International Journal of Economics and Development Policy (IJEDP)
Vol. 5 No. 2, December, 2022
Print - ISSN: 2651-5644
Online - ISSN: 2651-5644

An Examination of Drivers of Corruption in some selected African Countries: A System Generalized Method of Moment Approach

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Abstract

Corruption has eaten deep into the fabrics of developing countries and making most of them capital of poverty and social vices. This paper examined the drivers of corruption in ten African countries over the period of 1996 -2018. The data for the study were obtained from World Development Indicators (WDI) and Worldwide Governance Indicators (WGI). Using System generalized Method of Moment (GMM) technique, the results reveal that rule of law, accountability, debt service, trade openness, and political instability were found to have positive impact on corruption explaining about 46.0%, 19%, 18% 4.5% and 10.6% of the changes in corruption respectively. However, government expenditure was found to have negative impact on corruption, explaining about 2.2% of the changes in corruption. The study then recommends that the remuneration of law enforcement agencies such as the police, court, etc. should be increased and attached strict penalty for failure to enforce the law. Public institutions such as the executive, legislative and judicial arms of government should be transparent in the activities in addition to freedom of access to public document by the general public. The policy makers and leaders of African countries should effectively live by example and truthfully be disciplined and efficient in the formulation and implementation of fiscal and monetary policies.

Keywords: *Corruption, Debt Services, Government Expenditure, System GMM, Rule of Law*
JEL Classification: B22, H63, H50, C23, K20.

Contribution to/Originality Knowledge :
Globally, it has been aclaimed that corruption has been the major impediment to the economic growth and development of developing economies especially Africa, which contributed to the high rate of unemployment, poverty and inequality. However, studies on corruption have focused more on the its impact on economic growth, poverty, unemployment and inequality and on the determinants of corruption, focus has been much on national level while the once at cross country use static panel models. This study contributes to the existing literature/knowledge through exploring the drivers of corruption in Africa using system generalized method of moment as it will guide in the quest to combat corruption in Africa and other developing economies.

1.0 Introduction

The gravity of corruption globally has remained a global issue and concern to both governmental and non- governmental organizations due to its effect on economic growth and stability of a nation. Corruption has been argued to be a threat to the rule of law, human rights, and democracy tends to undermine good governance, deterred economic growth and development and more importantly put democratic institutions and moral foundations of the society in danger (Nikolaena et. *al.*, 2017). It has also been argued to address inequality, unemployment and insecurity (Dwiputri, et. *al.*, 2018).

It has become more glaring in the developing economies with the limited available resources being diverted into the private pocket of the public officers. Many at times in developing economies, corruption is perpetuated through the provision of unwarranted and economically unreasonable projects (World Bank, 2014). Corruption has become a way of life people neither wish to, nor can control especially under the disguise of privatization and commercialization of public corporations. It is so complex to the extent that identifying its sources neither guarantees substantial reduction nor its elimination, In fact, it is such a hopeless situation of "the more you look, the less you see" hence combating corruption from one end spurs incremental corruption from another end.

Corruption is one of the major obstacles militating against rapid growth and development of developing economies. It has continued to affect the economies through low productivity, and high incidence of poverty, in addition to impoverishing masses more than expected. Corruption manifests itself through diversion of social benefits from the poorly executed project or sometimes non-execution of projects and consequently reducing the rate of investment, productivity and employment in developing economies (World Bank, 2014).

According to World Bank (2015), corruption is a single greatest obstacle to economic and social development; it undermines development by distorting the role of rule of law and weakening the institutional foundation which growth and development is based on. Similarly, the Transparency International (2014) posits that corruption is one of the greatest challenges of the contemporary world that undermines good governance, fundamentally distorts public policy, leads to misallocation of resources, and harms the private sector and private sector development and particularly hurt the poor.

Corruption is universal across the globe but the gravity and sources differ according to severity, type and consequences. According to World Bank report (2020), at least about $1 trillion is stolen yearly from the world poorest countries by criminals and corrupt officials, the amount of which if retained and utilized efficiently in those countries could avert 3.6 million deaths a year between 2015 to 2025, and at the same time they will not rely on foreign aid again. In Africa yearly according to the same report, about $20 to $40 billion is stolen through corrupt practices, this amount could be used to educate about 10 million children yearly and provide antiretroviral drugs for more than one million people living with HIV/AIDS for 50 years.

Transparency International Index (2020) report, which is one of the widely acclaimed yardsticks of measuring the gravity of corruption globally, revealed that more than two-third of the economies of the world score less than 50 percent which shows that they are either moderately or severely corrupt. This is despite measures taken internationally and nationally to combat the phenomenon. Western Europe and the European union is the least corrupt region with a score of 66 on average while sub-Saharan Africa remain the most corrupt scoring 32 percent (Transparency International, 2020). Furthermore, 70 percent of the corruption cases are giving bribe to public officials with the poor twice more likely to give out bribe than the rich, to access social amenities and 90 percent of the population (1.2 billion) in Africa are said to be living under severely or extremely corrupt government.

Gender wise, globally men are more likely to engage in corrupt acts than females, this is similar in almost all the regions of the globe. In Africa according to United Nation on Drugs and Crime report (2020) in Africa men are three times more likely to be corrupt than women especially public officials, where male judges are six times more likely to be corrupt than their female counterpart, while male police officers are five times more likely to be corrupt than their female counterpart. Furthermore, Afghanistan has the highest prevalence of corruption with males being 54 percent more likely to engage in corrupt practices against 45 percent females, followed by Nigeria where men are 35 percent more likely to be engage than women who are 24 percentage point. Luxembourg and Cabo Verde have the least gender ratio of 1:0 percent and 2:1 percent male-female likelihood to be engaged in corrupt practices. It is against the above background, that this study aims at identifying the drivers of corruption in the top ten Africa economies in terms of GDP, would help policy makers and government in formulating policies that help reduce or eliminate the menace.

The rest of the study is structured into literature review, methodology, result and discussion, and conclusion and recommendations.

2.0 Literature Review

2.1 Conceptual Issue

Literature on corruption are bound because of its impact on economic growth and development. However, literature on the concepts, determinants, severity and implications of corruption on economic growth is inadequate, this is because of the unavailability of data particularly when the need to pin-point the size of corruption and the people engaged in the acts aroused. It is only of recent that the Transparency International started providing measure of corruption in countries around the world.

Corruption is a multi-dimensional concept. According to World Bank (1997), corruption is defined as the "abuse of public office for private gain".

> "*Combating corruption is a key element in improving governance in Africa and achieving structural transformation goals, since corruption leaves the door wide open for illicit financial flows. it is not only limited to the public sector; it can also originate from the private sector and affects all segments of society. It is, inter alia attributable to weak institutions, ineffective enforcement mechanisms, and vulnerability of public officials*" (African Union, 2020, pp.4),

Ott (2004) states that corruption is manifested, whenever bureaucrat maximizes its own utility at the expense of individuals. In addition, Akindele (2005) sees corruption as a behaviour, which deviate from the formal rules of governing the actions of some persons in a position of authority. While Osunyinkanmi (2009), argued that corruption is synonymous to the term fraud, bribery, and settlements. Corruption is a multidimensional concept that covers various aspects of authority or abuse and designates a set of bad practices ranging from fraud, nepotism, collusion to insider dealing or trading and even extortion, the most omnipresent form being doubles bribe and bribery (Karmal, 2014a). According to Osobo (1996) corruption is an anti-

social behaviour conferring improper benefits contrary to the legal and normal norms that undermines the legal authorities' capacity to secure all citizens.

In developing economies, corruption has changed from gratification to large-scale theft, to the extent that bribe is almost being substituted for prices to secure government properties or services (World Bank, 2019). In these economies, Contractors abandon project that they have been fully paid or partially execute the project, which has contributed to the backwardness of those economies, to some extent that, corruption has been institutionalized, while its effect has continued to limit development prospects of the affected economies, the effect can be seen in the areas of power, health, education, transportation, communication and construction sectors of the economy (Kola, 2013). Wazim (2009) asserted that though, the impacts of corruption are felt, however, its face remains elusive as its perpetrators profit from it via insecurity and lack of transparency and accountability in governance, this has made it difficult to fight corruption in all facet of life, while those involved are known and working freely, receiving all sorts of honours ranging from national award to traditional title in the society. Leff (1964), Rose-Ackerman (1994) and White (2006) argue that corruption is still desirable in some economies because it accelerates the acquisition of public goods and assists entrepreneurs to subvert complex regulations.

It is to this extent that corruption is nothing but a problem with multiple phases that affect all sections of human life, it is a virus that can be resisted, if not, it spreads and contaminates all fabrics of any economy.

2.2 Theoretical framework

The theory adopted in this study is the neoclassical theory of corruption, which was based on the assumption that state legal power possession is what induces public officials to engage in corrupt activities that are damaging to the efficiency of market operation and at the same time serve as a serious hindrance to smooth operation of the private sector and conducts public activities in general. The state power gives the public officials ability to negotiate kickbacks and bribes to exchange its allocation of rent or to remove obstacles before those that are ready to pay the kickbacks of bribe in their quest to bye-pass the legal procedure (Rose-Ackerman, 1978). This act is illegal and constitute corruption.

The theory identified two factors that derived corruption to include, the presence of state formal capacity that enable public officials to create various types of rents and frictions to market efficient operation, where beneficiaries would always be ready to pay whatsoever amount just to access the rent and cross the obstacles. Secondly, is the ability of public officials to break the rules and regulations and allocate the rent to the higher bidders, these obstacles and rent ranged from paper pushing to red tape that is more peculiar in developing countries, in their effort to create monopolies, manipulate tariff, subsidies, all of which have a devastating effect on those economies. The theory further argued that all these occur as a result of excess regulation and requirement for permission to carry out certain activities and lack of transparency in most economies, especially developing economies.

2.3 Empirical Literature Review

Mashal (2011) investigated the impact of corruption on resource allocation in developing countries, using random and fixed effect model, reported that corruption is significantly determined by investment, per capita income, and increase in government expenditure on education and recommended a robust policy that will help in the fight. A dynamic model should have been employed to address the problem of autocorrelation and endogeneity that affect the robustness of the result.

Nadia and Galli (2011) investigated the determinants of corruption in Italian regions, found that per capita income and level of education insignificantly determined corruption while size of public investments and political institutions significantly determined corruption over the study period.

Fabayo et, al (2011), In their study on the consequences of corruption on investment, employing ordinary least squares technique, reported that corruption perception index, which implies high corruption level leads to low investment and hence, low economic growth. However, the study should have employed a dynamic time series model rather than static model given the fact that time series data are prone to unit root.

Karmal (2014b) investigated the determinants of corruption in Arab countries, report that human development index, press freedom index, inflation, rule of law significantly determined corruption. However, Ghaniy & Fithra (2016) investigated the determinants of corruption in the developing countries, through Ordinary Least Squares (OLS), reported that, level of development, economic freedom, level of education, degree of democracy, economic freedom, political stability and religion affiliation significantly determined corruption. However, the application of OLS technique method has made robustness of the result questionable given the scope of the study.

Ghaniy & Hastiadi (2017) investigated the political and social determinants of corruption using developed and developing countries multiple regression. They reported that economic freedom, level of development, degree of democracy and religion affiliation have significant positive impact on corruption. Income inequality and political stability however, were reported to have negative impact on corruption. The study further reveal that all the variables played the same role in both developed and developing countries. However, the method employed in the study is faulty given the scope of the study panel data model would have been appropriate hence the result may be plausible.

In a separate study, Chen, Shneider & Sum (2018) investigated the size and determinants of corruption in Chinese province using multiple indicators and multiple causes (MIMIC), reported that both government expenditure and public investment have significant positive influence on corruption. However, fiscal decentralization, level of education, wages of public servant, intensity of law enforcement, media suppression, political control and foreign direct investment were reported to have negative influence on corruption. The study also reveals that corruption is positively correlated with underdevelopment.

Cariolle (2018), in a separate study, investigated the five major determinants of corruption in 71 developing and transition economies using hierarchical model, reported that size of government, trade openness, and democracy have positive influence on corruption. However, income per capital of the country was reported to have negative influence on corruption due to improvement in human capital development and fall in fertility rate and that the determinants of corruption is context determine. However, hierarchical method is weak because it only shows the ranking without the causal link.

Perumal (2019), investigated the role of anti-corruption policies in India, reported that anti-corruption enforcement framework, scope of illegal rent, informal payment and distribution of powers among the arms of government are the major factors driving corruption and under mining the role of anti-corruption agencies in India. In a different study, Vian (2020), investigated anti-corruption transparency and accountability in health sector, reported that system factors such as financial pressure, poorly manage conflict of interest and weak regulatory enforcement system significantly affect anti-corruption agencies and propel corruption.

Onwujekwe, et, al. (2020), studied the determinants of corruption in the Nigerian health sector, reported that absenteeism, procurement procedure, informal payment, poor funding of the sector and employment procedure significantly drive corruption in the health sector in Nigeria.

Mlambo, Mubecua, Mpanza, & Mlambo (2019), studied the effect of corruption on development and good governance in Africa, using GMM, reported that corruption in Africa is significantly determine by low level of economic growth, bad governance structure, weak constitutions, political instability, high poverty and unemployment level and postcolonial policies. In a separate study, Goutte, Peran & Porcher (2021), studied the effect of corruption on good governance in Central Africa, using analysis of variance, reported that fiscal policy, financial sector development, trade policy, equity of public resources, property right and rule-based governance, quality of budgetary management, quality of public administration and efficiency in revenue mobilization significant affect good governance.

Unlike the above studies reviewed, this study focused on the drivers of corruption in African countries, employing a System Generalized Method of Moment (GMM), which is considered efficient, due to its ability to address the problem of omission bias, endogeneity and autocorrelation and hence, give a robust result.

3.0 Methodology

3.1 Sources of Data

The study employed time series data, specifically panel data covering the period of 1996 to 2019, in ten selected African countries that include, Algeria, Angola, Botswana, Cameroon, Egypt, Ghana, Kenya, Nigeria, South Africa and Zimbabwe, where two countries were selected in each sub region and data were obtained from World Development Indicators and World Governance Indicators. It marks the beginning of recording and ranking corruption globally based on internationally acceptable measures and hence why 1996.

3.2 Model Specification

To achieve the objective of the study, the structural form of the model can be specified as follows:

$$Corruption = f\begin{pmatrix} RuleofLaw, Accountability, DebtServices, \\ TradeOpenings, PolInstability, GovermentExp \end{pmatrix} \quad (10)$$

Corruption is measured as the extent of public corruption which include both petty and grand corruption, Rule *of Law* this is a measure of confidence of economic agents in laws and the rate at which they abide by it including the law enforcement agencies. *Accountability,* it is a measure of the degree of transparency by the public authorities including access to information by the public, *Debt Services* is the total amount spent on servicing public debt including the principal. *Trade Openness* is a measure of openness of the borders to trade, *Political Stability* this measure the likelihood of political instability or politically motivated violence including terrorism while *Government expenditure* is the total government expenditure. **The econometrics form of the model is specified as:**

$$Corruption_{it} = \dot{\eta}_i + \theta_i \sum_{j=i}^{p} Z_{it} + \lambda_{it} \quad (11)$$

Where ή is the constant intercept, θ is the slope, Z is the vector of independent variables, λ is the composite error term, i is the individual country and t is time.

Given that many economic variables are dynamic in nature, to adequately capture this dynamic process, the study employed dynamic panel model. Unlike the static panel, dynamic panel helps the researcher to capture the effect of shocks on the dependent variable, autocorrelation and endogeneity (Anderson & Hsiao, 1981, and Arellano & Bond, 1991). The dynamic panel data model is specified as in **equation 3**;

$$Y_{it} = \dot{\eta}_i + Y_{it-1} + \theta_i \sum_{j=1}^{p} Z_{it} + \lambda_{it} \quad (12)$$

Where Y_{it-1} is the lagged dependent, which captures the dynamic or catch-up effect?

With the introduction of lagged dependent variable in the model, the model is now prone to the problem of autocorrelation and endogeneity, which affects the efficiency of the results. This has led to the development of Generalized Method of Moment (GMM), which suggested the use of instruments in trying to address the problem. The GMM is decomposed into the difference GMM developed by Henderson & Hsiao (1981) and Arellano and Bond (1991) that suggest differencing the model and using the lagged values of the dependent variable as instrument to address the both autocorrelation and endogeneity problems.

$$\Delta Y_{it} = \dot{\eta}_i + \Delta Y_{it-1} + \theta_i \sum_{j=1}^{p} \Delta Z_{it} + \Delta \lambda_{it} \quad (13)$$

Where Δ is the change.

Contrary to this position, Arellano and Bover (1995), and Blundell, and Bond (1998) assert that by differencing the model, it will cause problem of small sample and omission variable bias and inconsistency in the result. This has led to the development of system GMM in attempt to address those problems. The advantage of system GMM over Difference GMM is that, it takes into account the values of lagged dependent and explanatory variables as instruments to attained a robust and consistent result.

The robustness of the instrument used in the model will be checked using the Arellano & Bond (1991) specification test of over identifying restriction known as the Sargan test used to test the validity of the instrument.

4.0 Presentation and Discussion of Result

Table 4.1: Dynamic Panel Results

variable	Difference GMM	System GMM
Lagged CORRUPTION	0.4529	0.4990
	(0.0939)***	(0.0684)***
Rule of law	0.3667	0.4600
	(0.1377)***	(0.1009)***
Accountability	0.3034	0.1901
	(0.2117)	(0.0973)*
Debt services	0.1374	0.1800
	(0.1138)	(0.0972)*
Trade openness	0.0928	0.0449
	(0.0506)*	(0.0247)*
Political instability	0.1174	0.1055
	(0.0720)	(0.0489)**
Government exp.	0-0.0062	-0.0224
	(0.0449)	(0.0323)
Constant	-17.0030	-10.5524
	(6.9327)	(2.8025)
N	61	76
Wald X^2	87.88***	729.02***
Sargan	60.67	41.72.38

Source: Author's computation using Stata 14

Note: The (***),(**) (*) Signifies variable significant at 1%, 5% and 10% respectively. Standard errors in parenthesis.

Table 4.1 presents the results of both differenced and system GMM, the analysis is based on the result of system GMM, which is assumed to be more efficient. The coefficient of lagged dependent variable is positive and statistically significant, this implies that in Africa previous corruption significantly increase present and future corruption in Africa, which is in line with the economic theory.

The coefficient of rule of law is positive and statistically significant, which is not in line with the economic theory. This implies that increase in effort to ensure strict adherence to the rule of law in the continent tends to increase corruption. This is possible because of lack of discipline and patriotism on the part of both civilians and the law enforcement agencies, poor remuneration has contributed to this problem with low remuneration the law enforcement agencies prefer to collect bribe from lawbreakers no matter how small it is than to punish them. This is in tandem with the findings of Kamal (2014b) who found that rule of law has positive impact on corruption in the Arab countries.

The coefficient of accountability is positive and significant, which is contrary to the economic theory which posit that African countries are not transparent in the administrative transactions. This is because in most countries the transparency of public institutions is in paper than practice, government will always claim to be transparent but allot of corrupt deals will be taking place underground in form of over invoicing, non-execution, or poorly execution of project. This contradict the findings of Leff (1964), Rose-Arkerman (1994) and White (2006) who found that accountability play a significant role in the low rate of corruption in developing countries

The coefficient of debt services is positive and significant; meaning that increase in debt service have positive impact on corruption in Africa, this is with the *appriori* expectation, which is because a significant percentage of the debt incurred are expended on the project to which they were not secured for or sometimes end up in private pocket and in some cases, what is budgeted for the debt services is far beyond what is required. This is contrary to findings of Nadia & Galli (2011) who reported that debt services tend to reduce corruption because of the multiplier effect of the project to which the debt is used to finance in Italian regions.

The coefficient of trade openness is positive and statistically significant, implies that the opening up of African countries borders has a positive impact on corruption due to that fact that most of the fund stolen in the continent is taken to the advanced countries normally in the name of trade. In some cases, the corrupt public officials connive with the multinational companies operating in a lucrative sector to divert public resources for their personal use by moving them out through them. This is in tandem with the *appriori* expectation and as well contradict the findings of Kamal (2014) who found that trade openness tent reduce corruption in Arab countries because of the influence it has on the attitude of the people.

The coefficient of political instability is positive and significant, meaning that high rate of political instability has a positive impact on corruption as huge amount of resources will be budgeted to cub the problem and is unaudited. In Africa, most of the crisis are politically motivated because it has been made to be an avenue of luting where huge amount of money are diverted into the private pocket this conform to the economic theory

The coefficient of government expenditure is negative and statistically insignificant, which implies that increase in government expenditure has a negative impact on corruption in Africa although is statically insignificant despite the fact that it does not conforms to economic theory. The insignificance is connected to the fact that as government make more effort to stop or

reduce corruption individuals are still devising new corruption strategies. This is not in tandem with the findings of Kamal (2014) who reported that increase in corruption in Arab countries is associated with increased in the level of government expenditure.

The coefficient of Wald Chi square shows that at least one variable in the model predict corruption and the Sagan test result revealed that all the instrumental variables are valid.

5.0 Conclusion and recommendations

This study employed system GMM model to investigate the drivers of corruption in Africa. On the basis of the findings, we conclude that rule of law, accountability, debt services, trade openness, and political instability are significant drivers of corruption in Africa, while government expenditure has negative impact on corruption.

Based on the above findings, i. the study recommends a proper check and balance to ensure accountability and transparency in the activities of public officials. In addition, measures should be put in place to ensure that debt incurred for the purpose of a project is strictly use for the project. ii. Government should increase the remuneration of staff of regulatory agencies and attached strict penalty for those that fail to ensure adherence to rule of law. iii. There should be proper check, and balance, and freedom of information that is not in paper to enable both regulatory agencies and the public to check mate and ensure accountability and transparency in government transactions. iv. There should proper monitoring of movement of cash in and out of the African continent by the African development bank in collaboration with the central bank of individual countries to reduce corruption induce capital flight from the continents

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