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Drivers of income inequality in Africa: Does institutional quality matter?

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Abstract

This paper examines the role institutional quality plays amongst the empirical drivers of income inequality in Africa. Using a dynamic two-step difference GMM with robust standard errors over the period 1990–2017, we find no statistically significant effect of institutions in general, on income inequality. However, we find that institutional quality indicators such as control of corruption and the strict enforcement of the rule of law significantly reduce income inequality. We also find no statistically significant effects of the other institutional quality indicators such as government effectiveness, voice and accountability, regulatory quality and political stability on income inequality in our sample. We suggest that more premium be placed on corruption control and the stringent adherence to the rule of law in ensuring equitable distribution of income in Africa. Furthermore, we re-echo suggestions that promote institutional development in Africa as institutions in general remain very weak.

KEYWORDS
Africa, control of corruption, income inequality, institutional quality, rule of law

JEL CLASSIFICATION
D31; D63; E02; O5

1 | INTRODUCTION

Inequality remains a critical focus of policymakers and researchers alike as it is currently considered a defining challenge because it remains high and keeps widening (Anyanwu, 2016; Dabla-Norris, Kochhar, Suphaphiphat, Ricka, & Tsounta, 2015). Reducing inequality within and among countries is presently goal 10 of the sustainable development goals (SDGs), to which world leaders appear committed. Also, reducing inequality is imperative as widening inequality signals persistent disadvantage for a group of people in society. High and persistent inequality has dire implications for economic growth, political stability and causes social unrest (Berg & Ostry, 2011; Carvalho & Rezai, 2014; Jauch & Watzk, 2016; Ncube, Anyanwu, & Hausken, 2014; OECD, 2015; Pickett & Wilkinson, 2015). It also reduces investment in education and infrastructure (Cingano, 2014; Cojocaru & Diagne, 2014) and leads to lower labour productivity (Stiglitz, 2012).

Some studies (see Fosu, 2015; Ravallion, 2004; Shimeles & Nabassaga, 2018) have shown that no matter how much economic growth is enhanced, it may not have any meaningful impact on poverty reduction and poverty alleviation unless there is a corresponding decline in inequality. Furthermore, Dabla-Norris et al. (2015) show

that GDP growth rate reduces over the medium term if the income share held by the richest 20% increases, while GDP growth rate is seen to increase if the income share held by the bottom 20% increases. This suggests that income distribution matters for economic growth and that the poor and the middle class cannot be ignored in the sustainable growth process. This notwithstanding, inequality remains relatively high and persistent in Africa (Adeleye, Osabuohien, & Bowale, 2017; Anyanwu, Erhijakpor, & Obi, 2016; Asongu, Orim, & Ntig, 2019; Kunawotor, Bokpin, Asuming, & Amoateng, 2020; Shimeles & Nabassaga, 2018). The African continent lags just behind Latin America and the Caribbean in the global income inequality distribution (Odusola, 2017; United Nations Department of Economic and Social Affairs, 2019; World Bank, 2016).

United Nations Development Programme (2017) also asserts that 10 out of the 19 most unequal countries globally are found in sub-Saharan Africa. While a lot of empirical studies and policy debates on income inequality drivers (see Anyanwu, 2016; Anyanwu et al., 2016; Dabla-Norris et al., 2015; Kunawotor et al., 2020) have gone forth to address these concerns, little success can be spoken of, especially in Africa, and this leaves more room for further studies than desired. Most of these empirical studies, however, paid little or no attention to institutional quality or governance in addressing income inequality. The few that did, concentrate only on corruption or control of corruption (Adams & Klobodu, 2016; Batabyal & Chowdhury, 2015; Berisha, Meszaros, & Olson, 2018; Dincer & Gunalp, 2008; Gyimah-Brempong, 2002; Sulemana & Kpienbaareh, 2018; Uslaner, 2007). But corruption control is just one indicator of institutional quality. Closely related to our study are recent studies by Adeleye et al. (2017) and Chu and Hoang (2020). However, while Chu and Hoang (2020) include institutional quality as a control variable in their model without recourse to its components, Adeleye et al. (2017) consider only the interactive effects of the components of institutional quality and financial development on income inequality in sub-Saharan Africa. The strength of our study is that it deviates from these trends of studies by rather investigating more comprehensively the role institutional quality/governance plays amongst the key drivers of income inequality in Africa. Also, we examine the isolated effects of the components of institutional quality in our model. Introducing institutional quality is imperative as the United Nations Development Programme (2017) suggests, among a host of other recommendations, that African countries should institutionalize better governance as one of the measures of planting and nurturing the seeds of equity in Africa. It therefore appears appropriate to empirically investigate this assertion in a more comprehensive context. The rest of the paper comprises a literature review, methodology, results and discussion and ends with a conclusion and policy recommendations.

2 | LITERATURE REVIEW

This section is divided into two subsections with a focus on the empirical evidence available on the role institutions play in addressing income inequality and also the key empirical drivers of income inequality.

2.1 | Institutional quality and income inequality

A considerable number of studies on the inequality–institutions nexus rather focused on the relationship between corruption and income inequality with little or almost no regard for the other indicators of institutional quality. The main distinguishing feature about these studies is the attempt to determine whether corruption causes inequality (Batabyal & Chowdhury, 2015; Berisha et al., 2018; Dincer & Gunalp, 2008; Dobson & Ramlogan-Dobson, 2010; Gyimah-Brempong, 2002) or inequality causes corruption (Fried, Lagunes, & Venkataramani, 2010; Policardo & Carrera, 2018; Solt, 2008; You & Khagram, 2005). Yet still, some few others establish a bi-causality between corruption and inequality (Apergis, Dincer, & Payne, 2010; Dwiputri, Arsyad, & Pradiptyo, 2018; Policardo & Carrera, 2018; Sulemana & Kpienbaareh, 2018; Uslaner, 2007, 2011). For example, a study by Sulemana and Kpienbaareh (2018) in sub-Saharan Africa using an unbalanced panel data from 1996 to 2016, showed that higher levels of income inequality are rather associated with lower corruption levels. Besides finding a reverse causality between corruption and income inequality, they also establish that corruption Granger causes inequality. Most of these empirical studies aver that corruption influences inequality through a reduction in economic growth and a reduction in public spending on education, health and other essential social services, a biased tax system and high levels of tax evasion. Conversely, inequality motivates corrupt behaviour to protect the interest of the affluent and their privileges. The rich are also more able to pay bribes to consolidate their positions. Recently, a study by Chu and Hoang (2020) examined the relationship

between economic complexity and income inequality in 88 countries and found that economic complexity is significantly associated with higher income inequality. The study includes institutions and its square as controls among other control variables such as education level, trade openness, government expenditure, GDP per capita and its square. They measure institutional quality using an average of six components of institutions from the World Governance Indicators and found that institutions have a positive and significant impact while the squared term has a negative and significant impact. Their findings imply that, in countries with low institutional quality, initial improvement widens economic disparity while much later improvement reduces income inequality. Also, Sonora (2019) examined the relationship between the rule of law and income inequality in Latin America and found that improvement to legal systems, particularly the protection of property rights and reduction of corruption, reduces inequality. Furthermore, Adeleye et al. (2017) investigate the influence that institutional quality has on financial development in reducing income inequality in sub-Saharan Africa. The study deploys five dimensions of institutional quality including control of corruption, government effectiveness, political stability, rule of law and political rights. They find only the interactive term of control of corruption with financial development to be statistically significant and conclude that if corruption is controlled, given an increase in credit, income inequality will decrease.

2.2 | Drivers of income inequality

Literature is densely populated with the empirical determinants and drivers of income inequality. In Southern Africa for instance, Anyanwu (2016) found the first and second lags of inequality, real GDP per capita and its square, population growth, secondary school enrolment, natural resource rent, gross capital formation, political globalization and its square to significantly influence income inequality while finding no significant effect for other variables such as age dependency, government consumption expenditure, economic globalization, social globalization, personal remittances, net foreign aid, democracy and unemployment. Anyanwu et al. (2016) in like manner but for West Africa found the following in addition to the significant variables found in Anyanwu (2016); government consumption expenditure, FDI inflows, trade openness, personal remittances received, social globalization, democracy, civil war and unemployment. More recently, but focused on the effects of weather-related events on income inequality in Africa, Kunawotor et al. (2020) found the first lag of inequality, political globalization and its squared term, democracy, age dependency ratio, school enrolment, gross capital formation, and natural resource rents among the significant influencers of income inequality in Africa. However, they did not find any statistically significant effect of real GDP per capita, trade openness, conflict, foreign direct investment inflows, population growth rate, government expenditure, and unemployment rate when used as control variables. These findings are very similar to that of Dabla-Norris et al. (2015) who focus on advanced economies, emerging market economies and developing countries in their study of empirical drivers of inequality. The same applies to Jaumotte, Lall, and Papageorgiou (2013) but their main focus was on globalization and technology. More recently, Furceri and Ostry (2019) investigate the robust inequality drivers in 108 countries using weighted average least squares. They find the level of development, demographics, unemployment, trade globalization and financial globalization as robust drivers of inequality within countries. Also, they find financial development and technology to significantly drive inequality in advanced economies. The missing issue about all these papers is that they did not consider institutions or any of the components of institutional quality in their studies as direct influencers of income inequality which our paper seeks to address. The choice of control variables in our study, however, is greatly informed by the empirical drivers used by these authors.

3 | METHODOLOGY

3.1 | Model specification

Our study examines income inequality in a dynamic model setting. This is because income inequality is known to exhibit a great degree of inertia as evidenced in studies by Anyanwu (2016); Anyanwu et al. (2016); Asongu, Nnanna, and Acha-Anyi (2020); Chu and Hoang (2020); Dincer and Gunalp (2012); Kunawotor et al. (2020); Mahmood and Noor (2014). Thus, the current level of income inequality depends on its past value. Our specified model, therefore, shows that inequality depends on its lag, institutional quality and a set of controls used in the inequality literature:

$$Inequality_{i,t} = \alpha + \sigma Inequality_{i,t-1} + \omega InstitutionalQuality_{i,t} + \beta' X_{i,t} + \mu_i + \mu_t + \varepsilon_{i,t} \qquad (1)$$

where $Inequality_{i,t}$ and $Inequality_{i,t-1}$ represent the current level and one-period lag of income inequality in country (i) and year (t), respectively. $InstitutionalQuality_{i,t}$ represents Kaufmann's six indicators of institutional quality (governance) in addition to its average which we term 'institutions'. These six indicators include control of corruption, rule of law, government effectiveness, voice and accountability, political stability and absence of violence and regulatory quality. $X_{i,t}$ represents a vector of control variables that affect income inequality including real GDP per capita, trade openness, natural resource rent, political globalization, democracy, unemployment, population growth, gross capital formation, school enrolment, dependency ratio, government expenditure and foreign direct investment. U_i, U_t, and $\mathcal{E}_{i,t}$ represents country fixed effects, time fixed effects and idiosyncratic error term, respectively. How these variables are defined and measured is presented in the next section.

3.2 | Variables definition and measurement and data sources

This section addresses concerns regarding variable definition and measurement, the expected signs of the explanatory variables and the sources of data. This is shown in Table 1.

In addition to the variables defined in Table 1, Kaufmann, Kraay, and Mastruzzi (2011) categorize institutions (governance) into three broad headings with two governance indicators under each. The first is the process by which governments are selected, monitored and replaced. The governance indicators that fall under this are voice and accountability and political stability and absence of violence/terrorism. The second category is the capacity of the government to effectively formulate and implement sound policies. The indicators under this are government effectiveness and regulatory quality. The final category is the respect of citizens and the state for the institutions that govern economic and social interactions among them. The indicators are rule of law and control of corruption.

3.3 | Scope of the study and estimation technique

This study employs panel data over the sample period, 1990–2017. It includes 40 African countries and the list of these countries is shown in Table 2. In terms of our estimation technique, the dynamic two-step difference generalized method of moment (GMM) with robust standard errors is deployed.

The choice of GMM is motivated by five reasons in line with recent GMM-centred literature (see Agoba, Abor, Osei, & Sa-Aadu, 2019; Asongu et al., 2019, 2020; Fosu & Abass, 2019; Kunawotor et al., 2020; Ogbeide and Adeboje, 2020; Tchamyou, Asongu, & Odhiambo, 2019). First, the cross-sectional units (*N*) are higher than the time series (*T*). Thus, the number of countries is 40 while the sampled period is 28 years. Second, the data set is panel in nature and the empirical approach accounts for cross-country differences in the estimation process. Third, endogeneity concerns are addressed in two ways: GMM controls for unobserved heterogeneity by accounting for time-invariant omitted variables. Also, GMM generates internal instruments that account for simultaneity bias or reverse causality. Fourth, inequality is known to be persistent and depends on its lags (see Anyanwu et al., 2016; Asongu et al., 2020; Cevik & Correa, 2015; Kunawotor et al., 2020; Shimeles & Nabassaga, 2018). This is also confirmed in our result as the first period lag of the income inequality appears statistically significant in Table 4. Finally, GMM is preferred as an estimation strategy because there are general difficulties in finding external instruments.

The robustness of GMM is also evidenced in several tests. The Hansen test for overidentifying restrictions tests for the validity of the moment conditions. Also, the test of the null hypothesis of no second-order serial correlation is performed by the Arellano–Bond test for autocorrelation (AR (2)).

4 | RESULTS AND DISCUSSION

4.1 | Descriptive statistics

Income inequality is relatively high in Africa compared to the other continents as shown by the mean of market Gini (48.254) in Table 3. In terms of regional distribution, Southern Africa recorded the highest average Gini score of 59.07.

TABLE 1 Variable definitions and measurements and sources of data

Variables	Variables definitions and measurement	Data source
Income inequality	Inequality represents the extent of distribution of income among households or individuals within a country. It is measured by market/gross Gini (pre-tax, pre-transfer income) and net Gini (post-tax, post-transfer income). It ranges from 0 to 100, where 0 represents perfect equality while 100 represents perfect inequality.	Standardized World Income Inequality Database (SWIID) from UNU-WIDER
Institutions	Institutions or governance is defined as the traditions and institutions by which authority in a country is exercised. It is computed as an average of Kaufmann's six indicators of governance or institutional quality. All institutional quality variables range from −2.5 (weak institutions) to 2.5 (strong institutions).	World Governance Indicators developed by Kaufmann et al. (2011).
Control of corruption	It captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests.	World Governance Indicators
Rule of law	It captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence.	World Governance Indicators
Voice and accountability	This captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association and a free media.	World Governance Indicators
Political stability and absence of violence/terrorism	It captures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism.	World Governance Indicators
Government effectiveness	This captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation and the credibility of the government's commitment to such policies.	World Governance Indicators
Regulatory quality	It captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	World Governance Indicators
Real GDP per capita	It is measured as the natural log of constant gross domestic product per capita (GDP).	World Development Indicators from the World Bank
Trade openness	This captures the extent of trade liberalization in a country and measured as the sum of total exports and imports as a fraction of GDP.	World Development Indicators
Natural resource rent	It is the extent of reliance on natural resources in a country and it is measured as total natural resources rent as a percentage of GDP.	World Development Indicators
Political globalization	It is measured by KOF's indices of globalization and comprises the absolute number of embassies in a country, personnel contributed to UN Security Council missions (percentage of the population), number of internationally oriented non-governmental organizations operating in a country, number of international inter-governmental organizations in which a country is a member,	KOF (2019)

TABLE 1 (Continued)

Variables	Variables definitions and measurement	Data source
	international treaties signed and number of distinct treaty partners of a country with bilateral investment treaties.	
Democracy	This is measured by polity 2 index and ranges from −10 representing autocracy to 10 representing democracy.	Marshall's Polity IV Project
Age dependency ratio	It is computed as the sum of young age population and old age population as a ratio of the working age population.	World Development Indicators
Foreign direct investment	It is measured as net inflows of foreign direct investment to GDP.	World Development Indicators
Gross capital formation	This is defined as the extent of usage of physical capital in production and measured as gross capital formation to GDP.	World Development Indicators
Population growth	It is measured as the annual percentage growth in population.	World Development Indicators
School enrolment	It is measured as the secondary school gross enrolment rate.	World Development Indicators
Unemployment	This is measured as total unemployment as a percentage of the labour force.	World Development Indicators
Government expenditure	It is measured as general government final consumption expenditure as a percentage of GDP.	World Development Indicators

Source: Authors' construct (2020).

This is followed by West Africa (46.040), East Africa (45.39) and North Africa (42.50). Similar results are seen in the study by Adeleye et al. (2017) and Odusola (2017) where South Africa and Namibia recorded the highest Gini scores. Institutions in general also appear very weak in Africa as depicted by the mean of −0.628, a minimum of −2.1 and a maximum of 0.88 on a scale of −2.5 (weak) to 2.5 (strong).

The best indicators of institutional quality in Africa are political stability and absence of violence/terrorism (−0.506) and control of corruption (−0.603) as they have the highest mean score, albeit relatively very weak. The worst indicators are government effectiveness and regulatory quality with a mean of −0.707 and −0.667, respectively. The results of our institutional indicators are very much in line with those of Adeleye et al. (2017) and Agbloyor (2019). The summary statistics of the other variables is shown in Table 3.

4.2 | Discussion of results

Our results confirm the essence of the usage of a dynamic model as the first period lag of income inequality is found to be a highly significant driver of current levels of income inequality shown in Models 1–7 in Table 4. The implication is

TABLE 2 List of African countries in the study

1. Algeria	2. Benin	3. Botswana	4. Burkina Faso	5. Burundi
6. Cabo Verde	7. Cameroon	8. CAR	9. Chad	10. Comoros
11. DRC	12. Côte d'Ivoire	13. Egypt	14. Eswatini	15. Gabon
16. Gambia	17.Ghana	18. Guinea	19. Guinea Bissau	20. Kenya
21. Lesotho	22. Liberia	23. Madagascar	24. Malawi	25. Mali
26. Mauritania	27. Mauritius	28. Morocco	29. Mozambique	30. Niger
31. Nigeria	32. Rwanda	33. Senegal	34. Sierra Leone	35. South Africa
36. Tanzania	37. Togo	38. Tunisia	39. Uganda	40. Zimbabwe

TABLE 3 Descriptive statistics

Variable	Obs.	Mean	Std. dev.	Min.	Max.
Market_gini	986	48.254	7.921	33.7	70.7
Net_gini	986	43.344	7.099	30.2	62.4
Control of corruption	988	−0.603	0.6	−1.826	1.217
Rule of law	988	−0.662	0.622	−2.13	1.077
Gov't effectiveness	988	−0.707	0.599	−1.89	1.049
Political stability	988	−0.506	0.879	−2.845	1.282
Regulatory quality	988	−0.667	0.597	−2.298	1.127
Voice and accountability	988	−0.622	0.724	−2.226	1.007
Institutions	988	−0.628	0.588	−2.1	0.88
Trade openness	1,251	0.693	0.35	0.191	3.762
Natural resource rent	1,423	12.263	12.336	0	84.24
Political globalization	1,453	53.602	17.936	8.21	92.148
Democracy—polity2	1,345	0.616	5.658	−10	10
Dependency ratio	1,450	84.509	15.633	41.293	112.849
Foreign direct investment	1,388	4.036	9.132	−8.589	161.824
Real GDP per capita	1,390	2211.006	2926.692	164.337	20512.941
Gross capital formation	1,293	21.575	9.888	−2.424	85.101
Population growth rate	1,450	2.379	1.085	−6.766	8.118
School enrolment rate	862	41.225	25.644	5.221	115.957
Unemployment rate	1,377	9.299	7.593	0.285	37.94
Gov't expenditure	1,263	15.302	7.497	0.911	73.577

that the past level of income inequality drags the current level from falling. This is similar to the findings of Anyanwu (2016), Anyanwu et al. (2016). We find no significant effect of institutions in general on income inequality in our sample even though it carried a negative sign as *a priori* expected shown in Model 1. This may probably be due to the relatively weak nature of these institutions and hence the lack of statistical strength to cause a major impact on income inequality. However, we find control of corruption and rule of law to be statistically significant with their expected negative signs in our sample as shown in Models 2 and 3, respectively. Interestingly, these two statistically significant institutional quality or governance indicators fall under Kaufmann's third category of 'the respect of citizens and the state for the institutions that govern economic and social interactions among them'. The policy implications we can derive from this finding is that African countries that are relatively more able to control the level of corruption in their countries have relatively reduced income inequality levels and this conforms to the findings of Gyimah-Brempong (2002); Dincer and Gunalp (2008); Batabyal and Chowdhury (2015); and Adams and Klobodu (2016). Corruption can affect income inequality in two ways according to Ostry et al. (2019). First, corruption beneficiaries are usually well connected and have higher incomes, which undermines the capacity of the government to ensure a more equitable distribution of resources. Second, corruption tends to create a biased tax system, which favours the rich and well connected. Further, the facilitation of tax evasion through corruption affects a government's ability to collect taxes and fairly distribute wealth. Similarly, a relatively robust practice of rule of law significantly reduces income disparities in Africa as confirmed in the study of Sonora (2019) in Latin America. Intuitively and policy-wise, as public power is not exercised for private gain and the elites and private interest groups do not capture the state, there is fairness in the distribution of national income. Also, as long as there is an improvement in the extent to which agents have confidence in and abide by the rules of society, particularly, the quality of contract enforcement, property rights, the police and the courts, there is a guaranteed reduction in income disparities and hence a fairer share of the national cake. This is consistent with the emphasis by Ostry et al. (2019) who assert that institutions that guarantee property rights are likely

TABLE 4 Effect of institutional quality on income inequality (gross/market Gini)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Lag of inequality	0.937***	0.938***	0.930***	0.926***	0.951***	0.916***	0.913***
	(0.036)	(0.035)	(0.0312)	(0.034)	(0.043)	(0.037)	(0.039)
Institutions	−0.180 (0.133)						
Control of corruption		−0.175* (0.098)					
Rule of law			−0.225** (0.096)				
Gov't effectiveness				−0.094 (0.094)			
Political stability					−0.140 (0.121)		
Regulatory quality						−0.018 (0.089)	
Voice and accountability							0.016 (0.109)
Real GDP per capita	0.374	0.432*	0.412*	0.360	0.300	0.365	0.368
	(0.230)	(0.227)	(0.232)	(0.258)	(0.237)	(0.274)	(0.291)
Political globalization	−0.004	−0.005	−0.005	−0.005	−0.003	−0.006	−0.006
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
FDI	0.005	0.005	0.004	0.005	0.005	0.005	0.005
	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)
Dependency ratio	−0.008	−0.008	−0.008	−0.009	−0.009*	−0.011	−0.012
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.007)	(0.007)
School enrolment	−0.009*	−0.009*	−0.009*	−0.009*	−0.009**	−0.009	−0.009
	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)	(0.006)
Population growth	0.065	0.076	0.061	0.061	0.069	0.054	0.052
	(0.050)	(0.053)	(0.046)	(0.056)	(0.044)	(0.057)	(0.064)
Gov't expenditure	0.016**	0.016**	0.016**	0.017**	0.015**	0.019**	0.019**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)	(0.008)	(0.009)
Democracy—Polity2	−0.008	−0.008	−0.010	−0.010	−0.011	−0.011	−0.012
	(0.008)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.013)
Trade openness	−0.109	−0.142	−0.066	−0.116	−0.096	−0.129	−0.131
	(0.128)	(0.128)	(0.118)	(0.138)	(0.128)	(0.146)	(0.152)
Unemployment rate	−0.005	−0.004	−0.006	−0.005	−0.009	−0.003	−0.003
	(0.005)	(0.005)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)
Gross capital formation	−0.007**	−0.007**	−0.007**	−0.007**	−0.008***	−0.007**	−0.007**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Natural resource rent	−0.011***	−0.010***	−0.011***	−0.010***	−0.010***	−0.010**	−0.010**
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Constant	1.578	1.124	1.650	2.348	1.549	2.991	3.190
	(2.408)	(2.426)	(2.243)	(2.384)	(2.374)	(2.623)	(2.907)
Observations	344	344	344	344	344	344	344
Number of instruments	16	16	16	16	16	16	16
Number of countries	40	40	40	40	40	40	40
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AR(1):(Pr > z)	(0.007)	(0.008)	(0.007)	(0.008)	(0.011)	(0.007)	(0.007)
AR(2):(Pr > z)	(0.996)	(0.842)	(0.912)	(0.958)	(0.782)	(0.963)	(0.964)
Hansen:(Prob > χ^2)	(0.885)	(0.842)	(0.897)	(0.791)	(0.949)	(0.697)	(0.675)

Note: Model 1 discusses the effect of institution on income inequality. Models 2–6 discuss the effects of the components of institution on income inequality. Standard errors are in parentheses.

*$p < 0.1$.

**$p < 0.05$.

***$p < 0.01$.

TABLE 5 Effect of institutional quality on income inequality (Net Gini)

Variables	Model 8	Model 9	Model 10
Lag of Inequality	0.950***	0.952***	0.938***
	(0.053)	(0.056)	(0.049)
Institutions	−0.217		
	(0.129)		
Control of corruption		−0.201**	
		(0.094)	
Rule of law			−0.223**
			(0.110)
Real GDP per capita	0.430*	0.496**	0.470*
	(0.233)	(0.234)	(0.246)
Political globalization	−0.002	−0.004	−0.004
	(0.005)	(0.005)	(0.005)
FDI	0.003	0.003	0.003
	(0.003)	(0.003)	(0.004)
Dependency ratio	−0.010	−0.010*	−0.011
	(0.006)	(0.006)	(0.007)
School enrolment rate	−0.010*	−0.011*	−0.010*
	(0.005)	(0.005)	(0.006)
Population growth rate	0.076	0.090	0.072
	(0.054)	(0.059)	(0.059)
Government expenditure	0.015**	0.015**	0.015**
	(0.007)	(0.006)	(0.007)
Democracy—Polity2	−0.002	−0.002	−0.006
	(0.012)	(0.011)	(0.011)
Trade openness	−0.076	−0.114	−0.042
	(0.133)	(0.135)	(0.122)
Unemployment rate	−0.003	−0.002	−0.003
	(0.006)	(0.006)	(0.006)
Gross capital formation	−0.006**	−0.005**	−0.006**
	(0.002)	(0.002)	(0.003)
Natural resource rent	−0.011**	−0.010**	−0.012**
	(0.005)	(0.005)	(0.005)
Constant	0.347	−0.181	0.735
	(3.001)	(3.229)	(2.764)
Observations	344	344	344
Number of countries	40	40	40
Prob > F	0.000	0.000	0.000
AR(1):(Pr > z)	(0.083)	(0.061)	(0.090)
AR(2):(Pr > z)	(0.361)	(0.340)	(0.371)
Hansen:(Prob > χ^2)	(0.953)	(1.000)	(0.975)

Note: Standard errors are in parentheses.

*$p < 0.1$.

**$p < 0.05$.

***$p < 0.01$.

to foster investment and growth which reduces income inequality. Also, according to Furceri and Ostry (2019), 'institutions that guarantee civil liberties help prevent the exploitation of the poor by wealthy elites in economic bargaining. Also, institutions that deliver political rights uniformly across the public can generate pressure for redistributive policies'.

However, we find no statistically significant effect of the other subcomponents of institutional quality such as government effectiveness, political stability, regulatory quality and voice and accountability in our sample as observed in Models 4–7. It suggests that strengthening these indicators of institutional quality may yield the needed fruits in the future.

Real GDP per capita has a positive and statistically significant effect on income inequality. It implies that an increase in per capita GDP is associated with an increase in income inequality in Africa. This is very much in line with the findings of Anyanwu et al. (2016) for West Africa and Anyanwu (2016) for Southern Africa. Also, we find secondary school enrolment rate to be negatively and significantly associated with income inequality. This conforms to our *a priori* expectations and the findings of Dincer and Gunalp (2012) for the USA, Anyanwu et al. (2016) for West Africa and Kunawotor et al. (2020) for Africa. The policy implication is that as human capital is enhanced and empowered, it narrows the income inequality gap in Africa. This same finding applies to the usage of gross capital formation and natural resource rent as they are also statistically significant with negative signs. As more domestic investments are made into physical capital, productivity is enhanced and this translates to more job opportunities and income for the underprivileged. Similarly, the exploitation of natural resources does not only enhance the economic status of Africans but may also lead to a fairer share of income. Finally, excessive and untargeted government spending increases the income inequality gap and this may be due to high levels of corrupt spending that could not be accounted for.

We find no significant effect of the other variables such as political globalization, FDI inflows, dependency ratio, population growth, democracy, trade openness and unemployment in our study. All these findings are very robust when we use the net or disposable Gini as a measure of income inequality but we show only the significant models including that of institutions in Table 5 to conserve space. These apply to institutions, control of corruption and rule of law in Models 8, 9 and 10, respectively.

5 | CONCLUSION AND RECOMMENDATIONS

Income inequality is pervasive in Africa and this has necessitated numerous studies to find the key drivers of this canker, albeit to the neglect of institutional quality indicators. This paper, therefore, sought to examine the implications of institutional quality or governance in addressing income inequality in Africa. Our findings reveal that control of corruption and the ardent practice of rule of law statistically and significantly reduce income inequality in Africa. We find no statistically significant impact of institutions in general on inequality. In the same vein, we find no significant impact of the other components of institutional quality on inequality, namely government effectiveness, regulatory quality, political stability and the absence of violence and voice and accountability, in our sample. These results are robust to the usage of an alternative measure of income inequality (Net Gini).

We suggest that government efforts should be more directed at enhancing contract enforcement and property rights and also preventing the exploitation of the poor by the wealthy elites in the economic bargaining process to ensure a fairer distribution of the national cake and reduce economic disparities in Africa. Thus, while it is important to strengthen institutions as a whole in Africa, particular attention should be paid to efforts in enhancing control of corruption and the strict adherence to the rule of law. Also, human capital should be enriched and there should be an effective deployment of capital as well as effective management of natural resources to enhance the well-being of Africans.

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