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IMPACT OF GOVERNMENT CORRUPTION AND ECONOMIC GROWTH IN SUB-SAHARAN COUNTRIES

Abstract

Objective: This research aims to investigate the effectiveness of government in sustainable economic growth and its impact on the control of corruption in selected sub-Saharan African (SSA) countries between 2002 and 2017.
Research Design & Methods: In this study, the independent variables included in the model, Control of Corruption (CONC), Government Effectiveness (GEFF) and Rule of Law (RLAW), were investigated using panel data analysis to investigate their possible effects on the Annual GDP Growth Rate as the dependent variable. Data obtained from selected SSA countries were used in the model to analyse possible relationships between these variables in the specified period.
Findings: The findings show that controlling corruption is not statistically significant but negatively affects economic growth in SSA countries. Conversely, the rule of law is statistically significant and negatively impacts these countries.
Implications/Recommendations: The results highlighted the necessity of strengthening the institutional structures and controls to increase the positive effects of government effectiveness and corruption control on economic growth in SSA countries. Similarly, in line with the results obtained from this study, governments in the region are recommended to prioritise strengthening their institutional structures to promote economic development.

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Contribution: This study draws attention to the critical role of a properly functioning legal system and the rule of law in SSA countries, as well as to economic growth, and contributes to the existing literature in this context. In addition, the detrimental effects of weak institutional structures on the relationship between the control of corruption and economic performance in the region are also highlighted. Ultimately, the research highlights the need for joint initiatives and efforts to address governance challenges and promote sustainable economic development in SSA countries.

Keywords: sub-Saharan African countries, panel data, corruption, government effectiveness.
JEL Classification: G3, N17, C33.

1. Introduction

Some of the key factors responsible for differences in economic growth between countries are population, geography, trade, culture, and governance and institutions (United Nations, 2015). Based on new growth theories, for sustained economic growth to occur, good public governance is essential (Bayar, 2016). Although we do not have a precise meaning of what governance is, Kaufmann, Kraay and Mastruzzi (2010) view governance as the means whereby authority in a country is exercised through traditions and institutions. Therefore, governance is seen as 1) the process of selecting, monitoring and replacing governments; 2) the effective establishment and implementation of sound policies by the government; and 3) the respect of citizens and the state for the institutions that govern economic and social interactions. Corruption, however, can be defined as when entrusted power is abused and used for personal gain. It can be categorised as petty, grand, and political which depends on the total sum of funds lost and the sector in which the corruption takes place (Transparency International, 2018). This takes us to what is called government effectiveness.

Government Effectiveness is one of the World Governance Indicators (WGI) that measures the quality of the perception of public service, the quality of the civil service and how free they are from political pressure; the quality of policy formulation and implementation, and government's capability to implement policies. Other indicators of governance are political stability/absence of violence, voice and accountability, quality of regulation, rule of law, and control of corruption, all of which measure other functions of government. This research will therefore focus on how government effectiveness and corruption affect economic growth in sub-Saharan African (SSA) countries. In the literature we find that a high level of corruption is expected to lead to government ineffectiveness in any country which will, in turn, affect their economic growth. This was confirmed by Omoteso

and Ishola Mobolaji (2014) when they carried out a study on governance, corruption, and economic growth in SSA countries. They observed in their study that, on aggregate, sub-Saharan countries have not been performing well economically when compared to other developing countries. The reasons they gave for this underperformance were classified into two categories. One was external factors, and the other was internal factors. External factors included, among other factors, the global financial crisis and unfavourable terms of trade. The internal factors included corruption, ethnic conflicts, instability of the political environment, unstable and unbalanced policy regimes, civil unrest, security issues, weak institutions, and complex administrative and institutional frameworks.

Haydaroğlu (2016) further explained that one of the outcomes of institutional weakness is corruption, which leads to potential negative effects on the economic performance of a country. As a result of this effect, the reasons for and outcomes of corruption have been studied in detail over the last two decades. In this context, the problem of corruption has been a long-standing epidemic in Nigeria which is why a deliberate effort needs to be made to tackle the problem. Nigeria is one of the most richly endowed nations on Earth, blessed with a wide range of human and natural resources. If these resources were effectively utilised, Nigeria would have been one of the leading nations of the world in terms of growth, revenue and productivity (Ovat & Bassey, 2014).

Together with some other sub-Saharan countries like Guinea and Comoros, Nigeria ranks 148th out of 180 countries with a score of 27 out of 100 (CPI, 2017). The closer the mark is to 0, the more corrupt the nation is. In government effectiveness, Nigeria's percentile rank is 16.35 out of 100 countries in 2017. On the other hand, Botswana's economy tends to be doing well in terms of corruption and government effectiveness. Botswana is the leading African country in terms of low level of corruption, coming 34th with a score of 61 out of 100. Botswana was also ahead of Nigeria in terms of government effectiveness with a 68.75 percentile ranking. Rwanda is second to Botswana when it comes to the Corruption Perceptions Index. Rwanda ranks 48 out of 180 countries in the Corruption Perceptions Index and scores 63.46 in Government Effectiveness. Ghana, a West African country, ranks 81 out of 180 countries in the Corruption Perceptions Index and scores 49.04 in Government Effectiveness.

This research was therefore conducted to determine the impact of government efficiency and corruption on economic growth in the selected sub-Saharan African countries between 2002 and 2017. The period of

research is limited because of the data available. It is good to examine countries within the same region so as to know how well they are doing. The results of the examination will enable them to know the steps to take for further growth. It should be noted that the growth of countries differ from one another.

There are many studies on the effects of government efficiency and corruption on economic growth in Africa, but few studies have been able to examine the four SSA countries in this research.

Research Objective

The objective of the research is to find out how government effectiveness and control of corruption impacts economic growth in the selected SSA countries.

Research Questions

1. What impact does government effectiveness have on the economy of the selected SSA countries?
2. Does control of corruption impact economic growth in SSA countries?
3. What impact does rule of law have on the economy of SSA countries?

2. Literature Review

Brewer, Choi and Walker (2007) found in their study that factors such as voice and accountability, wealth and income, and control of corruption influence the effectiveness of the government. The study was about the impact government effectiveness has on economic growth in Asia, both regionally and across sub-regions using World Bank Governance Indicators.

Ishola Mobolaji and Omoteso (2009) picked some transitional economies to find out how economic growth is affected by corruption and some other institutional factors from 1990 to 2004. For the analysis, the panel data framework, random effect, fixed effect, and maximum likelihood estimation techniques were used. The results of the study show that corruption has a negative effect on the selected economies, which supports Mauro's (1995) hypothesis. However, the hypotheses of Leff (1964) and Huntington (1968) could not be supported because there was no robust statistical evidence to back them up.

Omoteso and Ishola Mobolaji (2014) carried out a study on some sub-Saharan African countries for the period 2002 to 2009, to find out how economic growth has been impacted by governance indices, focusing on

the control of corruption using the panel data, random effect, fixed effect, and maximum likelihood estimation methods for the analysis. The result of the study suggests that regulatory quality and political stability significantly impact the region, while government effectiveness negatively affects the region. Also, the effect of control of corruption is not obvious, even though several anti-corruption policies have been implemented. In addition, the study noted that economic growth in the region will be significantly affected if accountability and rule of law indicators are implemented simultaneously.

Nwankwo (2014), using granger causality and regression techniques, examined the effect of corruption on growth in the economy of Nigeria and discovered that the effects of corruption on economic growth are negatively significant. The variables used were the Transparency International Corruption Perceptions Index and gross domestic product.

Bayar (2016) carried out a study on transitional economies in the European Union from 2002 to 2013 using the panel data framework, fixed effects method, chow test, OLS, BP test, and random effects technique to examine the impact of public governance on economic growth. The study estimates that corruption control had a negative impact on the SSA countries' economies and all governance indicators caused a significant positive impact on economic growth. Weak effects were observed on political stability.

Using the bootstrap panel Granger causality approach, Huang (2016) examined whether economic growth was negatively impacted by corruption in 13 Asia-Pacific countries from 1997 to 2013. The result shows that corruption had positive causality on economic growth in South Korea. Positive causality from economic growth to corruption in China was also observed. A positive causal relationship between corruption and economic growth was observed in the remaining countries. They assumed that corruption brought some benefits to economic growth.

For a sample of 130 countries, Montes and Paschoal (2016) analysed the impact corruption had on government effectiveness and found out that countries that are less corrupt have a better quality of public service, better quality of policy formulation and adoption, and the governments of such countries are more credible and committed to such policies. Also, in developed countries, the effect of corruption on government effectiveness is higher. It was also observed that countries that had higher debts and inflation were less efficient in governance. The result also suggests that the rule of law helps improve the efficiency of the government and that

developing countries with more democratic regimes have a higher degree of efficiency of government.

Alam, Kiterage and Bizuayehu (2017) investigated the impact government effectiveness had on the economic growth of a panel of 81 countries using the system generalised moments method (system GMM) technique. The paper finds that the effectiveness of government has a significant positive effect on economic growth.

Pacific, Ramadhan and Gabriella (2017) used the autoregression model (VAR) to investigate the effects of tackling corruption on the economy of Botswana from 1996 to 2014. The results show that government effectiveness and exports of goods and services have a positive relationship with growth in gross domestic product. The control of corruption, though not significant, had a positive relationship with economic growth.

Awan *et al*. (2018) carried out a study on five selected SAARC countries using panel data from 1996 to 2014. The purpose of the research was to find out the association between governance, corruption, and economic growth. Panel regression was run using the fixed effects method of estimation based on Hausman specification test results. The fixed-effects model was also used with a specific cross-section coefficient. The findings show that two institutional governance indicators, namely government effectiveness and political stability, have a positive and substantial impact on the economy of the selected SAARC countries. Economic growth was negatively impacted by corruption. Corruption has an adverse effect on economic growth. In addition, the results show that the efficiency of the government has a greater influence than other governance indicators on GDP growth in selected SAARC countries. The results of the education index appeared to be important predictors of the growth of selected SAARC countries in the given period.

3. Data and Methodology

The data used for this study are sourced from World Governance Indicators of the World Bank from 2002 to 2017.

The econometric model used is similar to that of Pacific, Ramadhan and Gabriella (2017), and Montes and Paschoal (2016). Economic growth is proxied by Annual GDP Growth Rate (*GDPGR*) and it is expected to be impacted positively by Control of Corruption (*CONC*), Government Effectiveness (*GEFF*) and Rule of Law (*RLAW*). Corruption is proxied by

World Governance Indicators Control of Corruption (*CONC*). The model is simply stated below:

$$GDPGR = f(CONC, GEFF, RLAW). \quad (1)$$

The model therefore will be:

$$GDPGR = \beta_0 + \beta_1 CONC + \beta_2 GEFF + \beta_3 RLAW + \varepsilon_t. \quad (2)$$

Annual GDP Growth Rate is the dependent variable while the independent variables are Control of Corruption, Government Effectiveness and Rule of Law. From our model above, we expect that Control of Corruption (β_1) will impact economic growth positively and significantly, Government Effectiveness (β_2) and Rule of Law (β_3) are also expected to impact economic growth positively and significantly. However, if economic growth is negatively impacted by Control of Corruption, that will mean that the efficient grease hypothesis is present. ε is the error term while β is the coefficient. All the independent variables are measured in terms of estimates ranging from –2.5 to 2.5.

4. Model Estimation and Results

4.1. General Remarks

In this study, the effects of Control of Corruption, Government Effectiveness and Rule of Law on Annual GDP Growth Rate are examined. We analyse whether the estimated pooled OLS model is significant for the regression.

4.2. Descriptive Statistics

When normal skewness equals zero, then it is mesokurtic. When kurtosis equals three, then it is positively skewed. *GDPGR* is positively skewed and leptokurtic. *CONC* is negatively skewed and platykurtic. *GEFF* is negatively skewed and platykurtic while *RLAW* is also negatively skewed and platykurtic. *GDPGR* is not normally distributed while *CONC*, *GEFF*, and *RLAW* are normally distributed. The mean explains the average value for each of the variables. The median explains the middle value of each of the variables while the maximum and minimum explain the highest and the lowest values of each of the variables and the standard deviation explains the deviation from the sample mean (Table 1, Fig. 1).

Table 1. Descriptive Statistics

Specification	*GDPGR*	*CONC*	*GEFF*	*RLAW*
Mean	6.423739	–0.045543	–0.205461	–0.223738
Median	6.173016	–0.048127	–0.098069	–0.035065
Maximum	33.73578	1.216737	0.725896	0.730522
Minimum	–7.652310	–1.431231	–1.214644	–1.427206
Standard Deviation	4.864018	0.8012400	0.590132	0.683849
Skewness	2.382295	–0.139898	–0.265048	–0.228484
Kurtosis	17.68389	1.772017	1.803736	1.751787
Jarque-Bera	635.5142	4.229940	4.565467	4.711611
Probability	0.000000	0.120637	0.102005	0.094817
Sum	4,111.193	–2.914731	–13.14952	–14.31925
Sum Sq. Dev.	1,490.496	40.56231	21.94010	29.46191
Observations	64	64	64	64

Source: authors' estimation.

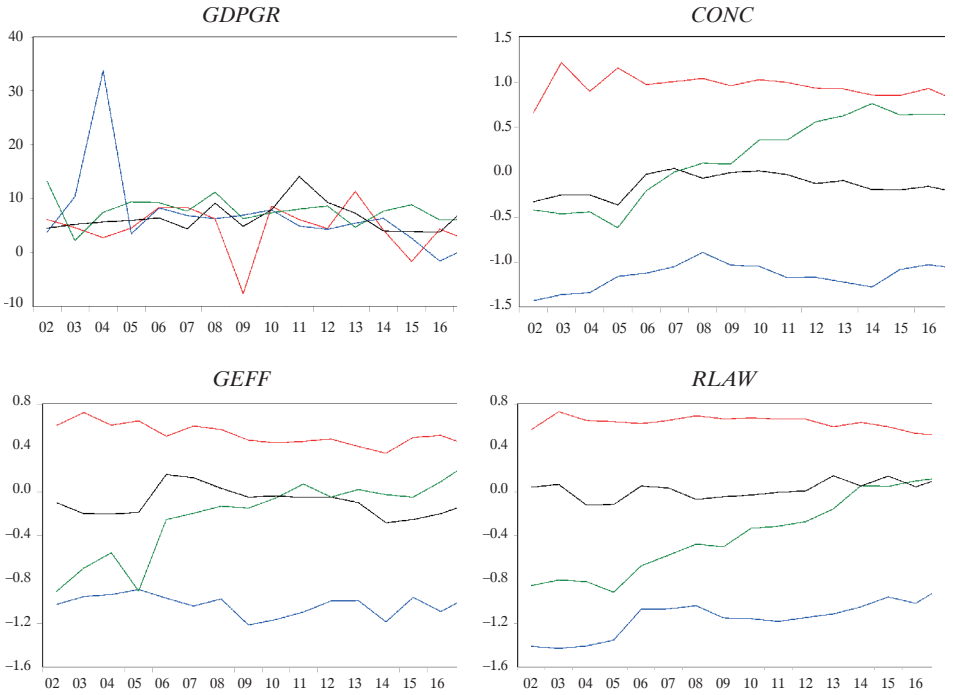

Fig. 1. Trend of the Variables

Source: authors' estimation.

4.3. Unit Root (Trend and Intercept)

All parameters become stationary after the first difference; see Table 2.

As seen in Table 2, all variables became stationary after taking the derivative. The results of unit root tests are shown in Table 3, and the probability values for ADF, PP, P/S for the variables considered in this study were at almost zero level and the test statistics provided the desired values. In this case, the null hypothesis will be rejected and the alternative hypothesis that the variables become stationary will be accepted.

Table 2. The Unit Root Analysis Becomes Significant for Considered Parameters

Variables	Levin, Lin & Chu *t**		ADF – Fisher Chi Square		Im, Pesaran and Shin W-stat		Stationary
	t-statistics	Prob.	*t*-statistics	Prob.	*t*-statistics	Prob.	
GDPGR	–9.69361	0.0000	40.5582	0.0000	–6.16659	0.0000	I(1)
CONC	6.27742	1.0000	17.3172	0.0270	–1.89030	0.0294	I(1)
GEFF	–2.26685	0.0117	17.9053	0.0219	–2.10442	0.0177	I(1)
RLAW	–0.05632	0.4775	15.9065	0.0437	–1.70435	0.0442	I(1)

Source: authors' estimation.

4.4. Unit Root (Trend)

Table 3. Unit Root

Variables	Levin, Lin & Chu *t**		ADF – Fisher Chi Square		Im, Pesaran and Shin W-stat		Stationary
	t-statistics	Prob.	*t*-statistics	Prob.	*t*-statistics	Prob.	
GDPGR	–3.15838	0.0008	20.9010	0.0074	–2.60839	0.0045	I(0)
CONC	5.11083	1.0000	21.6268	0.0057	–2.68109	0.0037	I(1)
GEFF	–1.80525	0.0355	8.73646	0.3650	–0.65285	0.2569	I(0)
RLAW	–1.83140	0.0335	23.6812	0.0026	–2.99219	0.0014	I(1)

Source: authors' estimation.

4.5. Pooled Regressions

We analyse whether the estimated pooled OLS model is significant for the regression. Regarding the test results given in Table 4, *t*-statistics, which measure variance in the dependent variables explained by independent variables. From the table we observe that only the Rule of Law becomes

significant and Control of Corruption is not statistically significant, however, it affects the economy negatively, while Rule of Law is statistically significant and it also affects the SSA countries negatively. It can be observed from *t*-statistics that the intercepts are all significantly distant from zero.

Table 4. Pooled Regression Results

Dependent Variable	*GDPGR*			
	Coefficient	Standard Error	*t*-statistic	Probability
C	6.330701	0.827384	7.651467	0.0000
CONC	–0.624065	2.485501	–0.251082	0.8026
GEFF	7.710114	4.405212	1.750225	0.0852
RLAW	–7.369082	2.975379	–2.476687	0.0161

Source: authors' estimation.

The pooled regression assumes that all the countries are the same.

4.6. Fixed Effect Model

The estimation of the fixed effect model is given in Table 5. In particular, only the Rule of Law variable becomes significant. The other variables' probability values are not significant.

Table 5. Fixed Effect Model

Dependent Variable	*GDPGR*			
	Coefficient	Standard Error	*t*-statistic	Probability
C	4.426707	1.591774	2.780990	0.0073
CONC	5.106013	5.602257	0.911421	0.3659
GEFF	4.406333	4.871293	0.904551	0.3695
RLAW	–14.01148	5.953665	–2.353420	0.0221

Source: authors' estimation.

4.7. Random Effect Model

Similarly, the results of the random effects model, as shown in Table 6, are relevant only in terms of Government Effectiveness, while the other variables remain insignificant. Notably, the coefficients for Rule of Law and Control of Corruption are negative, indicating a negative impact across the model. In contrast, Government Effectiveness exhibits a positive impact on

the model. Therefore, it can be concluded that Government Effectiveness positively influences RGDP, whereas the other variables have negative effects within the model.

Table 6. Random Effect Model

Dependent Variable	*GDPGR*			
	Coefficient	Standard Error	*t*-statistic	Probability
C	6.330701	0.826626	7.658484	0.0000
CONC	–0.624065	2.483224	–0.251313	0.8024
GEFF	7.710114	4.401176	1.751830	0.0849
RLAW	–7.369082	2.972653	–2.478958	0.0160

Source: authors' estimation.

In the above two tables, random and fixed effects are interpreted. This investigation has two estimators with different properties depending on the correlation between individual-specific effects (αi) and the regressors. If the effects do not interact with the explanatory variables, the random effects (RE) estimator is consistent and efficient. In contrast, the fixed effects (FE) estimator is consistent, but not efficient in this model. Again, if effects are associated with explanatory variables, the FE estimator is consistent and efficient, but the RE estimator is now inconsistent. Therefore, we need to calculate the Hausman test to determine which estimator is correct.

4.8. Hausman Test

The Hausman test helps to pick the preferred method to use either a fixed effect model or a random effect model (Table 7). The preferred method to use after carrying out the Hausman test is the random effect model.

Table 7. Hausman Test

Dependent Variable *GDPGR*			
Test Cross-section Random Effects			
Test summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Probability
Cross-section random	3.110092	3	0.3750

Source: authors' estimation.

5. Conclusion

Using the pooled regression method, the result shows that Control of Corruption is not statistically significant, however it affects the economy negatively, while Rule of Law is statistically significant and it also affects the SSA countries negatively.

Considering that management corruption is widespread, this study is important in this regard. Although the Control of Corruption is not statistically significant in terms of explaining the Annual Gross Domestic Product Growth Rate variable, the Control of Corruption negatively affects the SSA region.

Likewise, Government Effectiveness is not statistically significant in terms of explaining the Annual Gross Domestic Product Growth Rate variable. However, although it is not very important, it affects the economy positively.

Rule of Law is the only statistically significant variable that contributes to the growth rate of SSA countries and it negatively affects SSA countries. Control of Corruption negatively impacts the economy due to weak institutions in SSA countries.

6. Recommendations

In this context, this study shows that, from a global perspective, the problem of corruption is a widespread problem and that both individuals and institutions can be more efficient and effective in the fight against corruption. We would like to draw particular attention to the importance of legal regulations and the judiciary in this regard.

The conclusion is that governments of the SSA countries must strengthen institutions so that the variables considered can impact the economy of the SSA countries significantly and positively.

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