

**Governance Quality and Multinational Investment Inflows in Sub-Sahara Africa:  
System General Method of Moment (SGMM) Approach**

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**Abstract.** The sustainable development experienced by many advanced countries is predicated on gains from private investment inflows to such economies. However, the Sub-Saharan Africa (SSA) has not been able to harness such benefits. The study examined whether governance quality influence multinational investment inflow. The study utilized System GMM in investigating the relationship using total enumeration of 48 SSA countries for the period of 2004-2018 (15years). The results showed that quality of governance is relatively weak across SSA, as SSA countries score below average in the world governance index (WGI) vis-avi voice and accountability, governance effectiveness and political stability and absence of violence. The inferential result finds that governance quality dimensions individually shows diverse patterns ( $-0.802, p < 0.05$ ;  $-18.303 p < 0.05$ ;  $-0.051 p > 0.05$ ) but jointly exert significant impact on multinational investment inflow ( $24.260, p < 0.05$ ) This may partly elucidate why SSA is lagging behind in attracting foreign investments as compared to other regional blocs in the developing countries. The policy implication of this study is for policymakers to further improve the quality of governance in the region and promote policies that would further attract the inflows of multinational investments into into the sub-region.

**Keywords:** Governance Quality, Multinational Investment Inflows, Foreign Direct Investment, Sub-Sahara Africa System, System GMM

**Introduction**

Trading among nations is as old as national boundaries. Citizens of different nationalities travelled from their countries to other countries to buy items not presents in their home country or in short supply, such as food stuffs, precious metals, slaves among other things. Likewise, Sellers also try to locate optimum market for their products and production processes by exploring market in other countries. Improvement in communication and transportation in the 21<sup>st</sup> century has prompted further globalization, liberalization and greater opening of the world economies and markets to foreign trade and investments (Akinjide, 2007).

Cross-border trading has been one of key element of globalization, regional and international integration of developing economies especially Sub-Saharan Africa countries. The associated benefits of cross-border trading, especially benefit to recipients has aggravated the pressure among many government to attract this scarce capital through multinational investments. furthermore the increase in globalization has enhanced the discussion on the impact of cross-border flows of capital and investments around the globe and to the host economy especially Sub-Sahara Africa which struggles across all developmental indices. Multinational investment (MI) is considered as a core element in economic globalization, most especially in developing countries. This is because inflow of foreign investments is considered as a key measure of secure elements of investment flows to emergent countries (Bénassy Quéré, Coupet & Mayer, 2007) and a contingent of economic improvement and social welfare through capital accumulation, transfer of modern technologies, balance of payment, foreign exchange and reserve, enhancing regional competitiveness, developing local human resources, access to foreign markets and spillover

on domestic industries (Akinlo, 2004; Anyawu, 2011; Dupasquier & Osakwe, 2003; Anyanwu, 2003).

The pressure by various governments of SSA to persuade multinational investment inflow globally was increased due to need for revenue to meet with enormous challenges faced by these governments saddled with the responsibility of providing basic infrastructures for citizenry. Governments have therefore, used, extensively, several economic tools and other incentives to persuade foreign investors to locate in their countries. After all, reliance basically on internally resources through the local firms for development has proved insufficient for many countries of Sub-Sahara over the years. Countries that have experienced rapid social and infrastructural development around the world were found to have leveraged on quality private investments, this is because globally, foreign investment augments local productive capacity and domestic output, support transfer of modern technology and local industries and skills development to the host country, improves employment rate, government revenues and hence increase social welfare, among other benefits (Wang, Gu, Tse & Yim, 2013; Stowhase, 2002).

However, despite efforts of Sub-Sahara Africa to provide an environment to encourage Multinational inflows and the enormous investment opportunities in the global economy, there is a general marginalization of the economic block as shown by a sluggish growth of investment inflows to the region. The continent has not enjoy a fair share of overall worldwide increase in cross-border trade, SSA as a regional economic block lag behind in global trade integration compared with the developing economies in Asia and other continent. In time past, Africa and Asia attract almost similar amount of foreign investment in the early 1970s and mid 1980. Recent data however suggested otherwise, by mid 1990, developing countries in Asia continent were receiving almost eight folds as much as those in Africa. this gap became more widen the millennium. Asia received about 21.57 per cent of world total FDI compared to 2.64 per cent to developing economies of Africa in 2004.

The reason for this aptly in line with Dunning's eclectic theory (Dunning, 1981), the theory assert that in addition to having internationalization and ownership advantages, business entities also sought after location advantages in the host countries before it decides to locate. The location advantages are in the form of efficient systems and institutions, availability of needed resources, infrastructure, low wages and efficient tax system. These locational factors enable the firms reduce costs of production, increase its efficiency and hence augment income. Over the years traditional approach of natural resources, population and other incentives drives narrative for investment flow attractions, however, empirics have however revealed that the factors influencing the attractiveness of a region, particularly for the Africa continent, are no longer the resource endowments Thus, the thrust of this study is to investigate the effect governance quality exert in multinational investment inflow attraction to Sub-Sahara Africa.

**Research Objective:** To examine if multinational investment inflows in Sub-Sahara Africa is contingent upon governance quality

**Research Question:** What is the effect of governance quality on multinational investment inflows in Sub-Sahara Africa?

**Research Hypothesis:** Governance quality does not have statistically significant effect on multinational investment inflows in Sub-Sahara Africa.

One of the definitions of governance is that it is how power is applied in a country's economic and social resources administrations (Ajaz & Ahmad, 2010) The World Bank has recognized three discreet aspects of governance: (i) the form of political regime; (ii) the process by which authority is exercised in the management of a country's economic and social resources for development; and (iii) the capacity of governments to design, formulate, and implement policies and discharge functions (World Bank, 2019).

UNDP (2005) observed Governance as the application of economic, political and administrative authority to manage a country's affairs at all levels. It encompasses mechanisms, processes, and institutions, by which citizens and groups bring together their interests, work out their legal rights, meet their obligations and reconcile their differences. The notion of governance signifies the exercise of political authority and the use of control in a society in connection with the management of its resources for social and economic development. This broad definition includes the role of public authorities in founding the environment in which economic operators function and in shaping the spreading of benefits as well as the nature of the affiliation between the ruler and the ruled (Egbo, 2018).

According to Kaufmann *et al.* (2010), Governance as defined by Institute of Governance Ottawa, an agenda that contains the institutions, processes and conventions in a society which regulate how power is exercised, how vital decisions touching society are made and how various interests are given a place in such decisions. Commission on Global Governance defined Governance as the sum of the many means individuals and institutions, public and private, manage their shared affairs. It is an ongoing process through which differing or diverse interests may be billeted, and co-operative action may be taken. It includes formal institutions and regimes authorized to enforce compliance, as well as simple measures that people and institutions either have settled to or observe to be in their interest.

In the opinion of Coliver (2018), quality governance is guaranteeing respect for human rights and the rule of law; strengthening democracy; promoting transparency and capacity in public administration. Governance is the process whereby elements in state exercise power and authority, and control and makes policies and decisions relating to societal life, and economic and social development. Governance is a broader notion than a government. Governance revolves around collaboration between these formal organizations and those of civil society. Governance is the process for obtaining lasting economic, social and institutional progress, promoting healthy equilibrium amongst the citizenry, civil society and the economic market, and generating expressly for this purpose active involvement by citizens.

Bad leadership is related to bad governance, this can be defined as a system of values, policies and institutions by a society that manages its economic, social, and political occurrence through interactions within the slate, civil society and private sector (Bojang, 2017). According to Amadeo (2018), good governance promotes people-cantered development, and bad governance (political, economic and social governance) the three dimensions of governance is among the major causes of the problems facing African nations and threatening to undermine its democratization process. The people are not allowed equal economic opportunity and freedom to participate in the political process.

IMF report (2003), World Bank (2000), Alesina and Dollar (2000) suggest that the quality of domestic governance has a quantitatively important impact on a country's ability to attract foreign investors who prefer to invest in countries with good governance. Borenzstein *et al.* (1998) posited that positive spillovers are more likely to be detected from countries with a relatively high level of absorptive capacity provided by quality of institutions (in terms of human capital, quality of governance etc.) which in turn allows countries to take advantage of financial globalization. On the other hand, strong arguments can be made that international investment incentives in a host country should attract more foreign investors. This view is focused on the importance of international investment incentives and subsidies that host governments often introduced to encourage multinational enterprises to invest in their markets. The growth effect of foreign investment has been well researched. Nevertheless, and not surprisingly for an economic issue, the effect of foreign investment on economic progress still remains contentious.

Hassen (2018) carried out a study on Foreign Direct Investment (FDI) and relate it to economic growth, institutional quality and manufacturing value added, the study uses dynamic panel data techniques, the results confirm that economic growth, institutional quality, and natural resources, each play a positive role in attracting foreign capital flow to the host economy. Institutional quality is associated with economic growth (North, 1981, 1990). Previous research studies on the important determinants of foreign capital flow in developing countries have argued that institutional quality is the most important factor in stimulating economic growth. North (1990) explains that institutions are formulated to reduce the uncertainty associated with human exchange and provide societies with a predictable framework for interaction.

Globerman and Shapiro (2002) found that the returns for good governance are strong for developing economies, relative to other countries in their study. The view that economic problems in developing countries arise due to the poor quality of institutions is very common among researchers and policymakers; lower institutional quality is associated with lower investment, low productivity growth, low per capita income, and overall slower output growth (Jude & Levieuge, 2013). Good institutions reduce production and transaction costs (North, 1990), and as a result, increase profitability and economic activity, whereas poor and weak institutions increase uncertainty and costs of production (Cuervo-Cazurra, 2006, 2008).

Makki and Somwaru (2004) concluded that success in promoting economic growth are contingent upon an array of conditions of governance, regulations and institutions. Studies show that where multinational investments enhance economic growth it is done within the cover of efficient governance system (Sumner, 2005) suggested that one possible explanation for a mixed results regarding the development-effects of foreign investment is difference in conditioning factors such as efficiency of governance, institutional quality and policies to annex these benefits. For instance, Slesman et al. (2015) found that capital inflows boost growth only in countries that score above an optimum threshold on the qualities of governance, while those that fall below record insignificant or even negative effects. Similarly, other studies argue that governance quality is one of the main reasons why Sub-Saharan Africa as a regional economic block has not attracted and benefited from as much cross-border investment inflow as the other regions.

While the economic determinants of FDI flows to developing countries have been analysed to a considerable degree, it is rather astonishing that the importance of changes in political institutions and of other relevant policies in host countries have received relatively little attention. In the 1990s, most existing studies on the influence of policy-related variables on foreign investment flows consisted of international cross-country studies. Within this framework, it has been found, for example, that there is a negative link between institutional uncertainty and private investment (Brunetti, Kisunko & Weder, 1998), a positive relationship between FDI and intellectual property protection (Lee & Mansfield, 1996), and a negative impact of corruption on FDI flows (Wei, 2000).

Adeleke (2014), Dupasquier and Osakwe (2006) mention poor governance as one among the many reasons responsible for the region's inability to competitively attract external capital, similarly, Esey and Yaroson (2014) underscore the significance of the same factor, but for the specific case of Nigeria. Harms and Ursprung (2002), Jensen (2003), and Busse (2004) found that multinational corporations are more likely to be attracted by countries in which democracy is respected. Li and Resnick (2003) found that democratic rights lead, above all, to improved property rights protection, which in turn boosts foreign investment.

### **Theoretical Framework**

Several theories have been postulated as relating to internalization among of which eclectic theory of Dunning stands out which also known as OLI. However these theories focus

more around factors that pushes firms for internationalization and little connection or link have been establish around factors that attract these scare capital. Therefore this study focuses on a theory that focuses in filling this gap. Although many scholars have used this theory to provide micro relationship between firms and investors which posited that the more positive signs investor perceive from firm the higher the likelihood of investing in such firms, taking this a bit further on a county level. Signaling theory popularized by Spencer (1973) can be used to explain visible signals in terms of policies, governance structure and institutional quality, efficiency, practices, growth, resources which serve as an attraction or a signal to the investor to locate in the host economy. Investees reduces negative signals that can inhibit investors interest, and putting policies and practices in place which serve as a visible signs to the investor on the bases upon which they can base their investment decisions. Foreign investors take investment decisions considering several factors as to where to direct their capital for optimization. In doing this, multinationals look for signals, signs, attractors that will signal either to invest in a particular location or the other, such information includes, relative peace and order, political and economic stability, efficiencies of governance and policies and quality of institution if such firm is efficiency seeking firm, resources richness if is a recourse seeking entity, availability of quality, efficient institutions, ease of doing business, transparent government policies will give positive signal to investing community as a choice location for investment.

Explaining multinational investment inflow according to this theory, the more positive signals investor received and observed as regard to those area of interest such as peace and absence of violence, political stability, rule of law, protection of property right voluntary increases investors confidence and this may lead to increase in demand for the country as investment destination which then leads to employment, revenue to the government, spillover to local industry in area of learning and technology transfer and generally to sustainable growth and development. Some study lend support to this theory on micro level, however this study is first to adapt the theory to explain location drive for multinational investment inflow.

Signaling theory is concerned about deliberately communicating positive information, attributes to the public (Connelly, Certo, Ireland & Reutzel, 2011). Also, economy that provides avenue for good governance, social and environmental business friendness will send a signal to their stakeholders to inform them about their proactive strategies engaged in as responsible country which will lead to reputational benefits and confidence of existing and prospective investor outside such economy (Loh, Thomas & Wang, 2017). Therefore, positive signals make the county to be more attractive to investors, donors and other stakeholders. An expansion to this theory suggests that good governance, quality institutions, ease of doing business are signals sent by the host economy to external investors. Signaling theory emphasizes on building, maintaining and defending host economy reputation and inspiring investors' confidence.

### **Methodology**

The study employed *ex-post facto* research design in investigating the interaction between governance quality and multination investment inflow into Sub-Sahara Africa. The *ex-post facto* research design was adopted because is a post review of how governance quality impact multinational investment inflow prior to this study. The decision to adopt *ex-post facto* research design was further supported by the availability of un-manipulative data from secondary sources in analyzing the relationship between the dependent variable, independent variables and the moderating variables. Both descriptive and inferential statistics were adopted. The design enabled a critical assessment and analysis of cause and effect relationship of variable being examined in this study. This type of design is one that is non-experimental in which pre-existing groups are compared on some dependents variables

(Lammer & Badia, 2005). *Ex-post facto* research is used also because it involves the use of past records in order to determine the present association and to develop a predictive model capable of invoking future relationship that may exist between the variables of interest (Akinyemi, 2016).

The Sample frame the study is made up of forty-eight (48) Sub-Sahara African countries identified by the United Nations as a sovereign state and the categorization by the World Bank (WBDI, 2018). The justification for this selection is based on the observation of the expansion of the study sample from advanced economies such as European countries. It is far from sufficient to understand the interactions between quality of governance and investment inflow. While the literature on empirical determinants of these interactions may have reached some advanced stage in developed regional economic block, the study is still at a pedestrian stage in developing economic regions such as the Sub-Sahara Africa. The findings arrived at in those developed economies could not be generalized to SSA. Indeed, SSA provide distinctive and dynamic settings for the international research in this area of study because this area has diversified characteristics in terms of different historical backgrounds, cultural norms, institutional heritages, and political processes (Kiss *et al.*, 2012).

A further justification for variable consideration is that traditional studies on investment are predicated on economic variables ignoring or underestimating the importance of governance quality which are playing an increasingly important role in the global economy and investment.

The period coverage in this study is 15 years from 2004-2018 for 48 countries of SSA. These countries represent all countries recognized by United Nations as sovereign nations in Sub-Sahara Africa. The study adopted total enumeration technique, which means that the entire population element was considered for the study which is made up of forty-eight (48) countries of the Sub-Sahara Africa. Panel data were collected. The panel data were sourced from the World Bank World-Wide Governance Index and World Bank Development Indicator database. The study adopts dynamic panel of Systems Generalized Method of Moment (SGMM) estimator together with the standard error and orthogonal deviations thereby accounting for the possibility of previous inflows influencing future flows and disinvestment and possible endogenous concerns.

In achieving the set objective, the study employed both descriptive and inferential statistics in analyzing the data that were collected for this study. Descriptive statistics shows the data characteristics, such as the mean, minimum, maximum, standard deviation. The inferential statistics, helps in testing hypotheses formulated and answer research questions. Since the data is a panel data, and cut across different countries in several years, a dynamic panel data approach was appropriate.

The methodology adopted for this study is most suitable for analysis that involves space and time dimensions. In this study, the data for 48 Africa Countries were collected over a period of 15 years for the purpose of analysis. Also panel data are repeated observations on the same cross section, typically of individual variables that are observed for several periods (Pesara, Shin & Smith, 2000; Wooldridge, 2003; Baum, 2006; Westhan, 2009; Uwuigbe, 2011).

The inferential statistics helps in explaining and predicting the linkage between the governance variables as it interacted with multinational investment. These methods are also used to test the hypothesis, solve research questions and to determine the relationships among variables; These estimation techniques were applied in order to ensure robust results. The System Generalized Method of Moments (SGMM) estimation technique. SGMM was used to estimate dynamic empirical relations. Developed by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998), the SGMM estimators have been used

increasingly due to its superior advantage as an estimation technique. The SGMM estimator can effectively handle the problem of unobserved heterogeneity; it allows for a dynamic relation of the dependent variable while also controlling for endogeneity biases (Wintoki, Linck, & Netter, 2012). Thus, the SGMM estimators avoid the dynamic panel bias besides handling critical modeling issues such as fixed effects and endogeneity of explanatory variables better (Nickel, 1981; Roodman, 2006). Due to its inherent flexibility, the SGMM also accommodates unbalanced panels and controls heteroskedasticity) and autocorrelation (Woodman, 2006).

Specifically to this study, the SGMM technique was employed for two reasons. First, the SGMM is helpful in addressing the endogeneity concerns of all the potential endogenous variables in the study. In addition, some of the study variables, such as multinational investment inflow, have been found to be theoretically endogenous (Busse and Hefeker, 2007).

Second, the dynamic panel SGMM estimator is appropriate for this study because, it allows for the treatment of the dependent variable for the study (multinational investment inflows) as a dynamic variable. According to Woodman (2006), the SGMM estimator was designed for panel analysis whereby, current realization of the dependent variable is influenced by past ones. Existing empirical studies suggest that MNE investment flow in (t-1) can influence (t+1) i.e. past investment flow can reinforcing future investment in same location; this implies that past levels of investment influences current levels (Agbloyor et al., 2013; Asiedu & Lien, 2011; Busse & Hefeker, 2007). This method has also been successfully applied in a similar study by Joseph(2019).

### Measurement of Research Variables

The study employs panel data from 48 Sub-Sahara Africa countries from 2004–2018. Data were sourced from two sources World Development Indicators (WDI) and World Bank Governance Indicators (WBGI), a database from the World Bank. The dependent variable, multinational investment inflow data was extracted from World Development Indicators (WDI) while the data for governance was extracted from World Bank Governance Indicators (WBGI). In this study, multinational investment inflow is the foreign investment flow in country “i” at time “t”. The definition of Foreign Direct Investment as given by UNCTAD, meet the conceptual intent of this study for multinational investment inflows as an investment through Multinational Enterprises (MNE), “Multinational Enterprises (MNE) by a non resident enterprise in one economy (direct investor or parent enterprise) with the objective of establishing a lasting interest in an enterprise that is resident in an another economy (direct investment enterprise or foreign affiliate). The lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of control on the management of the enterprise. The ownership of 10% or more of the voting power of a direct investment enterprise by a direct investor is evidence of such a relationship” This definition is suitable and so adopted for multinational investment inflows. Direct investment consists of investment with control; i.e., the foreign investor/parent firm takes real decisions and actively participates in the running of the foreign affiliate. The origin of the investment does not impact the definition, as a foreign investment: the investment may be made either "inorganically" by buying a company in the target country or "organically" by expanding the operations of an existing business in that country.

**Table 1. Variables measurement**

Variable	Definition	Measures	Source
<b>Governance Quality (X)</b>	The Index of Voice and Accountability, Government	Governance quality is the index of	Worldwide Governance

	Efficiency and Political Stability	Voice and Accountability, Government Efficiency and Political Stability Each index ranges from -2.5 to +2.5. Lowest measure is -2.5 and highest is +2.5 for each index.	Indicators (WDI) database published by World Bank
<b>Multinational Investment (Y)</b>	This is “an investment made by a non resident enterprise in one economy (direct investor or parent enterprise) with the objective of establishing a lasting interest in an enterprise that is resident in another economy (direct investment enterprise or foreign affiliate). The ownership of 10% or more of the voting power of a direct investment enterprise by a direct investor is evidence of such a relationship”	FDI inflow from all over the world into the host economy	World Bank Development Indicators (WBDI)

Source: Researcher’s study (2020)

#### *Hypothesis Testing*

$$\log MNIVI_{it} = \beta_0 + \log MNIVI_{it-1} + \beta_1 VOA_{it} + \beta_2 GEF_{it} + \beta_3 PSAV_{it} + \mu_{it}$$

**Equation:**  $\ln MNIVI = f(\ln MNIVI_{t-1}, VOA, GEF, L.GEF, PSAV)$

**Stata code:** `xtabond2 lnMNIVI L.lnMNIVI VOA GEF L.GEF PSAV, twostep robust iv(VOA PSAV GEF) gmm(L.lnMNIVI), lag(1 5) collapse`

## Results and Discussion

### Descriptive Analysis

**Table 2. Descriptive statistics result**

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
MNIVI	4.356089	2.820412	65.16711	-6.057	6.171547	463
VOA	-0.509	-0.352	0.975552	-2.226	0.756530	463
GEF	-0.697	-0.686	1.056994	-2.163	0.633240	463
PSAV	-0.411	-0.280	1.200234	-2.665	0.856504	463

Source: Researcher’s computation (2020)

**Interpretation.** From Table 1, **MNIVI** has a mean value of 4.356 and standard deviation of 6.057. The mean value of 4.365 Billion Dollar investment inflow on average to SSA is small but positive which means that averagely SSA countries have been experiencing a positive increase in MNIVI through the level of the growth is low. This implies that the effort of countries in sub-Saharan Africa to attract MNIVI is yielding a positive increase however at a very low and slow pace. Although some countries still experience negative growth as regard to MNIVI as shown by a minimum value of -6.17 Billion Dollar negative

investment inflow (divestment) which implies outflow of investment capital rather than an inflow. The highest investment or investment capital inflow received by any country in Sub-Saharan in the periods covered in this study which is from 2004 to 2018 was 65.16 Billion Dollars in capital inflow. Also, there were about 6.171 Billion Dollars worth of investment deviation from the midpoint.

**VOA:** The mean value of Voice and Accountability is -0.509 and the standard deviation of 0.756. The mean of -0.509 for Voice and Accountability shows that on average countries in SSA have weak measures of citizens participation in governance and freedom of expression which expresses the perception of the extent to which a country's citizens are able and allowed to participate in the democratic process in selecting their government, freedom to express self, associate and free media. The country with the best score has 0.9755 of the possible maximum score of 2.5 while the least score is -2.226 in relation to voice and accountability.

**GEF:** Government effectiveness (GEF) measures the efficiency, effectiveness and the quality of public services, the quality of civil services, and the degree of independence from political pressure, the quality of political formulation and implementation and the credibility of the government's commitment to such policies. The mean value of this measure is -0.697, while the max and min values are 1.05 and -2.163 respectively. The standard deviation is 0.633 which represents the movement from the mean value, this suggests a medium dispersion from the mean value.

**PSAV:** Political stability and Absence and Violence (PSAV). The mean measure is -0.411 which represents the average performance of SSA countries as it relates to political stability, ease of government transition, successful democratic processes, and relative peace. The maximum value stands at 1.200 and the minimum at -2.665 while the dispersion stood at 0.8565 respectively, this represents a wide dispersion from the average performance. This means some countries are doing fairly well in this regard while other countries are not doing so well.

## Inferential Analysis

**Table 3. SGMM result for the tested hypothesis**

	(EQ1)
VARIABLES	System GMM
L.lnMNI VI	0.223
	(0.180)
VOA	-0.802*
	(0.477)
GEF	-18.303**
	(8.087)
L.GEF	20.420**
	(8.947)
PSAV	-0.051
	(0.239)
Constant	1.868***
	(0.545)
<b>Observations</b>	598
<b>Number of crossid</b>	48
<b>Wald chi2</b>	24.260

<b>Wt P-Value</b>	0.000
<b>AR<sub>1p</sub></b>	0.0102
<b>AR<sub>2p</sub></b>	0.182
<b>Hansenp</b>	0.725
<b>Sarganp</b>	0.748

Note: The first value of each variable represents their coefficients while standard errors in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$  Table 2 reports the system general method of moment SGMM results of the effect of governance quality on multinational investment inflows in Sub-Sahara Africa. The dependent variable is multinational investment inflows. The independent variables are: Voice and Accountability (VOA), Government Effectiveness (GEF) and Political Stability and Absence of Violence (PSAV). Source: Researcher's computation (2020)

$$\ln gMNIVI_{it} = \beta_0 + \log MNIVI_{it-1} + \beta_1 VOA_{it} + \beta_2 GEF_{it} + \beta_3 PSAV_{it} + \mu_{it} \quad \text{Equation i}$$

$$MNIVI_{it} = 1.867808\beta_0 + 0.22328MNIVI_{it-1} - 0.801683VOA_{it} - 18.303GEF_{it} - 0.05085PSAV_{it}$$

**Interpretation.** To determine the appropriateness and validity of the obtained results of the estimated regression in model 1 the study carried out the required statistical diagnostics tests in System General Method of Moment to ascertain conformity with the assumptions of SGMM as provided for in the estimation method; hence, the analysis begins by interpreting the diagnostics tests carried. It is important to note that SGMM does not assume normality and it allows for heteroskedasticity in the data. Dynamic panel models generally exhibit a common problem with the heteroskedasticity of data, which auspiciously SGMM can control (Baltagi, 2008). Accordingly, the study reported two-step estimates that yield theoretically robust results (Roodman, 2006).

Therefore the study carried out *Sargan and Hansen*, these are the two import diagnostic test in GMM analysis, one of the assumptions of SGMM is that the twice-lagged residuals are not autocorrelated; hence the study tested for autocorrelation in the error terms, which is also a test for the validity of instruments. The study also carried out *AR1* and *AR2* procedure tests respectively which is a test for first and second-order residual autocorrelation. Arrelano and Bond (1991), the GMM estimator requires that there is a first-order serial correlation (*AR1 test*) but that there is no second-order serial correlation (*AR2 test*) in the residuals. Since the null hypotheses are that there is no first-order (*AR1 test* 0.0102), but there should be a second-order serial correlation (*AR2 test* 0.182), it means that one needs to reject the null hypothesis in the *AR1 test* but *not* to reject it in the *AR2 test* to get appropriate diagnostics.

The null hypothesis of the *Sargan test* is that the specified variables are proper instruments, which means that the set of examined instruments is exogenous. Data provided in Table 3 shows that the model specification passes the tests. *The Sargan tests* the null hypothesis of correct model specification and valid overidentifying restrictions, which is a test for the validity of instruments (Baum, 2006). *The Hansen test* of overidentifying restrictions does not reject the null at any conventional level of significance ( $P=0.748$ ); hence, it is an indication that the model specified has valid instrumentation.

*The Hansen J-test* evaluates the entire set of overidentifying restrictions instruments. It is also important to test the validity of subsets of instruments (i.e. levels, differenced, and standard IV instruments). For this purpose, the study use *difference-in-Hansen test*, also known as the *C-test* (Baum, 2006; Roodman, 2006). The null hypothesis of the *Sargan/Hansen test* is that the specified variables are proper instruments, i.e. that the set of examined instruments is exogenous. The result provides that there is not enough evidence to

reject the null hypothesis of exogeneity of any GMM instruments used, i.e. levels and differenced instruments, as well as the validity of standard IV instruments. First of all, the number of instruments should not exceed the number of observations, which is the case here (10 instruments < 598 observations). Second, a tall tale sign is a perfect *Hansen J-statistic* with the p-value equal to 1.00. At the same time, the p-value should have a higher value than the conventional 0.05 or 0.10 levels, at least 0.25 is suggested by Roodman (2007). In our model, the *Hansen J-test* reports a p-value of 0.748, which satisfies both rules. Considering together the various post estimation tests that have been conducted, the study concludes that there is enough evidence to conclude that the examined statistical tests satisfy the key assumptions of SGMM estimation and that this model is an appropriate statistical generating mechanism to test the stated hypothesis.

From the estimated equation, it is observed that the lag of Multinational Investment inflows (MNIVI) was positively related to the current value. An increase in one period lag of MNIVI induced about 0.22% increase in the current value of MNIVI. This relationship is however not statistically significant, as the p-value of the z-statistic of 0.215 is greater than the 0.05 level of significance. The relationship between Voice and Accountability (VOA) and MNIVI were negative. From the estimate, an increase (decrease) in VOA by 1 unit induced a decline (increase) in MNIVI by 80%. This relationship was not statistically significant at 1 and 5 per level of significance however significant at 10%, given that the p-value of the z-statistic of 0.093 is greater than the 0.05 but less than 0.1 level of significance. Government effectiveness (GEF) is also negatively related to MNIVI. From the estimate, an increase (decrease) in the GEF of 1 index induced a decrease (increase) in MNIVI by about 1830%. This is statistically significant at the 0.05 level of significance. Finally, Political stability and the Absence of Violence (PSAV) was negatively related to MNIVI. This implied that an increase (decrease) in PSAV by 1 index induced a decrease (increase) in MNIVI by about 5%. This relationship is not statistically significant given that the p-value of the z-statistic of 0.831 is greater than all conventional levels of significance. However, the combined variables of governance quality on multinational investment inflow (24.26): A unit change in regulatory quality is associated with about 24.26 units increase in multinational investment inflow in Sub-Africa in the short-run, at all conventional level of significance 1%, 5%, and 10% on average *ceteris paribus*. By the probability value of the Wald Chi-Square at 0.000, the overall effects of the lag of MNIVI, VOA, GEF and PSAV were statistically significant.

### Decision Rule

The P-value of Wald Chi-Square Statistics of (0.000) significant at all conventional levels of significance indicate that Governance quality has statistically significant effect on multinational investment inflows in Sub-Saharan Africa. Thus, the study rejects the null hypothesis that Governance quality does not have a statistically significant effect on multinational investment inflows in Sub-Saharan Africa and accept the alternative hypothesis that Governance quality exerts a statistically significant effect on multinational investment inflows in Sub-Saharan Africa.

### Discussion of Findings

The objective of this study was to examine the effect of governance quality on multinational investment inflows in Sub-Saharan Africa, in line with the stated objective this section discusses the findings of governance quality on multinational investment inflows in Sub-Saharan Africa. The Governance quality was proxy by Voice and Accountability (VOA), Government effectiveness (GEF) on Political stability, and Absence of Violence (PSAV). The empirical evidence as provided by the value of Prob. Chi-Square of Wald statistics which shows that governance quality exerts a statistically significant impact on the inflow of

multinational investments in Sub-Saharan Africa. This significant impact implies that Sub-Saharan Africa attracting investments from multinationals is premised on quality governance among other things. Before a multinational will choose any location to do business, such a firm would have assessed the political risk of the host the economy they are going to be exposed to, risk such as democratic level of the host economy and also measures the hostility of such an environment. The World Bank governance index put it has. Voice and Accountability (VOA), which measures citizens participation in governance and freedom of expression, Voice and Accountability (VOA) express the perception of the extent to which a country's citizens are able and allowed to participate in the democratic process in selecting their government, freedom to express self, associate, and free media. These capture the investment climate in this regard. Government effectiveness (GEF) measures the efficiency, effectiveness and quality of public services, the quality of civil services and the degree of independence from political pressure, the quality of political formulation and implementation, and the credibility of the government's commitment to such policies. The business will be interested to know how quickly they can get things done with the government as it relates to time to get a response from the government with regards to licensing, registration, and other paperwork at the introductory stage of their business in the host country and subsequent interactions, these include Political stability and Absence and Violence (PSAV). No corporate entity will locate in a politically unstable and violence have driven environment except of course they benefited from it. Therefore, it is imperative for a business entity going global to consider the political stability and relative peace of the business environment. The combinations of these factors as shown in our study are critical, gemmy, and crucial consideration for any multinationals to locate in any economy among other factors. Therefore lending from signaling theory an environment with quality governance will aid investment from multinationals and other investors why states with weak governance will repeal such investment. The strength or weakness in the quality of governance is a signal to existing investors and prospective investors communicating the terrain of the investment climate as regards governance and are therefore considerable factors in the location decisions.

The findings in this study are consistent with IMF report (2003), World Bank(2000), Alesina and Dollar (2000) which suggest that the quality of domestic governance has a quantitatively important impact on a country's ability to attract foreign investors who prefer to invest in countries with good governance. The findings in this study is also supported by the empirical findings of Hassen (2018) which posited that institutional quality, and natural resources, each play a significant role in attracting foreign capital flow to the host economy, other empirical findings such as Jude and Levieuge (2013). Suggested that weak governance quality is associated with lower investment, low productivity growth, low per capita income, and overall slower output growth Good institutions reduce production and transaction costs (North, 1990), and as a result, increase profitability and economic activity, whereas poor and weak institutions increase the uncertainty and costs of production (Cuervo-Cazurra, 2006, 2008).

In the opinion of Adeleke (2014), Dupasquier and Osakwe (2006) which are in conformity with the findings of our study mentioned poor governance as one of the many reasons responsible for the Sub-Saharan Africa region's inability to competitively attract external capital, similarly, Esey and Yaroson (2014) underscore the significance of the same factor, but for the specific case of Nigeria. Harms and Ursprung (2002), Jensen (2003), and Busse (2004) in their various studies found that multinational corporations are more likely to be attracted by countries in which democracy is respected. Li and Resnick (2003) found that democratic rights lead, above all, to improved property rights protection, which in turn boosts foreign investment inflow. The findings of this study are also in line with the *a priori*

expectation of the study of a significant positive interaction between governance quality and multinational investment inflow.

In line with the findings of this study, we therefore recommend that government of Sub-Sahara Africa should improve their scores of governance quality by improving accountability and stewardship, efficiency of governance and public institutions, maintain economic and political stability and peace.

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