another factor that affects investment and economic growth in the developing countries is foreign aid (Gounder, 2001; Levy, 1988; Murthy, Ukpolo, & Mbaku, 1994). These studies both found a positive link between foreign aid and economic growth. There are several channels through which foreign aid affects economic growth. Foreign aid increases investment in human and physical capital, it also increases the recipient countries' ability to import capital goods and technology, it is also associated with technology transfers that increases the productivity of capital and promotes domestic technical change (Morrissey, 2001). Despite these significance role of foreign aid to economic growth, there are still conflicting results from cross-country studies. For instance, (Ciftcioglu & Begovic, 2008; Fosu, 1999; Mallik, 2008; Ndambiri et al., 2012; Nyoni, 1998)found a negative relationship between foreign aid and economic growth. Ndambiri et al., (2012)in particular found that a unit increase in foreign aid reduces GDP growth in SSA countries by 7.7 percent. While, Burke and Ahmadi-Esfahani (2006) in their study observed no significant relationship between foreign aid and economic growth. One other important study that differs in conclusion to the

<sup>&</sup>lt;sup>4</sup>For further discussion on this aspect see for example: (Cialdini, 1989; Kidder & McEwen, 1989; McEwen & Maiman, 1986) and Lempert, R. (1972). <sup>5</sup>(see, e.g., Tyler, Casper and Fisher, 1989).



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above mentioned studies is (Yiew & Lau, 2018). In their investigation of the role and impact of foreign aid on economic growth of 95 sample of developing countries found that the relationship assumes U-shape. Meaning that, from the initial, foreign aid has a negative impact on economic growth, but over a long period of time, it contributes positively to economic growth.

Government consumption expenditure and private investment are also among the variables that influence economic growth particularly in developing countries. These variables are found to be highly correlated with economic growth (Adams, 2009; Ciftcioglu & Begovic, 2008; Firebaugh, 1992). When investigating the interaction between corruption and growth, Mauro (1995) reports that much of corruption's effect on growth takes place through the effect on investment. While in subsequent works, Mo (2001)and Pellegrini and Gerlagh (2004) identify human capital, political stability, and trade openness as additional channels through which corruption affects growth. These authors use cross-sectional models with the average rate of economic growth as the dependent variable and a set of control variables (specifically initial GDP, investment, primary and secondary school enrolment rates, population growth rate, political stability and government consumption expenditure) following Barro (1991) and Levine and Renelt (1992).In addition, Ghura and Hadjimichael (1996) examined the determinants of per capita economic growth for a large sample of SSA countries for the period 1981 to 1992 and found that increase in private investment has a relatively large positive impact on per capita growth. With respect to government spending, Loizides and Vamvoukas (2005)found evidence that the two variables have positive relationship although, such evidence was not established by (Hsieh & Lai, 1994)

#### **IV. Models and Estimation Method**

#### 4.1 Specification of the Growth and Investment Models

In order to test the relationship between institutional factors, investment and economic growth in the SSA countries, it is important to develop a model that captures the socio-economic and political environment that prevails in the region. Three basic theories were prominent in the literature. Firstly, the neoclassical theory based on the work of Solow (1956)together with its variants that emphasised on the role of physical and human capital, and technological changes as determinants of growth.

The second theory is the institutional theory advanced by (Barro, 1996; North, 1991) and (Acemoglu et al., 2001). The theory emphasised on the role of institutional factors as significant determinants of economic growth. Given that this study focuses on SSA, it is important to take into account, the peculiarities of the SSA economies into our model. One such peculiarities of SSA countries that has significant impact on their growth performance is the institutional factors as discussed in the previous sections, which the neoclassical growth model failed to account for in their growth models. The neoclassical model focus on growth determinants that are mainly economic and financial variables in nature, with little or no attention given to non-economic variables such as the role of institutions (Ibhawoh, 1999). Vollrath (2009) also shows that most of the developing countries including the SSA, are characterised by dual economy – comprising the element of formal and informal sectors. The formal or modern sector is grounded on the principle of neoclassical free market economy dominated by (privatisation and liberalisation), while the informal or traditional sector is characterised by greater market imperfection full of institutional regulations. Due to this market imperfection, resource allocation to the traditional sectors does not simply follows the neoclassical principle of optimisation (Galor & Mountford, 2008; Matsuyama, 1992). On the other hand, Verner and Blunch (1999) argued interaction between these sectors that is modern and traditional sectors matters for economic growth and in terms of poverty alleviation in the SSA.

Therefore, relying on neoclassical model of growth alone to identify the drivers of economic growth in African economies alone would be insufficient and misinforming as pointed out by (Bonga-Bonga & Ahiakpor, 2015). This study therefore, adopts a model similar to the work of Zouhaier (2012) that incorporates the institutional factors into growth and investment models as follows;

$$y_{it} = \beta_0 + \beta_1 y_{it-1} + \beta_2 k_{it} + \beta_3 Z_{it} + \beta_4 X_{it} + \gamma_i + \eta_t + \varepsilon_{it} \dots \dots \dots (1)$$

where;  $y_{it}$  denotes growth in real GDP per capita,  $y_{it-1}$  is lag real GDP per capita (i.e. the initial real GDP per capita). Inclusion of the lag value of the growth rates among the explanatory variables allows us to test the persistence of economic growth of countries in the sample under study since the previous economic growth can influence current growth. The  $Z_{it}$  is a vector of other control macroeconomic variables affecting  $y_{it}$  such as (trade openness, foreign aid, government investment and human capital),  $X_{it}$  represents the institutional factors (political instability, voice and accountability, administrative quality, rule of law, regulatory quality and control of corruption).

As extensively discussed in the literature, institutional factors can influence economic growth either through productivity or capital accumulation. Therefore, one of the objectives of this study is to analyse the impact of governance factors on private investment, we further specified an investment model that captures governance factors in order to test the impact of governance factors on private investment as in equation (2)

$$k_{it} = \beta_0 + \beta_1 k_{it-1} + \beta_2 X_{it} + \beta_3 Z_{it} + \gamma_i + \eta_t + \varepsilon_{it} \dots \dots \dots (2)$$



#### Where;

 $k_{it-1}$ , stands for lag investment. All other variables in equation (2) are defined in the same way as in equation(1)

Theoretical literatures as in Zouhaier (2012) further show that interaction between institutional factors and the productivity of investment yields a positive relationship. The latter is expected to improve with the improvement in the former. The implication of this hypothesis is that, the coefficient of investment to be estimated, as contained in the specific equation, would be influenced by the country's institutional endowment. Therefore, to examine the effect of institutions on the efficiency of investment, equation (2) is modified by including an interaction term as in equation 3

$$y_{it} = \beta_0 + \beta_1 y_{it-1} + \beta_2 Z_{it} + \beta_3 (X_{it} * k_{it}) + \gamma_i + \eta_t + \varepsilon_{it} \dots \dots (3)$$

Here,  $X_{it} * k_{it}$  stands for the coefficient of the interactive term.

The third theory is the geographic location theory based on the work of Sachs (2001), Gallup, Sachs, and Mellinger (1999) and Diamond (2000). The theory argued that geographical location matters for economic growth pointing out that income are higher in temperate climate than in tropical climate. Since SSA lies within same geographical location, this will not be given attention to this theory. Rather, the study will be routed through blending neoclassical and institutional theories to model the SSA economy to be able to examine the impact that governance factors have on growth and investment of the region.

#### 4.2 Estimation Method

The dynamic models of growth and investment specified above are likely to suffer from endogeneity and heterogeneity problems. There might be a problem of endogeneity in the relationship between institutional and economic variables on both growth and investment. Under this assumption as argued by Bond, Hoeffler, and Temple (2001), ordinary least square (OLS) gives an estimates of  $\beta$  which is biased upwards in the presence of individual country specific effects and biased downwards with fixed effect (Nickell, 1981). Because of these reasons, in the presence of lagged dependent variable, GMM estimator is useful to correct the biasedness.

Even if the lagged version is not used as a regressor, the GMM technique is still useful as it treats the endogeneity bias problem. Endogeneity occurs when there is reciprocal causality between the dependent variable and the regressors. This simultaneity bias is reflected in the presence of a correlation between the regressor and the error term. Even in the random effects model which by construction are not characterized by a correlation between the regressors and the country-specific error term  $\gamma$ , endogeneity may emerge, as regressors could be correlated with the error component *i*,*t*. Blundell, Bond, Devereux, and Schiantarelli (1992)further maintained that, if however, we are not willing to assume that the independent variable in the equation are strictly exogenous, or desire to accept the possibility of more general dynamic models including the lagged dependent variable, then both the within groups estimator and the GLS estimator are inconsistent. In other words, the presence of the lagged dependent variable as a regressor or even in the absence of a lagged ariable, the correlation between the regressor and the error term creates a bias in the estimates.

Two-stage-least-square is the technique commonly use to address the problem of endogeneity biased<sup>6</sup>. Although, the technique has also some shortcomings. One of the major problem associated with the technique of 2SLS is the difficulty in identifying suitable external instruments. In that case, GMM still is proved to be efficient in the case of over-identifying. The system-dynamic GMM is also able to overcome the econometric problems of cross-sectional dependence of countries and multi-correlation that are prevalent in macro panel models

#### 4.2 Data and source

The data used for the study were obtained from the following sources: for governance indicators, the data were sourced from World Bank's Worldwide Governance Index based on the work of Kaufmann, Kraay, and Mastruzzi (2011) and it consists of six dimensions namely: government effectiveness, control of corruption, rule of law, regulatory quality political stability and voice ad accountability. The data starts from 1996 to date, and constructed in such a way that each variable assumes a score of -2.5 to +2.5, with a normalised mean of zero and a standard deviation of one across all countries. Higher score means better condition. This study uses the data in two ways. Firstly, an index value of the six dimension is obtained using principal component analysis (PCA). This index is then used to capture the overall level of institutional development since the dimensions are very much

<sup>&</sup>lt;sup>6</sup>Take, for example, a simple model of the form Y = f(X) in which the regressor is endogenous. In that case, the two stages can be summarized as follows: (1) as a first step, we need to identify those exogenous instruments *Z* that affect the endogenous variable but are not affected by the dependent variable *Y*. We then regress the endogenous variable *X* on the selected instruments *Z*, X=f(Z). (2) In the second step, the fitted values of the first stage regression *X* are then used to estimate Y=f(X).



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correlated. Also, the index is important since an economy performs and responds to shock simultaneously irrespective of whether the shock is economic or institutional. The second way is by using each of the dimensions separately to help identify which of the dimensions is closely related to investment and economic growth, if any.

Other determinants of economic growth and private investment that were included in the models are: average growth of GDP per capita, private investment, government consumption expenditure, official development assistance, GDP per capita and financial development. All these variables were sourced from the World Bank, World Development Indicators except trade openness. The financial openness variable is an index sourced from the work of Chinn-Ito index (KAOPEN) index that measures countries degree of capital account openness.

#### V. Results and Discussion

#### 5.1 Impact of Institutional factors on growth

The results presented here is the system GMM estimation based on the work of Arellano and Bond (1998). The results of this estimate is preferred as it eliminates any bias related to unobservable individual heterogeneity and provides results that are better and more efficient. The sign of most of the variables' coefficient fall within expectation. Table 5.1 reveals that lagged economic growth affects subsequent economic growth because its coefficients are all statistically significant and positively related with economic growth.

 Table 5.1 estimation results of institutions and economic growth: dependent variable economic growth (Arellano-Bond dynamic panel data estimator)

Variables	1	2	3	4	5	6	7	8
y <sub>t-1</sub>	0.89***	0.85***	0.82***	0.83***	0.85***	0.83***	0.86***	0.84***
	(0.068)	(0.082)	(0.065)	(0.068)	(0.073)	(0.065)	(0.068)	(0.066)
k	0.0162***	0.0126**	0.0121*	0.0145***	0.0128***	0.0132*	0.0127*	0.0162**
	(0.005)	(0.006)	(0.007)	(0.006)	(0.006)	(0.007)	(0.005)	(0.005)
Financial	0.0631	0.269	0.132	0.118	0.0958	0.139	0.0702	0.0853
Openness	(0.121)	(0.226)	(0.163)	(0.150)	(0.158)	(0.174)	(0.125)	(0.106)
Financial	-0.00416	-0.0304	-0.0271	-0.0338	-0.0296	-0.0340	-0.0225	-0.0052
Development	0.005)	(0.029)	(0.022)	(0.024)	(0.0256)	(0.0265)	(0.0189)	(0.0055)
Oil Rent	-0.0347	0.128	0.124	0.0884	0.140	0.112	0.106	-0.0416
	(0.0257)	(0.170)	(0.142)	(0.112)	(0.162)	(0.138)	(0.137)	(0.0286)
Government	-0.0132	-0.028	-0.025	-0.0023	-0.0068	-0.0041	-0.0093	-0.0065
Consumption	(0.0107)	(0.0342)	(0.0243)	(0.0224)	(0.0258)	(0.0238)	(0.0197)	(0.0120)
Foreign Aid	-0.0031	-0.0066	-0.0023	-0.0049	-0.0047	-0.0011	-0.005	-0.0067
	(0.005)	(0.010)	(0.006)	(0.0081)	(0.008)	(0.007)	(0.0067)	(0.0055)
Political		1.796*						
stability		(0.994)						
Control of			2.001***					
corruption			(0.885)					
Government				1.882***				
effectiveness				(0.888)				



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Rule of law					2.053*			
					(1.053)			
Bureaucratic						2.266*		
quality						(1.251)		
Voice and							1.404*	
accountabilit							(0.799)	
У								
Institutional								0.495
index								(0.514)
No. of	231	231	231	231	231	231	231	231
Observation								
F-Statistic	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen Statistic	0.591	0.518	0.692	0.823	0.542	0.657	0.586	0.716
AR(2)	0.988	0.452	0.413	0.473	0.407	0.505	0.498	0.888

\* 10 percent \*\* 5 percent \*\*\* 1 percent standard errors in parenthesis

Similarly, investment influences economic growth as the coefficient is positive and statistically significant indicating a predominant effect on economic growth. Government consumption expenditure does not affect economic growth in these countries as its coefficients in all the models are not statistically significant.

The coefficients of the variable "financial openness" are all positive even though, not statistically significant indicating disconnects between this variable and economic growth in the SSA countries during the period under review. Likewise, the coefficients associated with the variable "financial development" exhibit negative impact on economic growth although, they too are not statistically significant. This negative relationship of these variables with economic grow this obvious in practice, especially considering the underdeveloped nature of the financial market in the SSA. This result is, although closely related, but slightly differs to the findings of (Zouhaier, 2012). Similar with respect to signs, but differs in level of significant. Measurement errors and sample size can be attributed to this discrepancy.

The coefficient of the variable "foreign aid"is statistically not significant. This means that foreign aid received by SSA countries have no effect on the growth of the region. Not only that it has no effect in the growth of the region, but the relationship also tends to be negative. This result is consistent with several studies such as Boone (1996)Burke and Ahmadi-Esfahani (2006), Adedokun (2017) among others. This result is not surprising as SSA countries over the decade have been receiving foreign aid, however, the region is ranked among the poorest in the world. Oil rent exhibit a different behaviour. In the absence of political stability and effective control over corruption, the coefficient tends to be negative. Meaning that the presence of corruption and political instability the oil rent has a negative impact on the economic growth of oil reach countries of the region. This confirmed the "resource curse hypothesis".

All the six measures of institutional factors exert a dominant effect on economic growth. The coefficient of these variables are all positive and statistically significant as expected. But one interesting finding is that the magnitude of the coefficient of previous growth rate tends to be higher when none of the institutional factors is taken into account in the models. This means that despite the fact that institutional factors exhibit positive and significant impact on economic growth, perhaps due to weak and poor institution, the marginal effect remains low. For example, in column 1 of table 5.1, the coefficient of the earlier growth is 0.89. But when the institutional factors were introduced into the models, it fluctuates around 0.82 to 0.86 units points a decline of 0.05 units on average. It clearly points out that if the region can effectively control corruption, improves on political stability by minimising ethno-religious conflicts, have better rule of law and order and very effective government and a quality administration. The economic growth might be higher than what has been observed now. This finding is similar to the findings of Aysan et al. (2007), Barro (1991) and Fosu (1992) among others.



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#### 5.2 Impact of institutional factors on economic growth

Table 5.2 shows how institutional factors indirectly affect economic growth through capital accumulation. The lagged investment, which is a good predictor for investment, appears to be positive and statistically significant in all the models estimated in table 5.2.

Table 5.2 estimation results of institution and economic growth: dependent variable economic growth (Arellano-Bond dynamic panel data estimator)

Variables	1	2	3	4	5	6	7	8
k <sub>t-1</sub>	0.33***	0.33**	0.36***	0.34***	0.37***	0.34**	0.33***	0.30***
	(0.101)	(0.0892)	(0.0982)	(0.0942)	(0.0998)	(0.0905	(0.106)	(0.0794)
						)		
Openness	-1.325	-1.751	-1.406	-1.084	-1.751	-1.279	-1.459	-0.963
	(1.181)	(1.158)	(1.218)	(1.220)	(1.23)	(1.035)	(1.372)	(0.721)
Financial	-0.120	-0.130	-0.164	-0.249*	-0.242	-0.312*	-0.256*	-0.0826
Development	(0.0814)	(0.101)	(0.0977)	(0.127)	(0.155)	(0.173)	(0.136)	(0.075)
Oil Rent	0.377	0.991	0.989	1.047	1.447	1.719	1.258	0.0725
	(0.738)	(1.114)	(1.019)	(1.121)	(1.372)	(1.545)	(1.237)	(0.580)
Government	-0.0728	-0.651	-0.602	-0.444	-0.841	-0.687	-0.632	0.0606
Consumption	(0.209)	(0.564)	(0.430)	(0.408)	(0.701)	(0.603)	(0.554)	(0.144)
Foreign Aid	-0.202	-0.176	-0.143	-0.154	-0.157	-0.174	-0.234	-0.152
	(0.161)	(0.177)	(0.152)	(0.165)	(0.165)	(0.169)	(0.166)	(0.183)
Political Stability		15.69*						
<u> </u>		(9.009)	17 0011					
Control of Corruption			17.88**					
			(8.084)					
Government				21.72**				
Enectiveness				(10.37)				
Rule of Law					33.73*			
					(19.00)			
Bureaucratic Quality						35.56*		
						(18.03)		
Voice and Accountability							23.26 * (12.97)	
Institutional Index								8.975***
								(3.591)
No. of Observation	275	275	275	275	275	275	275	275
F-Statistic	0.004	0.002	0.000	0.000	0.016	0.002	0.019	0.000
Hansen Statistic	0.452	0.316	0.332	0.354	0.434	0.340	0.286	0.505
AR(2)	0.869	0.785	0.580	0.590	0.612	0.814	0.978	0.672



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### \* 10 percent \*\* 5 percent \*\*\* 1 percent standard errors in parenthesis

In addition, all the institutional measures have the correct signs as expected. Their effect, on the other hand, tends to influence economic growth via capital accumulation. Firms' expectation improves as coefficient of tends to be higher when other institutional measures are included in the regression. For instance, the ability of policy makers to have control over corruption motivate firms to invest more as it can be seen in column 3 to 6 of table 5.2. The magnitude of the lagged investment changed from 0.33 in column 1 to about 0.37 in column 5 when control of corruption variable is included in the model. This shows that there is an indirect effect of institutional factors, specifically control of corruption, on investment. This result is similar to the findings of Cieślik and Goczek (2018). Their empirical finding shows that control of corruption has a positive and significant impact on the growth rate of real per capita GDP and on investment ratio.

The result also shows that financial openness and financial development have predominant negative effects on investment in the SSA during the period under review, as the coefficient of these variables appeared negative in all the regressions. However, a significant negative effect lies in the financial development variable. Hence, it is important for countries in the SSA to focus, not only on institutional reform, but also on other economic policies that can restore confidence in the financial markets (such as sound financial regulations) as well as in designing policies that can mitigate the inflows of volatile financial investment into their countries. The estimation failed, however to validate the effect of negative share of oil rent on investment in the SSA. The result though not statistically significant, however it shows a positive relationship with investment. Thus contradicts the view that countries that do not depend largely on resource rents grow faster than countries that largely depend on resource rent like oil.

#### **5.2 Impact of institutional factors on Investment**

This section presents the effect of institution on the contribution of investment to economic growth by introducing an interactive term into the investment model of equation (2). In summary, the result yields a positive interaction between investment and all the measures of institutional factors. This is to say that investment exercises a positive effect on the economic growth of these countries as long as strong institutions are put in place in such a way that private initiatives to invest flourished. The positive and significant effect of these institutional factors on investment is logical since many studies have established that corruption has negative impact on investment. Exception in this conclusion is Asiedu and Freeman (2009)<sup>7</sup>. In addition, previous studies have also established that political instability, violation of property rights and court order hampered economic growth. Hence, there is reason to believe that control over corruption and political stability can positively and significantly influence economic growth via effect on investment in the SSA.

Variables	1	2	3	4	5	6	7
y <sub>t-1</sub>	0.814***	0.816***	0.811***	0.815***	0.815***	0.814***	0.830***
	(0.202)	(0.202)	(0.203)	(0.201)	(0.201)	(0.200)	(0.193)
k <sub>t-1</sub>	0.007***	0.007***	0.006***	0.007***	0.007***	0.007***	0.008***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Openness	0.009	0.002	0.038	-0.0002	0.004	0.003	-0.110
	(1.137)	(1.139)	(1.124)	(1.140)	(1.137)	(1.140)	(1.187)
Financial	-0.103*	-0.103*	-0.102*	-0.103*	-0.102*	-0.102*	-0.104*
Development	(0.057)	(0.057)	(0.056)	(0.057)	(0.057)	(0.056)	(0.06)
Oil Rent	-0.621	-0.622	-0.613	-0.621	-0.619	-0.618	-0.646
	(0.883)	(0.884)	(0.873)	(0.883)	(0.881)	(0.880)	(0.911)
Government	-0.016	-0.016	-0.016	-0.016	-0.016	-0.016	-0.018

 Table 1 estimation results of interaction between institution and investment: dependent variable investment (Arellano-Bond dynamic panel data estimator)

<sup>&</sup>lt;sup>7</sup>Although, Asiedu and Freeman (2009) used firm level data, however their findings shows that corruption has no negative impact on investment in SSA and Latin American countries. The possible reason they gave is that firms might have factored corruption from the initial time, i.e. before the business kicked off. As such, the negative corruption on investment would disappeared



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Consumption	(0.104)	(0.104)	(0.103)	(0.104)	(0.103)	(0.103)	(0.106)
Foreign Aid	-0.020*	-0.020*	-0.020*	-0.020*	-0.020*	-0.020*	-0.020*
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Political	0.010***						
Stability	(0.004)						
Control of		0.014***					
Corruption		(0.006)					
Government			0.016***				
Effectiveness			(0.007)				
Rule of Law				0.015***			
				(0.007)			
Bureaucratic					0.0131***		
Quality					(0.006)		
Voice and						0.017***	
Accountability						(0.008)	
Institutional							0.002***
Index							(0.001)
No. of Observation	327	327	327	327	327	327	327
Group/Instrume nts	25/22	25/22	25/22	25/22	25/22	25/22	25/22
F-Statistic	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen Statistic	0.705	0.709	0.707	0.714	0.714	0.717	0.703
AR(2)	0.244	0.244	0.797	0.243	0.244	0.245	0.231

\* 10 percent \*\* 5 percent \*\*\* 1 percent, standard errors in parenthesis

Although, not statistically significant, however, the negative sign of government indicates that smaller size of private participation in economic activities can be harmful for medium to long-term growth economic growth. Another interesting finding of the study is that the interaction between investment and the aggregate index of institutional factor that summarises the six individual measures exert a greater influence on investment than the effect produced by via the individual indicators. This further validates the importance of these measure on firms' decision to invest. This result point to the need for institutional reforms in the SSA especially considering how these institutional factors displayed a positive and dominant effect on investment.

#### VI. Conclusion

This research empirically shows, for a panel of 37 SSA countries examined during the period 1996 to 2016, that institutional factors constitute an important part for investment and growth region. The study strongly maintained that high level of political stability, greater control over corruption, government effectiveness, rule of law and order, good bureaucratic quality and higher level of voice and accountability contribute significantly on firms' decision to invest in the countries observed. This conclusion adds to the existing bodies of literature by validating the role of large sets of institutional variables on investment and economic performances over a relatively long period of time.



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The finding is unambiguous and robust to the introduction of other control variables in the models estimated. As in the case of the introduction of financial development and foreign aid shows that these variables play a significant negative effect on growth of SSA, pointing out that firms in the SSA face greater financial constraints since activities in the financial markets is counter-productive, and the substantial funds that comes as an aid from donor countries to be used for infrastructural development do not also contribute significantly perhaps due to poor or weak institutions. These have posed a significant challenge to the growth prospects of the region. As for other control variables such as financial openness, government expenditure and oil rent, the study failed to establish any significant impact in their contribution to economic growth of the region. This finding validate the works of Rodrik, Subramanian, and Trebbi (2004) and Easterly and Levine (2003).

In SSA, good institutions would greatly influence investment and economic growth. This is the case for all components of institutional factors with particular attention to control of corruption, political stability and law and order. Making substantial reforms of their governance institutions to achieve a higher ranking, could significantly boost the economic activities and economic growth at large. This study considers institutional factors as key variables for stimulating growth and investment climate in the region.

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