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To cite this article: George Babington Amegavi, Abigail Quarshie & James Kwame Mensah (2022) Mitigating Corruption in Sub-Saharan Africa: Does Heterogeneity in Corruption Levels Matter?, *Public Integrity*, 24:2, 229-242, DOI: [10.1080/10999922.2021.1917171](https://doi.org/10.1080/10999922.2021.1917171)

To link to this article: <https://doi.org/10.1080/10999922.2021.1917171>



Published online: 10 May 2021.



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Mitigating Corruption in Sub-Saharan Africa: Does Heterogeneity in Corruption Levels Matter?

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In line with Africa’s Agenda 2063 goal 12 of improving governance and building accountable institutions, this article contributes to the literature by examining corruption determinants using survey data from the Afrobarometer. Quantile regression estimates across 31 sub-Saharan African countries show that the effects of the determinants of corruption are heterogeneous across the quantiles. We observe that press freedom, parliamentary oversight, and human development have a reducing effect on corruption, whereas government size, ethnic fractionalization, and bureaucratic quality appear to exert a significant positive effect on corruption. Given the heterogeneity in findings, the “one size fits all” strategy in fighting corruption could be inadequate in mitigating corruption in SSA.

Keywords: corruption, government, public sector, quantile regression, sub-Saharan Africa

On the back of the Millennium Development Goals (MDG) agenda, the Sustainable Development Goal (SDG) 16 reverberates the significance of “Peace, Justice, and Strong Institutions” as a prerequisite for the effective implementation of the other SDGs. African leaders have embraced the idea that achieving sustained growth and development in the region will be a mirage without lasting peace, stability, and effective governance (UNDP, 2014). “Agenda 2063: The Africa We Want” represents a 50-year development roadmap, proposed and adopted by African leaders in January 2015. It charts a vision of pan-African renaissance whereby good governance and rule of law will characterize the region to facilitate positive socioeconomic transformation (<https://au.int/agenda2063/vision>). This is underpinned by the view that the negative effects of poor governance in terms of pervasive corruption are inconceivable and deleterious to the development drive of the region (Amegavi, Bawole, & Buabeng, 2018; United Nations Economic Commission for

Africa, 2016). However, while the literature converges on the relevance of combating corruption to achieve sustainable development, the literature diverges on which anticorruption strategy might be effective in the post-2015 African development Agenda (Hope, 2019).

In recent years, there has been considerable empirical research on the determinants and effects of corruption (see Lyrio, Lunkes, & Taliani, 2018). Given the proliferation of studies, some consensus is gradually emerging, although some aspects continue to remain ambiguous. For example, literature surveys are unearthing the significant causes of corruption across a large cohort of measures employed; however, the role of some variables (e.g., decentralization, see Gans-Morse et al., 2018; and government size, see Shon & Cho, 2020) remains unclear and some have yet to be rigorously studied (e.g., bureaucratic recruitment, see Gans-Morse et al., 2018). The lack of consensus stems from the difficulty of estimating the influence of institutions on corruption (Billger & Goel, 2009; Zakharov, 2019) and the lack of adequate data, especially in the case of Africa (UNECA, 2016). Yet, new insights about fighting corruption are valuable for policymakers.

Mitigating corruption in sub-Saharan Africa (SSA) is an important goal in itself and desirable to achieve for three reasons. First, the 2019 Transparency International (TI) Corruption Perceptions Index report shows that SSA is the lowest scoring region with an average of 32, on a scale of 1–100 (Transparency International, 2020). Seven SSA countries are ranked as “extremely corrupt” with scores below 20, and another 38 are rated “very corrupt” with scores between 20 and 39. Botswana is the only SSA country among the “slightly corrupt” countries, with no SSA country in the “least corrupt” countries category. Second, according to the 2016 Africa Governance report, Africa loses an estimated \$859 billion annually because of corruption (United Nations Economic Commission for Africa, 2016), depriving countries in the region of growth-enhancing public services, such as education, health, and infrastructural development. This implies that corruption is not merely a side story to the development of the region, but it is a core component that impacts African aspirations and visions of the future. Last, most SSA countries have ratified the United Nations Convention against Corruption (UNCAC), which supports national strategies against corruption, and have also agreed, under the New Partnership for Africa’s Development (NEPAD), to peer review through the African Peer Review Mechanism (APRM) with a focus on governance and development. Therefore, this study offers an opportunity to provide some policy directions.

The article makes two contributions to the literature. First, because SSA countries have different levels of corruption, the application of the conventional mean regressions might not capture the determinants of corruption across different quantiles of the conditional distribution of corruption. In addition, there could be subtle institutional differences between relatively less corrupt and high corruption countries that are likely to affect corruption determinants. Hence, the article employs the novel Method of Moments Quantile Regression with fixed effects to capture the differences in the determinants of corruption in less and high corrupt SSA countries. Second, the literature has consistently shown that the region is less efficient in addressing corruption. Thus, the key question that the study aims to address is: Are there differences in the determinants of corruption in highly corrupt and relatively less corrupt SSA countries?

After a review of the related literature follows a description of the data and the empirical methodology employed. Presentation and discussion of the findings will yield policy implications.

DETERMINANTS OF CORRUPTION

Corruption refers to the abuse of entrusted power for private gain (Transparency International, 2020). According to the empirical and theoretical literature, corruption can be explained through three channels. The role of internal mechanisms and incentives is the first focus. The second determinant focuses on external mechanisms, and the third contends that the determinants of corruption are based on indirect factors, such as religious background, culture, gender, and colonial history. First, the determinants of corruption are premised on the internal control structures and incentives that control corruption within a bureaucracy. In a bureaucratic environment characterized by poor supervision and weak regulations, corruption is generally high. Rauch and Evans (2000) address this issue in a pioneering study of 35 developing countries. They find that an important feature of the internal control mechanism is whether meritocracy or nepotism characterizes recruitment and promotion processes in public service. They concluded that meritocratic recruitment reduces corruption and the probability of weakening internal controls through collusion among bureaucrats. Pay is an important incentive that influences unethical behavior. Lederman, Loayza, and Soares (2005) contend that increasing government wages reduces the incentives for public servants to engage in rent-seeking and bribe-taking practices. In their empirical test of this hypothesis, they find a negative relationship between increasing public sector wage and corruption.

The second determinant of corruption relates to external control. This is exercised by organizations and persons outside the public administration setup. External control depends crucially on an independent and free press and the judiciary. In an environment where the press is free, integrity and misconduct on the part of government officials can be publicized. This tends to decrease the information gap between citizens and the government, hence improving governance by reducing corruption (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999). Empirical studies, such as Zakharov (2019) and Debski, Jetter, Möhle, and Stadelmann (2018), find evidence that a free and independent press reduces corruption. Similarly, in a judicial system where laws are impartially enforced, and bureaucrats can easily be prosecuted for unethical behavior, the potential rewards for corruption diminish (Lederman et al., 2005). Therefore, as long as the judiciary remains independent, it will police and punish government officials who engage in corrupt activities thus reducing corruption.

Finally, culture and colonial history are identified in the literature as the indirect determinants of corruption. Shleifer and Vishny (1993) contend that countries that are more ethnically diverse are susceptible to a disorganized form of corruption. In an empirical study, Akbari, Bahrami-Rad, and Kimbrough (2019) find evidence of a positive relationship between ethnic fractionalization and corruption. Another indirect effect is colonial history. Treisman (2000), for instance, finds that corruption is less prevalent in former British colonies.

THE MODEL, DATA, AND ESTIMATION TECHNIQUE

The broader literature on the determinants of illegal activity, where rational persons (i.e., bribe takers and bribe givers) evaluate the relative benefits and costs of engaging in criminal (corrupt) acts, is foundational for corruption research (see Becker, 1968). To measure corruption, our dependent variable, we used data from the sixth round of the Afrobarometer survey. We use this round because the data cover most of the SSA countries compared to in previous rounds. The survey contains data from 36 African countries with 31 from SSA; hence, we used the data for the 31 SSA countries. The list of countries is provided in [Appendix A](#). The surveys were administered using face-to-face interviews between 2014 and 2015, including a set of standardized questions. In most countries, the sample size was 1,200, but 2,400 in Ghana, Nigeria, Uganda, Kenya, Mozambique, and South Africa. Given that the data covered only 31 SSA countries, the findings cannot be generalized across the entire SSA region. One major advantage of this data set is its reliance on actual corruption experience. However, a major disadvantage is its inability to capture all corruption dimensions; for example, large-scale corruption by high-ranking government officials and multinational corporations is not available

To capture our measure of government corruption, the article employed questions inquiring into the experiences of people paying bribes to government officials to obtain public services. The Afrobarometer survey offers five similar questions (Q55-D, F, H, J, and L): “How often, if ever, did you have to pay a bribe, give a gift, or do a favor for (d) a health worker or clinic or hospital staff in order to get the medical care you needed? (f) a government official in order to get the document you needed? (h) a government official in order to get the services you needed? (j) a police officer in order to get the assistance you needed, or to avoid a problem like passing a checkpoint or avoiding a fine or arrest? (l) a judge or court official in order to get assistance you needed from the courts?” The questions measure corruption by exploring the relationship between government officials and citizens. Respondents are required to answer each question by using the options of: “no contact,” “never,” “once or twice,” “a few times,” or “often.” The first two options were combined and coded as 0, whereas the remaining options were given values 1, 2, and 3 respectively. Based on this, we created our country-level corruption index by aggregating the five items into a unit corruption index, generating a 16-point scale that ranges from 0 to 15 (Cronbach’s $\alpha = 0.785$). High values on the corruption index signify that people have to pay bribes often for public services and vice versa for low values. To investigate the determinants of corruption, the article employs eight variables: press freedom, government size, a country’s level of economic growth, bureaucratic quality, rule of law, parliamentary oversight, human development, and ethnic fractionalization. These variables have been used in the extant literature as key determinants of corruption (e.g., Dahlström, Lapuente, & Teorell, 2012; La Porta et al., 1999; Staphenurst, Jacobs, & Pelizzo, 2014; Treisman, 2000). Notwithstanding, the effects of some of the determinants remain an empirical conundrum. For example, it is not clear whether a larger government would facilitate or reduce corruption. The general estimated model is specified as follows:

$$\text{COR}_{it} = f(\text{PF}_{it}, \text{GS}_{it}, \text{GDPPC}_{it}, \text{BQ}_{it}, \text{RL}_{it}, \text{PO}_{it}, \text{HD}_{it}, \text{EF}_{it}) \quad (1)$$

where COR denotes corruption; press freedom is PF; GS indicates government size; GDPPC

represents economic growth; BQ denotes bureaucratic quality; RL is rule of law; parliamentary oversight is PO; HD is human development; and EF denotes ethnic fractionalization; i stands for the countries considered in the article ($i = 1, \dots, N$), and t is the time span of the study ($t = 1, \dots, T$). To provide efficient estimates, we transform all the variables into their natural logarithmic forms, except ethnic fractionalization and parliamentary oversight. Hence, the empirical functional model in Equation (1) is specified in logarithmic form as follows:

$$\begin{aligned} \ln\text{COR}_{it} = & \theta_0 + \beta_1 \ln\text{PF}_{it} + \beta_2 \ln\text{GS}_{it} + \beta_3 \ln\text{GDPPC}_{it} + \beta_4 \ln\text{BQ}_{it} + \beta_5 \ln\text{RL}_{it} \\ & + \beta_6 \text{PO}_{it} + \beta_7 \ln\text{HD}_{it} + \beta_8 \text{EF}_{it} + \mu_{it} \end{aligned} \quad (2)$$

where \ln is the natural logarithm and μ_t is the error term assumed to have a normal distribution with zero mean.

We aim to capture the determinants of corruption in SSA. An independent and free press is generally considered an important control against corruption, because independent media houses and journalists have a strong incentive to investigate and expose corruption. Press freedom reduces the information problem in a political system and increases accountability (Brunetti & Weder, 2003; Lederman et al., 2005). Therefore, countries with an independent and free press, all things being equal, should have less corruption than countries where the freedom of the press is controlled. For ease of interpretation, we have rescaled the index such that higher values represent greater press freedom. The literature diverges on the role of government size on corruption. One school of thought contends that a larger government contributes to bureaucracy and span of control among bureaucrats and hence can contribute to corruption (Kotera, Okada, & Samreth, 2012; Shon & Cho, 2020). In contrast, another school of thought argues that a larger government might be associated with stronger checks and balances (i.e., better oversight), and thus reduce corruption (Billger & Goel, 2009; La Porta et al., 1999). GDP per capita denotes the level of economic development of a country. Economic development has been robustly associated with lower corruption (Treisman, 2000), because economic development generally leads to a simultaneous increase in the demand for better public services and more investment in corruption control strategies (Billger & Goel, 2009). The probability of detection and prosecution is typically believed to lead to lower corruption, especially as the legal and regulatory environment and bureaucratic structures are improved (Dahlström et al., 2012; Tanzi, 1994). To account for the probability of detection and prosecution, we use an index of bureaucratic quality and rule of law. Similarly, previous studies have demonstrated the significance of legislative oversight in mitigating corruption (Benton & Russell, 2013; Stapenhurst et al., 2014). Consequently, the article includes the parliamentary oversight index developed by Imbeau and Stapenhurst (2018). The degree of human development in a country is also likely to affect corruption. Corruption decreases when citizens are more educated, given their greater ability to collaborate with law enforcement agencies to monitor and unearth existing government corruption and deter the potential for corruption (Treisman, 2000). Finally, the number of ethnic groups in a country can be a factor that can facilitate corruption. Ethnic fractionalization is the probability that two randomly selected people from a given country will not share the same ethnicity, which involves a combination of racial and linguistic characteristics. Ethnic fractionalization measures the cultural background of a country. Shleifer and Vishny (1993) contend countries that are more

TABLE 1
Data Description and Source

<i>Variables</i>	<i>Measurement</i>	<i>Data sources</i>
Corruption (COR)	Measures people who have to pay bribe to a government official at least once to get service from public organizations	Afrobarometer
Press freedom (PF)	Ranges from 0 (total press freedom)–100 (lack of press freedom)	Freedom House
Government size (GS)	General government final consumption expenditure as a share of GDP	WDI
GDP per capita (GDPpc)	GDP per capita (Constant 2010 US\$)	WDI
Bureaucratic quality (BQ)	The institutional strength, expertise, quality, and stability of the civil service. Ranges from 0 (less bureaucratic quality) to 6 (high bureaucratic quality)	ICRG
Rule of law (RL)	The strength and impartiality of the legal system. Ranges from 0 (low quality) to 6 (high quality)	ICRG
Parliamentary oversight (PO)	Measures the establishing statutes, their functioning and practices, and the available resources. Ranges from 0 (low oversight capacity) to 3 (high oversight capacity)	Imbeau and Staphenurst (2018).
Human development (HD)	The mean years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age.	UNDP
Ethnic fractionalization (EF)	Ranges from 0 (less ethnic diversity) to 1 (more ethnic diversity)	Alesina, Devleeschauwer, Easterly, Kurlat, and Wacziarg (2003)

Note: Except for the ethnic fractionalization and parliamentary oversight variables, all variables were transformed into natural logarithms for ease of interpretation.

ethnically diverse are susceptible to a disorganized form of corruption, and Treisman (2000) finds evidence of a positive relationship between the index of ethnic fractionalization and corruption. Table 1 presents the description and sources of the variables.

Model Estimation Techniques

For validation and comparative purposes, the article employs the Ordinary Least Squares (OLS) regression with Driscoll-Kraay standard errors and quantile regression techniques. OLS regression estimates are based on mean regression outputs. However, it can be assumed that the level of corruption may not be the same across countries; as a result, the consequential policy strategies will also have to be designed by the level of corruption in a country. Considering the above reason and the conditional mean estimation of the OLS technique, the current study also estimated the models using the quantile regression (QR) technique. The QR technique facilitates the identification of the conditional heterogeneous covariance effects of the determinants of corruption across different quantiles; that is, it estimates the impact of

TABLE 2
Descriptive Statistics and Correlation Matrix

	<i>COR</i>	<i>PF</i>	<i>PO</i>	<i>GS</i>	<i>GDPpc</i>	<i>RL</i>	<i>BQ</i>	<i>HD</i>	<i>EF</i>
Panel A									
M	1.531	27.370	1.183	9.510	2081.643	19.632	1.451	0.522	0.719
Max	15.000	90.000	1.660	3.401	9521.289	411.021	6.000	1.653	0.884
Min	0.00	3.800	0.410	2.057	282.647	1.000	0.000	0.262	0.000
SD	1.063	20.348	0.426	4.411	2219.538	72.177	1.279	0.268	0.205
Panel B									
COR	1.000								
PF	0.129	1.000							
PO	-0.025	-0.112	1.000						
GS	0.170	-0.082	0.044	1.000					
GDPpc	-0.056	-0.198	0.049	0.042	1.000				
RL	0.087	-0.128	0.050	0.235	0.199	1.000			
BQ	-0.106	-0.337	0.251	-0.125	0.116	0.223	1.000		
HD	-0.222	-0.478	0.130	0.461	0.043	0.013	0.144	1.000	
EF	0.299	-0.032	-0.172	-0.187	0.037	0.056	0.314	-0.009	1.000

the corruption determinants across different corruption levels. Additionally, QR estimates are more efficient and robust to outliers compared to the conventional OLS estimators (Koenker, 2004). Specifically, the new Method of Moment Quantile Regression (MMQR) with fixed effects proposed by Machado and Silva (2019) is employed. Therefore, we specify the τ th quantile ($0 < \tau < 1$) of the conditional distribution of the dependent variable given a set of independent variables x_{it} ,

$$Q_{\tau}(y_{it}|x_{it}) = \alpha_{\tau} + \beta_{\tau}X_{it} + \mu_{it} \tag{3}$$

where $Q_{\tau}(y_{it}|x_{it})$ indicates the τ th quantile of the dependent variable; y_{it} is the vector of the dependent variable (COR); x_{it} represents the vector of the eight independent variables (PF, GS, GDPPC, BQ, RL, PO, HD, EF); and μ_{it} indicates the vector of a residual of unobservable factors. The parameters of the equation are estimated by minimizing the absolute value of the residuals (Koenker, 2004). This is specified as follows:

$$Q_{\tau}(\beta_{\tau}) = \min_{\beta} \sum_{i=1}^n (y_{it} - \beta_{\tau}X_{it}) \tag{4}$$

Table 2 presents a summary of the descriptive statistics and correlation matrix of the variables.

EMPIRICAL RESULTS

OLS with Driscoll-Kraay Standard Errors Results

To estimate the parameters of the impact of press freedom, government size, GDP per capita, bureaucratic quality, rule of law, parliamentary oversight, human development, and ethnic

TABLE 3
 OLS With Driscoll-Kraay Standard Errors Estimation Results

<i>Dependent variable: Corruption</i>			
	<i>Coefficients</i>	<i>t-Stat.</i>	<i>p-Values</i>
lnPF	-0.086** (0.0315)	-2.730	0.014
PO	-0.0067 (0.0245)	-0.270	0.787
lnGS	0.764*** (0.0331)	23.040	0.000
lnGDPpc	-0.0479*** (0.0152)	-3.150	0.006
lnRL	0.0174 (0.0485)	0.360	0.724
lnBQ	-0.264*** (0.0602)	-4.390	0.000
lnHD	-1.542*** (0.291)	-5.300	0.000
EF	1.390*** (0.0648)	21.470	0.000
Constant	11.014*** (0.178)	61.820	0.000
R ²	0.303		

Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

fractionalization on corruption across the SSA countries, we begin by presenting the OLS results. As illustrated in Table 3, the coefficient of press freedom is negative and statistically significant at a level of 5%. Thus, ceteris paribus, a percentage increase in press freedom is likely to reduce corruption by 0.086%. The impact of government size is statistically significant and positive on corruption at a 1% significance level. This suggests that a 1% increase in the size of government is likely to exacerbate the level of corruption by 0.764%. The findings support the claim that larger government size is likely to aggravate government corruption through the creation of opportunities for rent seeking and bribery.

Furthermore, the results show that the coefficient of economic growth (GDPpc) is negative and statistically significant at a 1% significance level. This implies that growth in national economies across countries in the region has the potential to be an effective mechanism to mitigate corruption. Regarding bureaucratic quality, it is expected that countries with autonomous and stable civil services devoid of political interference are more likely to address and reduce government corruption. The estimated results appear to confirm this hypothesis by demonstrating a negative and significant effect of bureaucratic quality on corruption in SSA. The coefficient of human development is negative and statistically significant at a level of 1%. Thus, human development appears to have a reducing effect on corruption in the region. Ethnic fractionalization exerts a strong positive and statistically significant effect on corruption at a 1% level of significance. This implies that the potential for corruption levels to increase in ethnic heterogeneous SSA countries is high. However, although parliamentary oversight appears to have a negative effect on corruption, and rule of law exerts a positive effect on corruption, their effects are insignificant.

TABLE 4
Quantile Regression Results. Dependent Variable: Corruption

	<i>Low corruption countries</i>			<i>High corruption countries</i>	
	<i>10th</i>	<i>20th</i>	<i>30th</i>	<i>40th</i>	<i>50th</i>
lnPF	−0.231** (0.104)	−0.059 (0.095)	−0.095 (0.068)	−0.032 (0.035)	−0.036 (0.031)
PO	0.041 (0.054)	−0.011 (0.027)	−0.026* (0.015)	−0.019** (0.009)	−0.017* (0.009)
lnGS	1.838*** (0.175)	1.519*** (0.218)	0.441 (0.278)	0.191** (0.077)	0.177*** (0.067)
lnGDPpc	−0.057 (0.055)	−0.063 (0.051)	−0.031 (0.033)	−0.012 (0.019)	−0.007 (0.019)
lnRL	0.185 (0.188)	0.200 (0.187)	−0.134 (0.131)	−0.019 (0.064)	0.005 (0.048)
lnBQ	−1.004*** (0.138)	−0.721*** (0.229)	0.002 (0.152)	0.099* (0.059)	0.104* (0.057)
lnHD	−2.234*** (0.364)	−1.642*** (0.223)	−1.024** (0.424)	−0.576*** (0.140)	−0.548*** (0.130)
EF	1.823*** (0.259)	1.671*** (0.231)	1.344*** (0.181)	1.262*** (0.081)	1.267*** (0.076)
Constant	7.054*** (0.687)	8.323*** (0.724)	12.467*** (1.002)	13.195*** (0.369)	13.236*** (0.318)

Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Quantile Regression Results

Considering the distributional heterogeneity of corruption in SSA, the method of moment quantile regression (MMQR) with fixed effects is employed. Using this technique, we can examine the determinants of corruption throughout the conditional distribution and particularly with a focus on the least and most corrupt SSA countries. A comparison of the OLS and quantile regression results reveals that the impacts of the influencing factors on corruption are heterogeneous. Thus, the effects of press freedom, government size, parliamentary oversight, GDP per capita, bureaucratic quality, rule of law, human development, and ethnic fractionalization vary under different levels of corruption. The panel quantile results are presented in Table 4, for the 10th, 20th, 30th, 40th, and 50th percentiles of the conditional corruption distribution. The lower quantiles (10th and 20th) refer to the relatively least corrupt countries—Cape Verde and Botswana. The higher quantiles (40th and 50th) refer to the most corrupt countries—Cameroon, Uganda, Kenya, Nigeria, and Zimbabwe, where about 50% of the population reported the experience of paying bribes for public services.

The impact of press freedom (lnPF) is negative on corruption but only significant in the 10th quantile; that is, press freedom is associated with less corruption. Specifically, besides the impact becoming insignificant from the 20th quantile, the estimated coefficients decrease from the lower quantiles (least corrupt countries) to the upper quantiles (highly corrupt countries). These findings suggest that as press freedom takes hold in most SSA countries, all things being equal, corruption levels might reduce.

Regarding parliamentary oversight (PO), we observe that it reduces corruption, but not consistently throughout the conditional distribution. The impact appears to be bimodal—with both negative and positive effects on corruption. However, whereas the negative effect is significant, the positive effect is insignificant. This means that parliament oversight is likely to exert greater influence in promoting corruption control in SSA countries. Comparing these findings to the OLS estimations in [Table 3](#), we find that the OLS estimation fails to identify this significant relationship. The effect of government size (InGS) is significant and positive on corruption. The effect of government size is consistently significant across all the quantiles but the 30th quantile. This result implies that increasing government size exacerbates corruption levels in SSA. However, the conditional distribution reveals that the impact is stronger in the most corrupt countries; that is, the positive effect of government size on corruption is greater for highly corrupt countries like Cameroon, Uganda, Kenya, Zimbabwe, and Nigeria than in the relatively least corrupt countries like Botswana and Cape Verde. One plausible explanation for this evidence is that an increase in government size may give bureaucrats and politicians more opportunities for rent seeking and bribe taking, as a result corruption levels may worsen.

Regarding economic growth (InGDPPC), we observe that it reduces corruption, but not consistently throughout the conditional distribution. The impact is significant in the lower quantiles, 10th and 20th, but insignificant in the 30th, 40th, 50th quantiles. This means that economic growth is likely to exert greater influence in promoting corruption control in SSA countries with relatively low corruption levels than in highly corrupt SSA countries. The effect of bureaucratic quality (InBQ) on corruption is found to be bimodal; it appears to have a significant and negative effect on corruption in the lower quantiles and a significant and positive effect on corruption in the higher quantiles. This means that bureaucratic quality appears to have an increasing effect on corruption in the highly corrupt SSA countries. In highly corrupt countries with weak bureaucracies, political power is unevenly distributed, and rent-seekers may have more political influence which can make rent-seeking and bribe-taking activities more attractive.

As the level of human development increases, the desire and capability of citizens to question and demand more accountability from those in power increases. The coefficients of human development (InHD) are negative and significant across all the quantiles. In other words, improving human development appears to reduce corruption in SSA. The magnitude of the impact of human development is heterogeneous across the quantiles: it decreases from the lower to the higher quantiles of the distribution, suggesting that the current levels of human development appear to have a stronger corruption mitigation effect in SSA countries with low corruption levels. More important, however, the findings demonstrate that investment and improvements in human development have the potential to mitigate corruption in both relatively low and highly corrupt SSA countries. Ethnic fractionalization (EF) has a significant and positive effect on corruption across the entire corruption distribution, which implies a cumulative effect on corruption that exacerbates corruption levels in SSA. Finally, although the effect of rule of law (InRL) is positive in the 10th, 20th, and 50th quantiles and negative in the 30th and 40th quantiles, the effects are insignificant. The findings from the QR are satisfactorily consistent with the results observed in [Table 3](#).

DISCUSSION

Combating corruption is critical to strengthening public trust in government and achieving high-quality governance. The evidence shows that press freedom appears to exert a negative effect on corruption. The finding supports the argument that corruption is more likely to wane in countries with an independent and free press (Brunetti & Weder, 2003; Debski et al., 2018). However, these results should be interpreted with caution, because although the region appears to be experiencing some improvements in press freedom, press freedom remains fragile in the region. A possible explanation for these results could be the fall of several dictators and authoritative governments in the region in recent years, which have led to improvements in press freedom in countries like Ethiopia (improving by 11 at 99th); Angola (up 3 at 106th); Sudan (improving by 26 at 159th); Gambia (up 5 at 87th); and the Democratic Republic of Congo (up 4 at 150th) (Transparency International, 2020). With a free press, public officials are more subject to public scrutiny and answerable for their actions and decisions. They are usually monitored and checked by the press, and this increases the probability of corruption detection, which results in reduced corruption. From another perspective, press freedom improves access to information, which improves people's understanding of issues; hence, people are more likely to express themselves and to put pressure on their governments, which is more likely to reduce corruption.

The decreasing effect of parliamentary oversight on corruption confirms the theoretical position that oversight tools reduce the propensity of public servants to engage in rent-seeking activities and tolerate bribery, which leads to reduced corruption. However, when parliamentary oversight is weak, the temptation for government officials to engage in corrupt practices is intensified, with its associated socioeconomic consequences. In that regard, increasing the oversight capacity of parliaments could have an impact on corruption because it increases the probability of identifying corrupt practices in government (Imbeau & Stapenhurst, 2018). This result is largely consistent with previous studies that demonstrate that improving parliamentary oversight has a reducing effect on corruption (Benton & Russell, 2013; Stapenhurst et al., 2014). The evidence further signals that government size exerts an increasing effect on corruption. This effect may be associated with the fact that in countries where monitoring and accountability mechanisms are weak and ineffective, increasing government size may promote more corruption. The effect appears stronger in countries with high corruption levels. Notably, weak monitoring and accountability structures have been a major challenge that has characterized many SSA countries (UNECA, 2016). These results confirm the conventional view that increasing government size in countries with a weak institutional capacity of monitoring and sanctioning unethical practices leads to rent-seeking behaviors on the part of public officials (Kotera et al., 2012; Shon & Cho, 2020). Furthermore, considering that economic growth hinders corruption, as revealed by the study, it is indispensable for SSA countries to stimulate investment and promote economic growth. Government intervention in economic activity is often required in SSA countries because of their frequent market failures. These interventions sometimes cause an increase in government size. The evidence from the article appears to show that an increase in government size has the potential to increase corruption. Therefore, it is imperative that bureaucratic structures, regulatory and legal systems, as well as the independence and freedom of the press,

are properly established so that government interventions that are necessary for most SSA countries do not necessarily increase corruption.

One unexpected finding deserves closer scrutiny. The results show a positive relationship between bureaucratic quality and corruption in highly corrupt countries. The increasing effect of bureaucratic quality on corruption implies that without appropriate institutional reforms, addressing corruption may be difficult in the region. This result is not surprising; a plausible explanation could be the political interference in bureaucratic processes, nepotism and patronage in recruitment processes, and judicial corruption that has characterized most SSA countries (Amegavi & Mensah, 2020; Hope, 2019; Transparency International, 2020). Moreover, explicit signs of weak bureaucratic and regulatory systems could signal to public servants that there is a low risk of detection and prosecution, and this may encourage them to engage in corrupt practices. Therefore, SSA countries can lay this foundation by eradicating political interference in bureaucratic processes and enhancing accountability mechanisms through stiffer punishment for both bribe givers and bribe takers.

Moreover, the negative effect of human development on corruption supports previous studies by Sarabia, Crecente, del Val, and Giménez (2020) and Graeff and Mehlkop (2003), which suggest that human development reduces corruption. A plausible explanation for this result is that countries in the region have witnessed substantial improvement in the number of people accessing education (UNDP, 2014). Consequently, many citizens now comprehend governmental activities and the need to collaborate with anticorruption institutions to fight corruption. Last, the article finds that ethnic fractionalization increases corruption, which supports previous studies by Shleifer and Vishny (1993) and Treisman (2000). Nevertheless, this result should be interpreted with caution by keeping in mind the nuances in SSA countries.

CONCLUSION AND POLICY IMPLICATIONS

Corruption is one of the most challenging developmental problems in SSA. This article examines the empirical determinants of corruption, in particular, the effects of press freedom, government size, parliamentary oversight, GDP per capita, bureaucratic quality, rule of law, human development, and ethnic fractionalization on corruption. We have provided empirical evidence that reaffirms previous findings. We also reinforce this evidence by applying the method of moment quantile regression (MMQR) with fixed effects, a technique that allows us to examine the impact of the corruption determinants on the conditional distribution of corruption across SSA countries. Overall, the findings show that press freedom has the potential to deter corruption. We also find that bureaucratic quality and the forms of rule of law both have increasing effects on corruption. Large government size is associated with high corruption, other things being equal, perhaps reflecting weak institutions that act to combat corruption. Furthermore, the corruption-reducing effects of economic growth and parliamentary oversight have the potential to cancel out any rise in corruption generated by large government size. The findings indicate that human development is associated with low corruption, other things being equal, perhaps reflecting the gradual growth in levels of human development across the region. Ethnic fractionalization has a positive relationship with corruption.

In practical terms, to expand the size of government without increasing corruption, the promotion and strengthening of media freedom and independence in SSA are indispensable. Likewise, the elimination of political interference in bureaucratic processes, promoting accountability through the strengthening of supervision, and regulatory and law enforcement systems could reduce the incentives for public servants to engage in rent-seeking activities. Increasing the probability of prosecution could help reduce the level of corruption through the strengthening of parliamentary oversight capacity. Furthermore, SSA countries should implement the United Nations Convention against Corruption (UNCAC) through the strengthening of institutional capacities and funding; promoting civic and social accountability through the participation and engagement of citizens; civil society; and the media. Considering the corruption mitigating potential of human development, SSA countries should increase human development by investing in education and making education access equitable. Further, given the heterogeneous effects of corruption determinants across the conditional corruption distribution, “one size fits all” corruption mitigation strategies are unlikely to be effective across the countries in SSA. Corruption control strategies should be tailored differently across the relatively least corrupt and highly corrupt countries. Future studies could improve on the extant scholarship by investigating the determinants of corruption based on case studies reflecting country-level realities.

REFERENCES

- Akbari, M., Bahrami-Rad, D., & Kimbrough, E. O. (2019). Kinship, fractionalization and corruption. *Journal of Economic Behavior & Organization*, 166, 493–528. doi:10.1016/j.jebo.2019.07.015
- Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., & Wacziarg, R. (2003). Fractionalization. *Journal of Economic Growth*, 8(2), 155–194. doi:10.1023/A:1024471506938
- Amegavi, G. B., Bawole, J. N., & Buabeng, T. (2018). The dynamics of e-government enactment in a developing country public sector organisation: Evidence from Ghana. *International Journal of Electronic Governance*, 10(1), 74–92. doi:10.1504/IJEG.2018.091267
- Amegavi, G. B., & Mensah, J. K. (2020). Commitment to public interest and public service motivation development challenges: A qualitative inquiry. *Public Administration Issues*, 2020(6), 67–83. doi:10.17323/1999-5431-2020-0-6-67-83
- Becker, G. S. (1968). Crime and punishment: An economic approach. In Nigel, G., Fielding, N. G., Clarke, A., and Witt, R. (Eds.). *The economic dimensions of crime* (pp. 13–68). London, UK: Palgrave Macmillan.
- Benton, M., & Russell, M. (2013). Assessing the impact of parliamentary oversight committees: The select committees in the British House of Commons. *Parliamentary Affairs*, 66(4), 772–797. doi:10.1093/pa/gss009
- Billger, S. M., & Goel, R. K. (2009). Do existing corruption levels matter in controlling corruption? Cross-country quantile regression estimates. *Journal of Development Economics*, 90(2), 299–305. doi:10.1016/j.jdeveco.2008.07.006
- Brunetti, A., & Weder, B. (2003). A free press is bad news for corruption. *Journal of Public Economics*, 87(7-8), 1801–1824. doi:10.1016/S0047-2727(01)00186-4
- Dahlström, C., Lapuente, V., & Teorell, J. (2012). The merit of meritocratization: Politics, bureaucracy, and the institutional deterrents of corruption. *Political Research Quarterly*, 65(3), 656–668. doi:10.1177/1065912911408109
- Debski, J., Jetter, M., Mösele, S., & Stadelmann, D. (2018). Gender and corruption: The neglected role of culture. *European Journal of Political Economy*, 55, 526–537. doi:10.1016/j.ejpoleco.2018.05.002
- Gans-Morse, J., Borges, M., Makarin, A., Mannah-Blankson, T., Nickow, A., & Zhang, D. (2018). Reducing bureaucratic corruption: Interdisciplinary perspectives on what works. *World Development*, 105, 171–188. doi:10.1016/j.worlddev.2017.12.015

- Graeff, P., & Mehlkop, G. (2003). The impact of economic freedom on corruption: Different patterns for rich and poor countries. *European Journal of Political Economy*, 19(3), 605–620. doi:10.1016/S0176-2680(03)00015-6
- Hope, K. R. (2019). Controlling corruption through integrity committees: The case of Zambia. *Public Integrity*, 21(3), 248–262. doi:10.1080/10999922.2018.1468203
- Imbeau, L., & Stapenhurst, R. (2018). *Parliaments as agents of corruption control* (pp. 1–7). Brisbane, Australia: World Congress of the International Political Science Association.
- Koenker, R. (2004). Quantile regression for longitudinal data. *Journal of Multivariate Analysis*, 91(1), 74–89. doi:10.1016/j.jmva.2004.05.006
- Kotera, G., Okada, K., & Samreth, S. (2012). Government size, democracy, and corruption: An empirical investigation. *Economic Modelling*, 29(6), 2340–2348. doi:10.1016/j.econmod.2012.06.022
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). The quality of government. *Journal of Law, Economics, and Organization*, 15(1), 222–279. doi:10.1093/jleo/15.1.222
- Lederman, D., Loayza, N. V., & Soares, R. R. (2005). Accountability and corruption: Political institutions matter. *Economics and Politics*, 17(1), 1–35. doi:10.1111/j.1468-0343.2005.00145.x
- Lyrío, M. V. L., Lunkes, R. J., & Taliani, E. T. C. (2018). Thirty years of studies on transparency, accountability, and corruption in the public sector: The state of the art and opportunities for future research. *Public Integrity*, 20(5), 512–533. doi:10.1080/10999922.2017.1416537
- Machado, J. A., & Silva, J. S. (2019). Quantiles via moments. *Journal of Econometrics*, 213(1), 145–173. doi:10.1016/j.jeconom.2019.04.009
- Rauch, J. E., & Evans, P. B. (2000). Bureaucratic structure and bureaucratic performance in less developed countries. *Journal of Public Economics*, 75(1), 49–71. doi:10.1016/S0047-2727(99)00044-4
- Sarabia, M., Crecente, F., del Val, M. T., & Giménez, M. (2020). The Human Development Index (HDI) and the Corruption Perception Index (CPI) 2013–2017: Analysis of social conflict and populism in Europe. *Economic Research*, 33(1), 2943–2955.
- Shleifer, A., & Vishny, R. W. (1993). Corruption. *The Quarterly Journal of Economics*, 108(3), 599–617. doi:10.2307/2118402
- Shon, J., & Cho, Y. K. (2020). Fiscal decentralization and government corruption: Evidence from US States. *Public Integrity*, 22(2), 187–204. doi:10.1080/10999922.2019.1566427
- Stapenhurst, F., Jacobs, K., & Pelizzo, R. (2014). Corruption and legislatures: Meso-level solutions for a macro-level problem. *Public Integrity*, 16(3), 285–304. doi:10.2753/PIN1099-9922160304
- Tanzi, M. V. (1994). *Corruption, governmental activities, and markets (No. 94–99)*. International Monetary Fund. doi:10.5089/9781451852202.001
- Transparency International (TI). (2020). *Corruption Perception Index*. Retrieved from: <https://www.transparency.org/en/news/cpi-2019-sub-saharan-africa#>
- Treisman, D. (2000). The causes of corruption: A cross-national study. *Journal of Public Economics*, 76(3), 399–457. doi:10.1016/S0047-2727(99)00092-4
- United Nations Development Programme (UNDP). (2014). *UNDP Global Anti-Corruption Initiative (GAIN) 2014–2017*. New York, NY:
- United Nations Economic Commission for Africa. (2016). *Measuring corruption in Africa: International dimensions matters* (African Governance Report IV). Retrieved from: https://www.uneca.org/sites/default/files/PublicationFiles/agr4_eng_fin_web_11april.pdf.
- Zakharov, N. (2019). Does corruption hinder investment? Evidence from Russian regions. *European Journal of Political Economy*, 56, 39–61. doi:10.1016/j.ejpoleco.2018.06.005

APPENDIX A: LIST OF COUNTRIES

Botswana, Burkina Faso, Burundi, Benin, Cape Verde, Cameroon, Cote d’Ivoire, Gabon, Ghana, Guinea, Kenya, Liberia, Lesotho, Madagascar, Mauritius, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.