



DEMOCRACY AND ECONOMIC DEVELOPMENT IN AFRICA: A FRIEND OR FOE?

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ABSTRACT

DOI No: 10.36713/epra6811

Article DOI URL: <https://doi.org/10.36713/epra6811>

The study assessed the impact of democracy on economic development in Africa from 1996 to 2017 for a panel study of 50 African countries. The study employed panel methodologies such as panel stepwise regression, generalized linear model, and Arellano-Bond dynamic panel data GMM (two-step) and censored Tobit regression methods for its robustness inference. The study found a negative and strong statistically significant relationship between democracy and economic development in Africa. Whereas the rule of law negatively relates to economic growth and voice and accountability also relates at a statistical significance level of 1% across all the methods used for the data analysis. In the wake to achieve higher economic development, one variable critically showed promising thus human development index. The human development index encompasses a composite measure of life expectancy at birth, per capita income indicators, and level of education in every country.

KEYWORDS: Democracy; Economic development; Rule of law; Voice and Accountability; Corruption control

1. INTRODUCTION

Democracy is the political system in which the well-being of the citizens is maximized due to enacted rules and regulations El-Rufa'i (, 2003). Rivera-Batiz and Rivera-Batiz (2002) opined whether a country has checks and balances on executive powers, constitutional processes, guarantees, freedom of the press, and the absence of censorship, clear and effective judicial and legal structure, in policymaking can be termed as “democracy.” Lipsett (1959) posits that the more developed a country is economical, the more likely that country will be democratic and will enjoy stabilized political environment. Lipsett (1959) studied democracy and economic development in Latin America and Europe; he used several indices such as per capita income, education levels, the country's population employed in the agricultural sector, and urbanization to measure development. The study found that democracy and the level of development in countries are interconnected; hence, a more economically developed country tends to be democratic in its political system as against underdeveloped countries. He further suggested that the first step in the modernization of a country is urbanization and, subsequently, media growth and literacy. However, rapid industrial

development becomes the next stage in modernization. Consequently, the change in the advancement of communication networks propels the improvement of formal democratic institutions such as voting and citizen participation in the decisions of their governments.

Many empirical works of literature have posited that the relationship between democracy and economic development has mixed results, thus positive and negative effects (Przeworski and Limogé, 1993; Brunetti, 1997; Przeworski et al., 2000; Krieger, 2004; Brown and Mobarak, 2009; Bjornskov, 2010; Profeta et al., 2013; Chowdhury, 2013; Aisen and Veiga, 2013; Houssem and Hichem, 2015; Carolyn and Manoel, 2019). Doucouliagos and Ulubasoglu (2008) and Tanga and Yung (2008) confirm that democracy does not directly impact economic development. Still, there is a positive relationship between the two where there is lower inflation, political stability, a high level of human capital, and higher economic freedom.

Houssem and Hichem (2015) studied democracy and economic growth in 17 MENA countries from 1983 to 2012 using fixed effects/random effects and generalized method of moments (GMM) system approaches. They found that democracy, as measured by proxy of institutionalized democracy score, standardized autocracy score, the competitiveness of executive recruitment, the openness of executive recruitment, and administrative constraints, have a negative and robust impact on economic growth in MENA countries, as supported by studies of (Aisen and Veiga, 2013; Narayan et al., 2011). A recent survey from Carolyn and Manoel (2019) assessed the relationship between economic development and democracy in Sub-Saharan Africa. The researchers found that economic growth and democracy negatively affect per capita income as a measure of economic development. Still, when they used Lipset's modernization hypothesis by employing principal component analysis, they found that economic growth and democracy have a positive relationship. Prior studies have also found that democracy and economic development have a positive relationship (Tarares and Wacziarg, 2001; Kurzman et al., 2002; Benhabib et al., 2003; Papaioanou and Siouroumis, 2008; Rock, 2009; Knutzen, 2013; Hellmanzik, 2013; Collier & Hoeffer, 2009) in support of Carolyn and Manoel (2019).

The study has found no consensus on the nexus of economic development and democracy, hence the motivation to delve into this area to assess the effect that exists in Africa to contribute to the existing literature in empirical and scientific approaches. The study comprises section 2, which outlines the method and data for the analysis, section 3 reports the results and discussions, and section 4 concludes the study.

2. METHOD

The study used secondary data from the Global financial development database (IMF, 2017) and Worldwide Governance Indicators (Kaufman et al., 2012, updated in 2018) from 1996 to 2017. The study employed panel data from 50 African countries. The analysis was done using panel data methodologies such as panel unit root tests, panel cointegration test, stepwise panel regression, panel generalized linear model. Also, Arellano-Bond dynamic panel data GMM methods and Granger causality test was conducted to analyze the model's reliability. The study used gross domestic product per capita as a proxy measure of economic development (dependent variable). The independent variables used are law and voice and accountability as proxies' measure of democracy. Moreover, some control variables were considered to control democracy and economic development, political stability, corruption control, government effectiveness, and human development index.

The econometric model for the linear regression is as follows:

$$GDPPC_{it} = \beta_0 + \beta_1 DEMOCRACY_{it} + \beta_2 HDI_{it} + \beta_3 GOVEFF_{it} + \beta_4 POLSTAB_{it} + \beta_5 CORCO_{it} + \mu_{it} \quad (1)$$

Where

β_0 is the intercept,

GDPPC is the proxy measure of economic development,

HDI is human development index,

GOVEFF refers to government effectiveness,

POLSTAB refers to political stability,

CORCO refers to corruption control,

Two proxies measure DEMOCRACY, thus the rule of law and voice and accountability, μ refers to the error term or disturbances, i is the cross-sections of 50 countries, and t is from 1996 to 2017.

Hence, the model for Arellano-Bond dynamic panel data methodology can be written as;

$$GDPPC_{it} = \sum_{j=1}^p a_j \ln.GDPPC_{it-j} + \beta_1 DEMOCRACY_{it} + \beta_2 HDI_{it} + \beta_3 GOVEFF_{it} + \beta_4 POLSTAB_{it} + \beta_5 CORCO_{it} + v_{it} + e_{it} \quad i=1, \dots, N, t=1, \dots, T \quad (2)$$

In equation (2), $i = 1, \dots, N$ represents the cross-section observation, $t = 1, \dots, T$ represents the time period. GDPPC represents economic development. DEMOCRACY stands for the independent variables (the rule of law and voice and accountability) as proxies to measure democracy. HDI refers to human development index, POLSTAB refers to political stability, CORCO refers to corruption control, and GOVEFF refers to government effectiveness; v_{it} represents the panel level effects, and e_{it} represents the independent and identically distributed (i.i.d) over the whole sample data with variance σ_e^2 . The error term is expected to be normally and identically distributed with zero mean and constant variance; therefore, the symbol μ_{it} represents the error term.

3. RESULTS AND DISCUSSION

3.1 Descriptive statistics

The table reports the descriptive statistics of the variables used for the study. The table shows that the mean and median are closely related, and the standard deviation is homogenous. Moreover, Skewness and Kurtosis tests confirm that the data are positively skewed and leptokurtic. Jarque-Bera test demonstrates that the data are symmetric and not in a normal distribution. To account for the performance of the variables between the study's periods, table 1 reports the mean, median, minimum and maximum values. The evidence shows that the average gross domestic product per capita for the 50 African countries stood at an annual growth rate of 7.061% between 1996 and 2017. On average, human development index was 0.461, which was below average for a maximum value of 1 to record higher human development. The rule of law and voice and accountability was used to measure the performance of democracy with the proxy variables; the two variable scored -0.568 and -0.517 averagely between 1996 and 2017, confirming poor performance with regards to democracy practice as a score of -2.5 means weak and +2.5 means strong. Also, the control of corruption and governments' effectiveness in formulating and implementing good and quality policies to ensure the quality of life for its citizens scored -0.529 and -0.608; these scores show that the control of corruption has been weak on the average in Africa as well as governments' effectiveness. Political stability in Africa between the sample period reveal very weak as the average annual score was -0.451, which falls within the region of a weak score with a measure of -2.5 as weak and +2.5 as strong.

Table 1 Descriptive statistics

	RULELAW	VOICEACC	LNGDPPC	GOVEFF	HDI	POLSTAB	CORCO
Mean	-0.568	-0.517	7.061	-0.608	0.461	-0.451	-0.529
Median	-0.534	-0.423	6.820	-0.623	0.461	-0.237	-0.597
Maximum	1.077	1.007	9.920	1.049	0.797	1.282	1.217
Minimum	-2.130	-2.226	4.811	-1.890	0.000	-2.845	-1.826
Std. Dev.	0.630	0.704	1.086	0.617	0.167	0.846	0.604
Skewness	0.016	-0.118	0.630	0.120	-0.844	-0.498	0.341
Kurtosis	2.378	2.309	2.448	2.271	4.413	2.643	2.543
Jarque-Bera	17.643	24.269	86.198	26.755	220.683	50.907	30.654
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1092	1092	1092	1092	1092	1092	1092

3.2 Panel Unit Root Test

The study performed a panel unit root test to confirm stationarity among the variables, rejecting the null hypothesis that there is a unit root. Table 2 exhibits the unit root test result; the results demonstrate that all the variables showed stationarity at level form. However, ln gdppc, rulelaw, and corco did not show stationarity in IPS, ADF-Fisher, and LLC. At first difference, all the variables became stationary with all the tests performed; thus, Levin, Lin & Chi (2002), Im-Pesaran and Shim (2003), and Maddala and Wu (1999) tests. Furtherance to conduct other tests is necessary because the null hypothesis is rejected as no unit root was witnessed after performing the first difference. Therefore, the regression analysis that is done by the study is not considered spurious.

Table 2 Panel Unit Root Test

Unit root	LNGDPPC	RULELAW	VOICEACC	GOVEFF	HDI	POLSTAB	CORCO
Level form							
LLC	-3.206***	2.158	-2.951**	-2.169**	-9.265***	-3.566***	0.427
IPS	2.390	-2.031**	-7.741***	-4.005***	-2.780**	-6.901***	-3.349***
ADF-Fisher	111.140	140.792**	276.930***	282.025***	257.518***	271.701***	174.131***
PP-Fisher	131.145**	684.288***	666.106***	670.037***	163.378***	542.365***	571.307***
First difference							
LLC	-16.267***	-119.608***	-107.507***	-114.321***	-8.166***	-82.749***	-110.781***
IPS	-16.654***	-109.640***	-94.478***	-100.619***	-13.040***	-70.966***	-100.334***
ADF-Fisher	452.546***	8511.95***	7029.32***	7771.17***	370.487***	4355.34***	7896.31***
PP-Fisher	571.754***	9295.43***	8458.63***	8449.35***	454.314***	6590.34***	8398.53***

Note: ***indicates 1% significance, ** indicates 5% significance, * indicates 10% significance. LLC =Levin, Li & Chi test, IPS= Im-Pesaran & Shim test, ADF Fisher and PP Fisher refer to Maddala & Wu tests. HDI=Human Development Index, Rulelaw=Rule of Law, Voiceacc=Voice and Accountability, Polstab=Political stability, Corrup-=Corruption control, Goveff=Government effectiveness.

3.3 Johansen Fisher combined cointegration test

The table represents the cointegration test results. It is evidenced that from None to At most 6, there is confirmation of cointegrated relationship among the variables from trace test and max-eigen test at 1% significance level. The cointegration test is important such that it reveals the long-run relationship between the variables.

Table 3 Johansen Fisher combined cointegration test

Hypothesized No. of CE(s)	Fisher Stat.* (from trace test)	Prob.	Sig.	Fisher Stat.* (from max-eigen test)	Prob.	sig.
None	47.13	1.000		286.6	0.000	***
At most 1	746.5	0.000	***	746.5	0.000	***
At most 2	1869.	0.000	***	1281.	0.000	***
At most 3	983.1	0.000	***	636.8	0.000	***
At most 4	502.0	0.000	***	367.4	0.000	***
At most 5	266.0	0.000	***	224.2	0.000	***
At most 6	183.4	0.000	***	183.4	0.000	***

Note: *** indicates 1% significance level

3.4 Democracy and economic development in Africa

The study adopted stepwise regression and a generalized linear model to ascertain the linear estimations to assess the impact of democracy on economic development in Africa. The research also developed three models; model 1 considers one democracy variable, thus the rule of law. Model 2 considers voice and accountability, while model 3 put the two proxy variables of democracy, therefore the rule of law and voice and accountability, into factor to arrive at factual inference. These models assess the independent effect of the individual variables and the dependent effect in one model. Table 4 reports the results, and from the table, all the two proxies for democracy (RULELAW & VOICEACC) confirmed a negative and strong statistical significance relationship with economic development with the same coefficients of -0.54, -0.30, -0.37, and -0.24 in the three models constructed respectfully. Corruption also showed a negative and strong statistically significant relationship with economic development across two models (1 & 2) and methods with coefficients of -0.16 and -0.23. Still, it showed negative insignificance in model 3, which has the assumption that there is an existence of the rule of law and voice and accountability.

Meanwhile, Human development index, which measures the composite index of life expectancy, education, and per capita income indicators, showed a strong positive and statistical relationship with economic development. Furthermore, political stability and governments' effectiveness contribute positively to economic growth. The

results confirm that governments' point in the quality of policy formulation, implementation, and the credibility of commitments of such policies and political stability devoid of terrorism. Violence has a strong positive impact on economic development in Africa and democracy as in voice and accountability.

Table 5 reports the robust estimations for the study; the generalized method of moments (two-step) forms supports the stepwise regression and generalized linear model results. The study used the two-step GMM method for its estimations due to less propensity of an influence by heteroskedasticity than the one-step method. Furthermore, a Sargan test was performed to examine the validity of instruments used in the process. Again, AR(1) and AR(2) test was also performed to check for autocorrelation of the residuals; the value of AR(2) depicts that the hypothesis of zero second-order serial correlation existing among the variables cannot be rejected. Moreover, the results confirm that the model is fit and the tests support the estimations.

Table 4 Democracy and economic development: stepwise regression and generalized linear model analysis

	Stepwise Regression			Generalized Linear Model		
	1	2	3	1	2	3
HDI	3.90 (27.18)***	3.77 (26.41)***	3.82 (26.72)***	3.90 (27.18)***	3.77 (26.41)***	3.82 (26.72)***
POLSTAB	0.35 (8.48)***	0.32 (8.36)***	0.37 (8.99)***	0.35 (8.48)***	0.32 (8.36)***	0.37 (8.99)***
GOVEFF	0.69 (7.55)***	0.53 (6.90)***	0.68 (7.57)***	0.69 (7.55)***	0.53 (6.90)***	0.68 (7.57)***
CORRUP	-0.16 (-1.80)*	-0.23 (-2.90)**	-0.12 (-1.40)	-0.16 (-1.80)*	-0.23 (-2.90)**	-0.12 (-1.40)
RULELAW	-0.54 (-4.93)***		-0.37 (-3.21)***	-0.54 (-4.93)***		-0.37 (-3.21)***
VOICEACC		-0.30 (-5.77)***	-0.24 (-4.38)***		-0.30 (-5.77)***	-0.24 (-4.38)***
Constant	5.45 (69.23)***	5.51 (70.49)***	5.48 (69.91)***		5.51 (70.49)***	5.48 (69.91)***
R-squared	0.51	0.52	0.52			
Adjusted R2	0.51	0.52	0.52			
F-statistics	230.079***	233.720***	198.154***			
LR statistic				1150.392***	1168.601***	1188.921***
observations	1092	1092		1092	1092	1092

Note: ***indicates 1% significance, ** indicates 5% significance, * indicates 10% significance. Z-statistics and T-statistics are in parentheses. HDI=Human Development Index, Rulelaw=Rule of Law, Voiceacc=Voice and Accountability, Polstab=Political stability, Corrup-=Corruption control, Goveff=Government effectiveness.

Table 5 Robust test: Arellano-Bond dynamic panel data estimation GMM

	1	2	3
LNGDPPC	-0.18 (-81.09)***	-0.18 (-80.29)***	-0.18 (-68.07)***
L1	4.71 (75.21)***	4.58 (174.10)***	4.61 (94.49)***
HDI	0.22 (24.98)***	0.21 (37.26)***	0.24 (45.59)***
POLSTAB	0.413 (16.69)***	0.35 (26.34)***	0.42 (15.01)***
GOVEFF	-0.13 (-7.94)***	-0.15 (-9.65)***	-0.10 (-3.61)***
CORRUP	-0.30 (-19.66)***		-0.18 (-3.65)***
RULELAW		-0.21 (-46.84)***	
VOICEACC			-0.18 (-18.03)***
Constant	5.22 (148.90)***	5.12 (125.26)**	5.36 (123.15)**
Wald chi2 test	40025.97***	100141.14***	105234.41***
Sargan test	21.990	21.992	21.987
Prob.	1.000	1.000	1.000
AR(1)	(-4.465)***	(-4.447)***	(-4.453)***
AR(2)	(-2.482)**	(-2.354)**	(-2.423)**
Observations	1032	1032	1032

Note: ***indicates 1% significance, ** indicates 5% significance, * indicates 10% significance. Z-statistics are in parentheses. HDI=Human Development Index, Rulelaw=Rule of Law, Voiceacc=Voice and Accountability, Polstab=Political stability, Corrup-=Corruption control, Goveff=Government effectiveness.

The results from Arellano-Bond dynamic panel data estimations showed insignificant and unfit to robust check the study's main regression method because the test for serial autocorrelation showed smaller p-values at 5% and 1%, respectively. However, the study employed another regression method to cross-check the results already produced by the main regression methods, thus generalized linear and stepwise regression methods. The technique used for this purpose was censored tobit regression; evidence from the regression with this method can be found in table 6. The results show that even though the dynamic panel estimations had serial autocorrelation, the results produced coincide with the results from the censored tobit regression. Furthermore, the results are shown in Table 6 confirm a negative and statistically significant relationship between democracy and economic development as evidence from the results depict that rule of law (rulelaw) and voice and accountability (voiceacc) thus democracy variables all showed a statistically significant relationship.

Table 6 Results from Censored Tobit regression

	1	2	3
HDI	3.90 (27.25)***	3.77 (26.49)***	3.82 (26.81)***
POLSTAB	0.35 (8.51)***	0.32 (8.38)***	0.37 (9.02)***
GOVEFF	0.69 (7.57)***	0.53 (6.92)***	0.68 (7.60)***
CORRUP	-0.16 (-1.80)*	-0.23 (-2.91)**	-0.12 (-1.40)

RULELAW	-0.54 (-4.94)***		-0.37 (-3.22)***
VOICEACC		-0.30 (-5.79)***	-0.24 (-4.40)***
Constant	5.45 (69.41)***	5.51 (70.69)***	5.48 (70.13)***
Error Distribution			
Scale:C(8)(7)	0.76 (46.73)***	0.75 (46.73)***	0.75 (46.73)***
Mean Dependent Var	7.06	7.06	7.06
Log likelihood	-1244.244	-1239.816	-1234.654
Avg. log likelihood	-1.14	-1.14	-1.13
Observations	1092	1092	1092

Note: *** indicates 1% significance and ** indicates 5% significance: Z-statistics are in parentheses. HDI=Human Development Index, Rulelaw=Rule of Law, Voiceacc=Voice and Accountability, Polstab=Political stability, Corrup-=Corruption control, Goveff=Government effectiveness.

4. CONCLUSION AND RECOMMENDATION

The study assessed the impact of democracy on economic development in Africa by using panel data on 50 African countries from 1996 to 2017. The study used panel data methodologies such as stepwise regression, generalized linear model, and dynamic GMM panel data estimation methods to analyze the data to make a statistical inference. Furthermore, upon examining the study's data, it was realized that the robust check method had a problem of serial autocorrelation, hence censoring tobit regression to infer the final results firmly.

The study found that democracy has a negative and statistically significant relationship with economic development in African countries. Whereas the rule of law negatively relates to economic growth and voice and accountability also describes negative at a statistically significant level of % across all the methods used for the data analysis. In the wake to achieve higher economic development, one variable critically showed promising thus human development index. Human development index encompasses a composite measure of life expectancy at birth, per capita income indicators, and level of education in every country. Emphatically, higher investment in this quarter will highly yield good returns for the continent of Africa as evidence from the study's results confirms abysmal performance in the democratic trajectory.

Moreover, efforts ensured by governments in Africa in the pursuit of providing public goods and services by formulating and implementing good and sound policies that are beneficial to the populace positively impact their well-being. From the assertion of Lipset (1959), he posits that democracy does not usually work well in poor or developing countries as the poor populace do not care about who rules them but are always busy looking for bread and butter. Moreover, since they are marginalized, their voice does not matter in policy formulation and does not care to hold the incumbent government accountable as Lipsitts emphasized that for democracy to be fully practiced, it has to pass through three major steps thus (1) higher literacy and media growth, (2) rapid industrial development and (3) development in information and technology that can support democratic institutions to perform their duties efficiently and effectively such voting for leaders, judicial functioning, policing, etc. The study recommends further studies in this area by considering the modernization hypothesis proposed by Lipset (1959) by applying the principal component analysis method and other dynamic methods. The researchers believe that a sound democratic economy should propel economic development and ensures higher economic growth with human development capacity, political stability devoid of violence and crime, also a strengthened rule of law, and a voice of accountability.

Acknowledgments: No funding to declare

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