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## Effect of Government Effectiveness on Economic Growth: Evidence from Sub-Saharan Africa

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### ABSTRACT

The absence of good governance has been causing the stagnant economic growth of sub-Saharan Africa. Government effectiveness is one of the indicators of good governance and is considered a paramount condition for economic growth. The main objective of this study was to investigate the effect of government effectiveness on economic growth using panel data from 40 sub-Saharan African countries spanning from 2008 to 2021. After conducting the Hausman Model specification test between random and fixed effects models, the fixed effects regression model was employed. The main finding of this study shows that government effectiveness positively and significantly influences economic growth in sub-Saharan Africa. Sub-Saharan countries are recommended to improve their governance and administrative efficiency for the betterment of economic growth and prosperity.

### INTRODUCTION

Good governance has been widely discussed and applied in various fields of study since the World Bank first used the concept of good governance in its 1989 report (Huang & Ho, 2017). Many international organizations, such as the World Bank, the United Nations, the Organization for Economic Cooperation and Development, and the International Monetary Fund have emphasized the importance of good governance for improving the citizens' economic and sociopolitical life.

The absence of good governance in major parts of sub-Saharan Africa has been the cause of stagnant economic growth and low poverty reduction. Government effectiveness is one of the paramount conditions for promoting economic growth and poverty reduction in developing and developed countries. As defined by Kaufmann (2010), government effectiveness deals with the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

In contrast to the solid success of other developing countries, Sub-Saharan Africa's (SSA) aggregate economic performance has remained unsatisfactory during the last decade and poverty and inequality remain rising (Adeleye *et al.*, 2020; Amponsah *et al.*, 2023). Internal shocks such as inappropriate and inconsistent policy regimes, corruption, ethnic conflicts, and long-running civil wars, political instability, adverse security conditions, complex administrative and institutional frameworks, and weak institutions have all contributed to this poor performance. These internal shocks are caused by governance concerns that are either directly or indirectly related and are exacerbated by government inefficiency

(Omoteso & Mobolaji, 2014).

Government effectiveness is the indicator of good governance, and it can simply mean how effectively a government performs its job and promotes the public good, which is broadly defined as the enforcement of law and order, the collection of revenue, and the allocation of resources to meet specific demands, the provision of infrastructure and the promotion of human rights (Aloui *et al.*, 2024). One of the most striking differences between the economies in advanced countries and in developing countries is in the role of the public sector, the former typically having a relatively large public sector with a substantial commitment to public health, public education, infrastructure, and social security, whereas in developing countries these programs either do not exist or do not entail broad population coverage (Arora & Chong, 2018).

Governments with more sound public policies and public administration are likely to be the ones that can achieve socio-economic development goals with fewer resources (Sagarik, 2017). Many studies have been conducted on the effects of governance on economic growth using all the indicators of good governance developed by the World Bank, and few studies have been conducted on the effects of government effectiveness on economic growth, showing the existence of literature scarcity on this topic. In addition, there is no consensus on the effects of government effectiveness on economic growth. Few of them say there is no direct relationship between government effectiveness and economic growth, as an example (Iskandar *et al.*, 2023; Kurtz & Schrank, 2007). However, most of the literature supports the significant effect of good governance on economic growth.

Hence, this study was conducted to fill the literature gap on the effects of government effectiveness on economic

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growth using panel data from 40 sub-Saharan African states spanning from 2008 to 2021.

## Theoretical Review

### Institutional Theory

Governments and institutions are humanly devised constraints that shape human interactions, affecting economic agents' incentives (Bedane & Kitege, 2017). The link between governance and growth can best be explained using the institutional economics framework (Gani, 2014). Institutions are categorized as formal and informal institutions. Formal institutions refer to laws and regulations that are often examined in the context of national governance indicators (Kaufmann *et al.*, 2010). They encompass indicators, including the rule of law, regulatory quality, government effectiveness, voice and accountability, political stability, and absence of violence (Boateng *et al.*, 2024). The institutional economist also considers government quality and effectiveness as the most important factors of economic growth and equitable income distribution (Aloui *et al.*, 2024).

Good institutions would ensure the enactment of policies favorable to the efficient use of funds acquired through debt in investment projects that would foster long-run growth. Moreover, good institutions could reduce uncertainty for the private sector by directing resources towards enhancing the business environment and infrastructure that would facilitate private investment to drive economic growth (Kemoe & Lartey, 2021).

To conclude, according to institutional theory, economic performance and development outcomes are highly influenced by the nature and structure of institutions. This theory emphasizes how government effectiveness — which includes the caliber of public services, civil service capacity, policy creation and implementation, and government dedication to those policies — directly influences economic growth in sub-Saharan Africa. Effective governments can promote economic activity, attract investment, encourage innovation and increase productivity by maintaining political stability, upholding the rule of law, and eliminating corruption. Therefore, applying institutional theory to this area underlines the importance of strong and effective government institutions in removing barriers to development and promoting long-term economic progress.

### Empirical Review

Different empirical studies have been conducted on the effect of good governance on economic growth, though limited literature is available on the effect of government effectiveness on economic growth. For instance, a study conducted by Azam (2022) on the impact of good governance specifically using good governance indicators such as corruption, government effectiveness, and political stability along with macroeconomic variables such as trade openness and foreign direct investment on economic growth using panel data of 14 countries located on the Latin America and Caribbean. The

autoregressive distributed lag method was employed, and the study found a positive relationship between government effectiveness and political stability. In support of this, the study by Cooray and Nam (2024) which conducted on the relationships between public social spending, government effectiveness, and economic growth using panel data covering 132 developed and developing countries over the 2008 to 2019 period found a positive relationship between government effectiveness and economic growth.

A study was also conducted by Gani (2014) to test whether governance matters for the economic growth of developing countries captured within the theoretical framework of institutional economics using the panel data estimation procedure. In doing so, it tests the effect of several governance dimensions on the growth of 84 low and middle-income economies using regression specifications. The empirical results from this study show that political stability and government effectiveness are significantly positively correlated with growth, and government effectiveness is considered an enhancing indicator among the governance indicators; in addition, a study conducted by Bedane and Kitege (2017) on the impact of government effectiveness on the economic growth employing system GMM technique for the panel of 81 countries. This study found that government effectiveness significantly positively affects economic growth.

Furthermore, a study was done by Prasetyia (2020) on the impact of Good Governance and Economic Growth: Empirical Evidence from ASEAN 10 using six indicators of good governance. Fixed effect and pooled ordinary least square tests were employed, and the result shows that government effectiveness and the rule of law have a positive and significant relationship with economic growth. In line with this study, a study conducted by Mahran (2023) used spatial regression models to estimate the impact of governance on economic growth in a sample of 116 countries worldwide in 2017. The result found a significant relationship between governance and economic growth.

In contrast to the hypothesis that good governance, specifically government effectiveness, improves economic growth, the study by Kurtz and Schrank (2007) shows that government effectiveness doesn't significantly matter for economic growth. In addition, the study conducted by Iskandar *et al.* (2023) on the influence of institutions on economic growth in 5 East Asian countries using data collected from 2005-2020 and analyzed by dynamic panel data using the Generalized Method of Moment Arellano-Bond approach shows voice and accountability, political stability and absence of violence, government effectiveness, and rule of law had no influence on economic growth in East Asia. This shows the existence of debate in the literature, which is inconclusive on the effect of governance indicators, particularly government effectiveness, on economic growth.

In addition to literature inconclusiveness on the effect

of good governance indicators on economic growth, enough works of literature are not available particularly on the effect of government effectiveness on the economic growth of sub-Saharan countries. Hence, this study was conducted to fill this literature gap on the effect of government effectiveness on economic growth in sub-Saharan African countries.

**MATERIALS AND METHODS**

**Data and its Source**

This study used panel data spanning from 2008 to 2021 for 40 sub-Saharan African states. Due to data unavailability, all sub-Saharan African states are not included in this study. All data used in this study was accessed from the World Bank World Development Indicators database. The

**Table 1:** Description of Variables

Name of variables	Description
GDP per capita (GDPpc)	The annual percentage growth rate of GDP per capita is based on constant local currency. GDP per capita is gross domestic product divided by midyear population. Accessed from World Development Indicators. Measured by the current US dollar. Its expected sign is positive.
Government Effectiveness	Change to Government Effectiveness measured using the established index obtained from the World Governance Indicators (WGI) ranging from -2.5 up to 2.5. It shows the perceptions of the quality of public services or the civil service, the quality of policy formulation and implementation, the degree of independence from political pressures, and the competence of the civil service. Its expected sign is positive.
Current Health expenditure %GDP	The level of current health expenditure is expressed as a percentage of GDP. Accessed from World Bank Development Indicators. Its expected sign is positive.
Official development Assistance (ODA)	Net Official Development Assistance (ODA) per capita consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients. It is calculated by dividing the net ODA received by the midyear population estimate. Its expected sign is positive. Accessed from World Bank Development Indicators
Foreign Direct Investment(FDI)	Foreign Direct Investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital, as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors and is divided by GDP. Accessed from World Development Indicators. Its expected sign is positive.
Trade openness	The degree of openness or accessibility of a country’s economy with other Countries in order to exchange goods and services. It’s calculated by dividing the summation of exports and imports by total GDP. Accessed from World Development Indicators. Its expected sign is positive.

descriptions of variables and their sources are indicated in Table 1.

**Model Specification**

The dependent variable is economic growth measured by GDP Percapita (GDPpc), and the independent variable is Government effectiveness measured by government effectiveness score (GE) developed by World Bank World Governance Indicators. Control variables that have a potential effect on economic growth are also included. Those are foreign direct investment (FDI), Official development assistance (ODA), health expenditure (Hexp), and Trade openness (TO). The inclusion of that control variable is based on the literature. Extant literature suggests that international flows such as Foreign Direct Investment (FDI), foreign aid, and foreign trade

are viable vehicles for economic growth, and they are included in this study as control variables. Both GDPpc and Official development assistance are converted to logarithmic form for simplicity of analysis.

$$\ln GDP_{pcit} = \beta_0 + \beta_1 GE_{it} + \beta_2 TO_{it} + \beta_3 \ln ODA_{it} + \beta_4 Hexp_{it} + \beta_5 FDI_{it} + \epsilon_{it}$$

Where  $\ln GDP_{pc}$  and  $\ln ODA$  referring logarithmic form of Growth domestic product per capita and official development assistance, respectively, GE and TO indicate government effectiveness and Trade openness respectively. ER, FDI, and Hexp indicate Employment rate, foreign direct investment, and health expenditures, respectively.  $\beta_1, \beta_2, \dots, \text{and } \beta_7$ , indicates the regression coefficients.  $\beta_0$  refers to the constant and  $\epsilon_{it}$  Show stochastic error term. The subscript it indicates the country and time dimensions of panel data, respectively.

**RESULTS & DISCUSSION**

**Descriptive Statistics**

As shown in Table 2, the total number of observations for the study is 560, and it is acceptable for panel data analysis. The mean which measures the average also indicated. The mean for GDPpc is 7.25, and government effectiveness has a mean average of -0.783. The negative sign of government effectiveness mean indicates the low performance of Sub-Saharan countries on the government effectiveness. For majority of sub-Saharan Africa, their government effectiveness score is negative.

The maximum and minimum value for GDPpc is between 5.272 and 9.896, and that of government effectiveness is between -1.879 and 1.15.

In addition, mean and range of other control variables are also indicated in the above table. For instance, the mean for FDI is 3.331, and the range is between -17.292 and 37.323. Official development assistant has a mean of 20.06, ranging from 12.612 to 22.455. Health expenditure has a mean of 112.68, and its range is between 12.28 minimum values and 694.101 maximum values.

**Table 2:** Summary of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
lnGDPpc	560	7.25	.957	5.272	9.896
GE	560	-.783	.6	-1.879	1.15
TO	560	66.302	27.289	4.128	161.127
FDI	560	3.331	4.457	-17.292	37.323
lnODA	560	20.06	1.315	12.612	22.455
Hexp	560	112.68	139.223	12.28	694.101

Source: Authors Computation

**Correlation Results**

Correlation is a measure of an association between variables, in which the change in the magnitude of one variable is associated with a change in the magnitude of another variable, either in the same (positive correlation)

or in the opposite (negative correlation) direction(Schober & Schwarte, 2018). The Pearson correlation coefficient (r) is the most common way of measuring a linear correlation and its results are shown in the following table indicating the relationship between predictors and outcome variables.

**Table 3:** Pairwise Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) lnGDPpc	1.000					
(2) GE	0.490	1.000				
(3) TO	0.489	0.261	1.000			
(4) FDI	0.010	0.024	0.228	1.000		
(5) lnODA	-0.483	-0.033	-0.493	-0.036	1.000	
(6) Hexp	0.785	0.632	0.404	-0.036	-0.395	1.000

Source: Authors Computation

The results show that all the correlation coefficients at the diagonal are unitary, showing that each variable has a perfect positive correlation with itself. Apart from official development assistance, all variables have positive correlations with GDP per capita. Except health expenditure, there are weak correlations between the independent variables and dependent variables which is the prime indicators of the absence of multicollinearity.

statistical support for a random effects model, whereas rejecting the exogeneity assumption supports a fixed effects specification. Choosing the right econometric framework is critical for accurately estimating the connection of interest(Adkins *et al.*, 2012; Amini *et al.*, 2012).

**Hausman Test**

The selection of the appropriate econometric framework is crucial for accurately estimating the relationship of interest. The Hausman test, often known as a test of the exogeneity assumption, is a formal statistical assessment of whether the unobserved individual effect is correlated with the model's conditioning regressors. Failure to reject the exogeneity of the unobserved individual effect gives

**Table 4:** Hausman Specification Test For Fixed Effects And Random Effects Model

	Coef.
Chi-square test value	27.96
P-value	0

Source: Authors Computation

In the Hausman test, the null hypothesis is that the preferred model is random effects vs. the alternative, the fixed effects. It basically tests whether the unique errors

are correlated with the regressors, the null hypothesis is they are not. From our analysis above, the p-value of chi-square test is equal to zero rejecting the null hypothesis and accepted fixed effect model for regression analysis.

**Fixed Effects Model**

The fixed effect regression approach reduces selection bias when estimating causal effects in observational data by removing potentially confounding variables (Mummolo & Peterson, 2018). Many researchers use these models to adjust for unobserved, unit-specific, and time invariant confounders when estimating causal effects from observational data (Imai & Kim, 2019). It use within observation variation to identify coefficient estimates, which is advantageous for mitigating

certain endogeneity concerns and ruling out spurious relationships (Shaver, 2019).

Fixed Effects model helps in the analysis of the effect of variables that are time-invariant. Fixed effects model explores the connection between independent and predicted variables within an entity. Fixed effects model permits consideration of the heterogeneousness that exists among each individual (in this case, each country), by making room for each entity to own its intercept value. The term ‘fixed effects’ is concerned with the fact that although the intercept could vary across countries, each individual’s intercept does not change overtime. It also assumed that the slope coefficients of the regressors do not vary across countries or overtime (Oloyede *et al.*, 2021).

**Table 5:** Fixed Effect Regression Result

lnGDPpc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
GE	.186	.062	3.01	0.003	.065	.307	***
TO	.000231	.001	0.30	0.767	-.001	.002	
FDI	.000364	.002	0.17	0.868	-.004	.005	
lnODA	.051	.019	2.66	0.008	.013	.089	***
Hexp	.003	0	9.56	0.000	.002	.003	***
Constant	6.051	.388	15.60	0.000	5.289	6.813	***
Mean dependent var		7.250	SD dependent var			0.957	
R-squared		0.172	Number of obs			560	
F-test		21.465	Prob > F			0.000	
Akaike crit. (AIC)		-316.929	Bayesian crit. (BIC)			-290.961	

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

The fixed effect model regression results show that both government effectiveness and health expenditure positively and significantly impact GDPpc. The relationship between government effectiveness and economic growth supports previous literature (Azam, 2022; Bedane & Kitenge, 2017; Cooray & Nam, 2024; Gani, 2007); those assuming government effectiveness positively and significantly influences economic growth. The result indicates that in the unit increase of government effectiveness, the economic growth of sub-Saharan Africa increases by 0.186, which is a slightly small change. This indicates though government effectiveness significantly and positively influences the economic growth; the rate at which it influences is low. Our result also supports the hypothesis that government effectiveness improves economic growth and poverty and rejects the hypothesis of government effectiveness does not improve economic growth for instance, (Kurtz & Schrank, 2007).

Trade openness has a positive but insignificant relationship with economic growth. This is not the only case in our research and it matches different studies in the literature. For instance the study of Oloyede *et al.* (2021) also found positive and insignificant relationship between economic growth and trade openness. The positive sign of trade openness with economic growth indicates that economic growth increases when the country’s economy is open.

Health expenditure has positive and significant influence

on economic growth. This is in support of the literature for instance (Alwago, 2023; Wang, 2011) which indicates the positive relationship between health expenditure and economic growth. This result also in line with the idea of endogenous growth model which postulates economic growth is a function of human capital, which becomes more effective because of better education, better health, and technological innovation.

Foreign Direct Investment has positive but insignificant effects on economic growth at 5% significance level. The positive sign of its coefficient indicate the existence of positive relationship with economic growth. The positive effects of foreign direct investment on economic growth show that, when there is an increment of foreign direct investment in sub-Saharan Africa, economic growth also increases. However, according to the above result, the rate of change of economic growth with foreign direct investment is very low. This study is in line with (Borensztein *et al.*, 1998) and other studies which supports as foreign direct investment enhance economic growth. In addition, this study also supports the study of Youness and Abderrahim (2024) on the impact of Foreign Direct Investment on wealth creation in Morocco.

Furthermore, the regression coefficient of official development received also positive. It significantly influences the economic growth of sub-Saharan Africa at 5% significance level. This result also in line with

literature (Dan & Binh, 2019; Lee *et al.*, 2020) which found positive effect of official development assistance on economic growth.

**Diagnostic Tests**

**Heteroscedasticity Test**

Heteroscedasticity is a problem that arises in regression analysis for a variety of causes. This problem impacts both the estimation and test procedures, and it is therefore critical to detect and address the problem (Abdul-Hameed & Matanmi, 2021). Breusch Pagan Test was introduced by Trevor Breusch and Adrian Pagan in 1979 (Breusch & Pagan, 1979). It is used to test for heteroskedasticity in a linear regression model and assumes that the error terms are normally distributed. It tests whether the variance of the errors from a regression is dependent on the values of the independent variables.

The null hypothesis of the Breusch Pagan test the homoscedasticity is present which means the error terms are distributed with equal variance. The alternative hypothesis says heteroscedasticity is present which mean the residuals are not distributed with equal variance. According to this test if the p-value of the chi square tests greater than 0.05, it means the existence of homoscedasticity and the absence of heteroscedasticity. From the following table the p-value of chi square tests are greater than 0.005 and shows the absence of heteroscedasticity.

**Table 6:** Breusch-Pagan/Cook-Weisberg Test for Heteroskedasticity

Ho: Constant variance
Variables: fitted values of lnGDPpc
chi2(1) = 1.34
Prob > chi2 = 0.2471

As shown in Table 6, the p-value of chi square tests are greater than 0.05, and it shows the absence of heteroscedasticity. This means the null hypothesis of the Breusch Pagan test accepted and the alternative hypothesis - existence of heteroscedasticity rejected. This implies that our data is free from heteroscedasticity problem.

**Multicollinearity Test**

Multicollinearity is a potential problem in all regression analyses. It is a statistical phenomenon in which a strong or perfect relationship exists between the predictor variables (Oke *et al.*, 2019). One such multicollinearity diagnostic is the variance inflation factor(Thompson *et al.*, 2017). High Variance Inflation Factor is the sign of the existence of multicollinearity (Murray *et al.*, 2012). Generally it's recommended that Variance Inflation Factor less than 10 is acceptable.

As shown in the table 7, the average Variance Inflation Factor for all independent variables of this study is 1.666 which is acceptable since its value is small. This shows our result is free from the problem of multicollinearity and there is no perfect or strong collinearity among the predictor variables.

**Table 7:** Variance Inflation Factor (VIF)

	VIF	1/VIF
Hexp	2.228	.449
GE	1.879	.532
lnODA	1.587	.63
TO	1.553	.644
FDI	1.083	.923
Mean VIF	1.666	.

Source: Authors Computation

**CONCLUSION**

Good governance has been recognized as the enabler of economic growth and has been repeatedly shown in the literature. This study was conducted on the effect of government effectiveness on economic growth using 14 years of panel data spanning from 2008 to 2021 for 40 sub-Saharan Africa. The fixed effects regression model was employed. The main findings of this study show government effectiveness positively and significantly influences economic growth in sub-Saharan Africa. The result supports the hypothesis that good governance significantly affects economic growth by rejecting the hypothesis that good governance does not significantly impact economic growth. This implies that by improving their government effectiveness, sub-Saharan countries will improve their economic growth.

**Policy Implications**

The research findings indicate a significant positive effect of government effectiveness on economic growth in Sub-Saharan African countries. This implies that improving governance and administrative efficiency can foster economic development and prosperity in the region. Based on these insights, sub-Saharan African countries are recommended to improve their institutional capacities. Governments of those countries should prioritize investments in building institutional capacity, including enhancing public sector management, improving regulatory frameworks, and strengthening the rule of law. This can create a conducive environment for business operations, attract domestic and international investments, and stimulate economic activities.

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