POVERTY REDUCTION, INSTITUTIONS AND THE NIGERIAN ECONOMY

1 Olayide Olayinka Olaoye, Department of Economics, Ajayi Crowther University, Oyo, Nigeria
*Corresponding author E-mail: oo.olaoye@acu.edu.ng
1 ORCID ID: 0000-0001-7212-0317

ARTICLE INFO

Review Scientific Paper
Received: 04.05.2021
Revised: 20.07.2021
Accepted: 10.09.2021

doi 10.7251/ACE2135141O
UDC
331.341.1:[005.591.6:334.012.63

Keywords: *poverty reduction, institutional quality, economic growth, law and order.*

JEL Classification: E02, I3.

ABSTRACT

The prime goal of the United Nations is to reduce poverty to the barest minimum in all economies of the world. Africa seem to be worst hit by poverty. Nigeria, has also experienced the consequences of poverty in the forms of kidnapping for money, extortion and so on. Although Nigeria has recorded growth in the economy over time, such growth has not succeeded in transforming the economy. This study therefore sets out to examine the relationship between poverty reduction and economic growth through the channel of institutional quality. Trickle-down theory formed the basis for the study which covered the period 1990-2019. Correlation analysis, Granger-causality as well as the Autoregressive Distributed Lag model were used. The study found that an inverse but weak relationship exists between poverty reduction and economic growth. Also, a unidirectional flow exists from voice and accountability (an indicator of institutional quality) to poverty reduction. Moreover, the study found a strong but negative influence of the rule of law on poverty reduction. Therefore, enforcement of law and order is crucial to poverty reduction in Nigeria. In addition, government expenditure on health has had positive impact on poverty reduction, while government expenditure on education has had negative impact on poverty reduction. Hence, government investment in providing more health facilities will help to reduce poverty in Nigeria. However, government should reconsider public spending on education in Nigeria. Government intervention in education should be limited to regulation and the provision of those educational facilities that face the free-rider problem.

1. INTRODUCTION

From the outset of the Sustainable Development Goals (SDGs) in 2015, developed and developing countries alike have been making concerted efforts to achieve sustainable national development. Developing countries have directed their resources towards improving national welfare by generating employment and reducing poverty level. Poverty is relative as defined by the standard of the society in which an individual finds himself. Poverty is absolute when an individual lacks enough resources to get the basic necessities for life. Poverty reflects on the state of well-being of the citizens of a country through low per-capita income and high degree of inequality in income distribution (Kahsu & Nagaraja, 2017).

Poverty exists in both developed and developing countries of the world. In developed countries, poverty manifests in the form of homelessness. However, not every homelessness in developed economies is due to poverty. Poverty in developed economies can be relative or absolute. In developing economies, poverty reflects in the failure of the entire economic systems and as such there are experiences of high unemployment, inequality in income distribution, low per-capita income, high mortality rate, poor infrastructure, weak institutions and political instability to mention a few. Thus, poverty can simply be defined as the inability of the economic system to redistribute the resources of a country in a fair and equitable manner.

Poverty reduction has been a major concern of government in all economies. However, the incidence of poverty seems to be higher in developing economies. World development indicators of the World Bank (2020) revealed that in developing regions like East Asia and Pacific, poverty headcount ratio at $1.9 a day fell from an average value of 28% in the 1980s to 16% in the 1990s, 6% in the 2000s and 1% in the last decade. In Latin America and Caribbean, poverty headcount ratio at $1.9 a day fell from an average value of 6% in the 1980s and 1990s to 4% in the 2000s and 2% in the 2010s. In Europe and Central Asia, the ratio of poverty to the population increased slightly from an average value of 1.5% in the 1980s to 1.9% in the 1990s. Thereafter, the ratio fell to 1.4% in the 2000s and to 0.4% in the last decade. In the case of sub-Sahara Africa (SSA), the ratio of poverty to the population rose from 54.7% in 1990 to 58.47% in the 1990s. Subsequently, poverty headcount in SSA fell to 52% in the 2000s and to 40% in the 2010s. Evidently, the ratio of poverty to the population in SSA region where Nigeria belongs is on the high side compared to other regions of the world.

Generally, the incidence of poverty in Africa (Nigeria inclusive) seems to be greater than in any other part of the world. It was noted that in Africa, real dis-

posable income has been declining, human conditions have greatly deteriorated, food security crisis has been on the increase, malnutrition rate has risen, and quality of health and educational facilities has deteriorated (Okosun, Siwar, Hadi & Nor, 2012). The aim of the SDGs is to achieve sustainable development in the social, economic and environmental spheres by 2030. The prime goal is to eradicate poverty in the world [United Nations (UN), 2015]. However, the above statistics point to the fact that majority of people in Africa are still living in abject poverty.

In Nigeria, though poverty headcount ratio fell from 62% in the 1990s to 53% in the 2000s, the ratio has increased to 59% in the last decade. This upswing in the incidence of poverty in Nigeria has given rise to several ills in the country like ritual killings, rape, robbery, extortion, kidnapping for money, gambling, smuggling of goods, to mention a few. Several government programmes on poverty reduction were floated such as Structural Adjustment Programme (SAP) in 1986, Agricultural Development Programme (ADP) in 1999, Poverty Alleviation Programme (PAP) in 2000, National Poverty Eradication Programme (NAPEP) in 2001, National Economic Empowerment and Development Strategy (NEEDS) in 2004, Vision 20:2020 in 2007, Subsidy Reinvestment and Empowerment Programme (SURE-P) in 2012 and Economic Recovery and Growth Plan (ERGP) in 2017. Also, the Nigerian government have been making efforts to reduce the poverty level through minimum wage laws, empowerment programmes for citizens and other macroeconomic policies. However, the impact of these programmes has not been much felt by a large population of Nigerians. Therefore, the research problem is that despite the efforts to reduce poverty in Nigeria and stimulate economic growth through institutions, the desired structural change seems unattainable.

Scholars have posited that sustained growth in the economy is germane in alleviating poverty. The positive experiences of some countries confirm empirical evidence in the literature that sustainable economic growth reduces poverty (Devangi & Lee, 2013, Dollar & Kraay, 2002). However, other authors hold contrary view with regards to the association between poverty level and growth. The trickle-down theory supports the view that economic growth is instrumental and a key in reducing poverty in a country (Dollar & Kraay, 2002, Ravallion & Chen, 2003). On the other hand, the trickle-up theory strongly opposes such view, claiming that the benefits from the growth process accrue only to the middle class and the rich (Todaro & Smith, 2011). The proponents of the trickle-up theory argue that focus only on higher economic growth has promoted inequality in income distribution. This controversy in the literature has not been unresolved yet.

In Nigeria, the growth process has not had a trickle-down effect on the common man. Though the country has been experiencing economic growth (with the exception of the recession in recent times caused by the lockdown due to corona virus disease pandemic), living standards have not improved and poverty index is still very high. Much empirical work has been done to investigate the reasons for this experience in Nigeria. Empirical literature provides evidence that factors responsible for the superficial growth experience in Nigeria include institutional weakness (Kilishi, Mobolaji, Yaru & Yakubu, 2013), corruption (Atanda, Akanni & Philomina, 2013, Fabayo, Posu & Obisanya, 2011), as well as weak macroeconomic policies (Ijaiya, Ijaiya, Bello & Ajayi, 2011). Previous authors examined the link between economic growth and poverty (Agbasi, Edoko & Ezeanolue, 2018, Bakare & Ilemobayo, 2013, Ijaiya et al., 2011, Okoroafor & Chinweoke, 2013). Others investigated the relationship between institutions and economic growth (Devangi & Lee, 2013, Kilishi, Mobolaji, Yaru & Yakubu, 2013). Also, there are a few studies on the relationship between institutions and poverty (Kilishi, Mobolaji, Yaru & Yakubu, 2013, Atanda, Akanni & Philomina, 2013).

Oyeyinka (2017) examined the link between economic growth and poverty through the channel of institutions (using corruption index). The study found that both corruption and economic growth have significant positive influence on poverty level in Nigeria. Therefore, the study concluded that corruption plays a negative role in enhancing poverty level despite the increasing level of economic growth in Nigeria. Therefore, the current study differs in institutional and governance indicators that were included in the model of the study. This provided a robust outlook on the influence of poor institutional quality on growth-poverty nexus in Nigeria. This study is imperative because Nigeria is currently ranked 146 amidst 180 countries of the world. Furthermore, five years into the commencement of the SDG drive, there is need for a follow-up on the country's performance in order to examine the possibility of achievement of the set goals. Therefore this study aims at:

i. ascertaining the relationship between poverty level and economic growth;
ii. establishing the directional link between poverty level and institutional quality;
iii. investigating the interactive effect of institutional quality and economic growth on poverty level.

The study covered a period of thirty years; from 1990 to 2009. The study period covers the period of various fiscal policies to eradicate poverty in Nigeria. The study is structured to include the following sections. Section Two presents the review of the literature on the relationship between the variables of the study.

Section Three deals with the methodology of the study. Section Four presents and discusses the findings of the study. Section Five concludes the study and provides policy recommendations.

2. REVIEW OF LITERATURE

Literature has proven the importance of economic growth in achieving poverty reduction (Cheema, Magbol & Sial, 2012, Bakare & Ilemobayo, 2013). However, some scholars argued that economic growth is a necessary but insufficient condition for poverty reduction (Mulok, Kogid, Asid & Lily, 2012, Skare, Prziklas & Druzeta, 2016). Dahlquist (2013) argued that well-designed policies as well as investment in education is inevitable for poverty reduction. Furthermore, Agbasi, Edoko & Ezeanolue (2018) using ordinary least square method to investigate the relationship between growth and poverty concluded that improvement in social infrastructure and health should be paramount in the drive towards poverty reduction. The study also noted that poverty reduction programmes should be measurable. Ijaiya, Ijaiya, Bello & Ajayi (2011) using difference-in-difference estimator, corroborated the need for infrastructure development in achieving poverty reduction. The study also noted that huge investment in agriculture, good governance as well as stable macroeconomic policies should be pursued.

With regard to the causal link between poverty and economic growth, some scholars found a causal flow from poverty to economic growth (Nindi & Odhiambo, 2015). Others found no association between poverty and economic growth (Okoroafor & Chinweoke, 2013, Odhiambo, 2011). This conflicting view presents a gap in empirical literature which this current study has tried to fill.

In addition, Kilishi, Mobolaji, Yaru & Yakubu (2013) used Arellano and Bond first difference and Blundell-Bond System Generalized Method of Moment (GMM) to study the relationship between institutions and growth in SSA. The study concluded that institutional quality was the key to SSA's economic performance. Another study by Atanda, Akanni & Philomina (2013) on the relationship between institutions and economic growth used the Dynamic panel regression analytical technique. The study found that the gross domestic product per-capita of SSA citizens (Nigeria inclusive) can be explained by corruption through institutional weakness.

Finally, regarding the relationship between institutional quality and poverty reduction, Tebaldi & Mohan (2010) stated that regulatory quality, the rule of law and voice, and accountability are inversely related to poverty. In addition, corruption, ineffective government and political instability are capable of accelerat-

ing poverty incidence through increased income inequality. Furthermore, Sirajo, Umar, Musa & Haruna (2018) noted that corruption, poor management and supervision, political instability, inadequate infrastructure and lack of transparency and accountability have hindered the effectiveness of previous poverty reduction programmes of the Nigerian government.

In the review of literature, divergent views were presented on the relationship between poverty and economic growth. Therefore, there is a need to establish the causal link between poverty and economic growth. Also, an important role of institutions in the problem of poverty has been identified in literature. Hence, this study has included several indicators of institutional quality in the model, distinguishing it from previous studies in this area.

3. METHODOLOGY

The Trickle-down theory is adopted as a basis for this study. The Trickle-down theory states that the living standard of the poor is positively influenced by economic growth. According to the theory, reduction in tax rate in an economy leaves more money in the hands of the rich, who spend their accumulated wealth in purchasing consumer goods. So, wealth flows downward in the economy so that both rich and poor benefit.

The study follows and adapts the growth-poverty model of Dollar & Kraay (2002). The model specifies poverty as being functionally dependent on economic growth and other determinants of poverty.

$$pov = f(gdp, v) \tag{3.1}$$

Where pov represents poverty level for which household final consumption expenditure (% of GDP) is proxy. In addition, gdp stands for gross domestic product, v represents other variables determining poverty level. Government expenditure on education and health has been identified by Gomanee, Morissey & Verschoor (2003) as social spending that directly influences poverty level. Ellis (2012) noted that corruption increases poverty level by reducing the quantity and quality of public services (for example, health and education) that benefit the poor. By incorporating these other determinants of poverty as well as other control variables in the model, we have:

$$pov = f(gdp, gee, geh, soc, inv, inf, inst) \tag{3.2}$$

Where gee and geh represent government expenditure on education and health respectively, while soc represents social and community services. On the other

hand, inv stands for gross domestic investment, proxy by gross capital formation and inf represents inflation, measured by consumer price index. Finally, inst stands for institutional quality, measured by corruption control, voice and accountability, the rule of law, bureaucratic quality and political stability. Thus, the model can be expressed as:

$$pov_t = f(gdp, geh, gee, inv, inf, cor, voa, rol, buq, pol) \quad 3.3$$

The model can further be specified in econometric form with variables in logarithm form, except for the indices of institutional quality and inflation.

$$lpov_t = \alpha_0 + \alpha_1 lgdp + \alpha_2 lgeh + \alpha_3 lgee + \alpha_4 linv + \alpha_5 inf + \alpha_6 cor + \alpha_7 voa + \\ + \alpha_8 rol + \alpha_9 buq + \alpha_{10} pol + \mu \quad 3.4$$

Where α_0 is the intercept, α_1–α_{10} represent the elasticities of the explanatory variables and μ is the stochastic error term. The a priori expectation is that all the explanatory variables will have positive association with poverty reduction except for inflation. This is based on the conclusion of previous authors like Dahlquist (2013), Bakare & Ilemobayo (2013), Agbasi, Edoko & Ezeanolue (2018) and Atanda, Akanni & Philomina (2013).

Data for this study was sourced from World Bank development indicators (2020), International Country Risk Guide (2019) and Central Bank of Nigeria Statistical Bulletin (2020). The technique of estimation included preliminary analysis like the test for unit roots as well as descriptive statistics of the variables. In order to capture the first objective, correlation analysis was used to ascertain the nature and strength of the relationship between poverty level and economic growth. Thereafter, the second objective on the directional link between poverty level and institutional quality was achieved using Granger-Causality test. The third objective aimed at investigating the interactive effect of institutional quality and economic growth on poverty level was achieved by using the Autoregressive distributed lag (ARDL) model.

ARDL model proposed by Pesaran, Shin & Smith (2001) was adopted for this study. ARDL approach is most suitable for estimating the extent of association between variables with a combination of integration of order zero and one. Also, ARDL allows for different optimal lags for each variable, hence reducing the problem of serial correlation in the explanatory variables. In addition, ARDL is capable of capturing both the short-run and long-run properties of the explanatory variables. Finally, the ARDL Bound test is an easier analytical process compared to other multivariate regression techniques.

In order to examine the extent of influence of economic growth on poverty reduction through the transmission channel of institutions, the ARDL model is specified as follows:

$$\Delta lpov_t = \alpha_0 + \sum_{i=1}^{x} \alpha_1 \Delta pov_{t-1} + \sum_{i=1}^{x} \alpha_2 \Delta gdp + \sum_{i=1}^{x} \alpha_3 \Delta \lg eh + \sum_{i=1}^{x} \alpha_4 \Delta \lg ee + \sum_{i=1}^{x} \alpha_5 \Delta linv$$
$$+ \sum_{i=1}^{x} \alpha_6 \Delta \inf + \sum_{i=1}^{x} \alpha_7 \Delta cor + \sum_{i=1}^{x} \alpha_8 \Delta voa + \sum_{i=1}^{x} \alpha_9 \Delta rol + \sum_{i=1}^{x} \alpha_{10} \Delta buq + \sum_{i=1}^{x} \alpha_{11} \Delta pol$$
$$+ \sum_{i=1}^{x} \alpha_{12} \Delta cor * gdp + \sum_{i=1}^{x} \alpha_{13} \Delta voa * gdp + \sum_{i=1}^{x} \alpha_{14} \Delta rol * gdp + \sum_{i=1}^{x} \alpha_{15} \Delta buq * gdp$$
$$+ \sum_{i=1}^{x} \alpha_{16} \Delta pol * gdp + \gamma_1 lpov_{t-1} + \gamma_2 gdp_{t-1} + \gamma_3 \lg eh_{t-1} + \gamma_4 \lg ee_{t-1} + \gamma_5 linv_{t-1}$$
$$+ \gamma_6 \inf_{t-1} + \gamma_7 cor_{t-1} + \gamma_8 voa_{t-1} + \gamma_9 rol_{t-1} + \gamma_{10} buq + \gamma_{11} pol_{t-1} + \mu_t \qquad 3.5$$

Equation 3.5 is the unrestricted version of the ARDL model, where $\alpha_1 - \alpha_{15}$ are the elasticities of the corresponding explanatory variables, Δ is the difference operator, $\gamma_1 - \gamma_{15}$ are the long-run multipliers of the explanatory variables. Finally, post-estimation tests were carried out to determine the validity of the results obtained.

4. RESULTS AND DISCUSSIONS OF FINDINGS

The first step was to carry out preliminary tests on the variables to determine their levels of stationarity. This was done by using Phillips-Peron (1988) test with intercept alone. The result of stationarity test is presented in Table 1.

Table 1. Results of Unit roots test

Variable	PP statistic	Level	First Difference	Order of Integration
buq	2.97	1.89	4.56	I(1)
cor	2.97	1.72	3.20	I(1)
gee	2.97	1.70	5.11	I(1)
geh	2.97	0.76	3.11	I(1)
inf	2.97	31.37	-	I(0)
gcf	2.97	0.25	5.41	I(1)
gdp	2.97	3.60	-	I(0)
pol	2.97	2.32	3.72	I(1)
pov	2.97	1.50	17.10	I(1)
rol	2.97	2.78	4.01	I(1)
soc	2.97	1.30	7.67	I(1)
voa	2.97	1.12	6.21	I(1)

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

The results of the unit roots test show that all variables were integrated of the first order except for inflation and GDP which were stationary at level. Literature has established the fact that most macroeconomic variables are usually non-stationary at level. The implication of non-stationarity at level is that the ordinary least square technique of estimation will yield misleading results about the direction and magnitude of the coefficients. The study proceeded to carry out the descriptive analysis of the variables. The results of the descriptive statistics are presented in Table 2.

Table 2. Descriptive Statistics on Variables

	POV	BUQ	COR	POL	ROL	VOA	GCF	GDP	GEE	GEH	SOC	INF
Mean	61.36	1.19	1.53	7.43	2.22	3.10	29.16	4.55	0.02	0.01	23.70	92.49
Median	60.26	1.00	1.50	7.38	2.00	3.29	28.88	4.82	0.01	0.01	23.67	63.88
Maximum	85.63	2.00	2.00	10.50	3.00	5.63	30.05	15.33	0.02	0.01	26.36	301.77
Minimum	34.57	0.00	1.00	4.75	1.00	0.50	28.33	-2.03	0.01	0.01	20.01	6.67
Std. Dev.	13.37	0.50	0.35	1.26	0.58	1.21	0.64	3.98	0.00	0.00	2.24	82.74

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

Table 2 shows that the mean values of some of the variables are very low, while the mean values of poverty reduction and inflation are quite high. The indicators of institutional quality have very low mean values but they are still higher than the mean values of government expenditure on education (0.02) and health (0.01). Also, the maximum and minimum values of the proxies for institutional quality are higher than those of the maximum and minimum values of government expenditure on education and health. This clearly shows that, on the average, government expenditure on education and health fell below the level of institutional quality for the period under review. However, the maximum and minimum values of other social and community services are higher than those of the indicators of institutional quality. In addition, high maximum (301.77) and very low minimum (6.67) values of inflation show that over the time period, there were great fluctuations in the value of inflation. This is also corroborated by the high value of standard deviation (82.74). The maximum (15.03) and minimum (-2.33) values of GDP shows that there were fluctuations in national output. Notwithstanding, the mean value shows that, on the average, GDP was low (4.55). The study therefore proceeded to investigate the nature and strength of the relationship between poverty reduction and the independent variables of the study as presented in Table 3.

Table 3. Result of Correlation Analysis

	POV	BUQ	COR	INF	GCF	GEE	GEH	POL	ROL	SOC	VOA	GDP
POV	1.00											
BUQ	-0.51	1.00										
COR	-0.31	0.73	1.00									
INF	0.87	-0.36	-0.17	1.00								
GCF	0.78	-0.34	-0.11	0.88	1.00							
GEE	0.78	-0.22	0.03	0.94	0.82	1.00						
GEH	0.40	0.06	0.37	0.59	0.46	0.81	1.00					
POL	0.02	-0.69	-0.44	-0.06	-0.16	-0.12	-0.12	1.00				
ROL	-0.29	0.16	0.31	-0.34	-0.41	-0.16	0.32	0.11	1.00			
SOC	0.82	-0.61	-0.47	0.82	0.88	0.69	0.28	0.09	-0.40	1.00		
VOA	0.77	-0.34	-0.41	0.85	0.76	0.71	0.29	-0.13	-0.33	0.80	1.00	
GDP	-0.06	-0.19	-0.41	-0.17	-0.04	-0.36	-0.63	0.13	-0.61	0.14	-0.05	1.00

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

Table 3 shows that an inverse relationship holds between poverty reduction and GDP as well as some indicators of institutional quality (bureaucratic quality, corruption control and rule of law), while other variables have positive relationship. Therefore, the hypothesis of no correlation between poverty reduction and GDP with other indicators of institutional quality is rejected. The strength of relationship between bureaucratic quality (-0.51) and poverty reduction is moderate, while that of corruption control (-0.31), rule of law (-0.29) and GDP (-0.06) are weak. This result contradicts Okoroafor & Chinweoke (2013), who hold the view that there is no relationship between poverty level and GDP. The implication of this result is that there is no direct relationship between poverty reduction and GDP. Voice and accountability (0.77), social and community services, government expenditure on education (0.78), gross capital formation (0.78) and inflation (0.87) have positive and strong relationship with poverty reduction. This suggests that there is a co-movement between poverty reduction and these variables. Although government expenditure on health (0.40) and political stability (0.02) have positive relationship with poverty reduction, it is weak. The result of the directional relationship between poverty reduction and the independent variables are presented in Table 4.

Table 4. Result of Granger Causality test

Null Hypothesis:	Obs	F-Statistic	Prob.	Remark
BUQ does not Granger Cause POV	28	0.73	0.49	No causality
POV does not Granger Cause BUQ		1.04	0.37	
COR does not Granger Cause POV	28	2.33	0.12	No causality
POV does not Granger Cause COR		0.13	0.88	
POL does not Granger Cause POV	28	1.92	0.17	No causality
POV does not Granger Cause POL		1.26	0.30	
ROL does not Granger Cause POV	28	0.02	0.98	No causality
POV does not Granger Cause ROL		0.76	0.48	
VOA does not Granger Cause POV	28	7.96	0.00**	Unidirectional
POV does not Granger Cause VOA		2.06	0.15	Causality
GEE does not Granger Cause POV	28	5.16	0.01***	Unidirectional
POV does not Granger Cause GEE		1.59	0.23	Causality
GEH does not Granger Cause POV	28	1.24	0.31	No causality
POV does not Granger Cause GEH		1.39	0.27	
SOC does not Granger Cause POV	28	1.96	0.16	No causality
POV does not Granger Cause SOC		0.16	0.85	
GDP does not Granger Cause POV	28	0.57	0.57	No causality
POV does not Granger Cause GDP		0.41	0.67	
GCF does not Granger Cause POV	28	2.73	0.09*	Unidirectional
POV does not Granger Cause GCF		0.29	0.75	Causality
INF does not Granger Cause POV	28	5.08	0.01***	Unidirectional
POV does not Granger Cause INF		1.84	0.18	Causality

Note: *, ** and *** indicate 10%, 5% and 1% level of significance respectively

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

Table 4 shows that voice and accountability, government expenditure on education, and inflation granger-cause poverty reduction at 1% level of significance (lsf). Therefore, the null hypotheses of no causality between poverty reduction and these explanatory variables are rejected. Unidirectional relationship exists flowing from the variables to poverty reduction and not the other way round. Gross capital formation also granger-causes poverty reduction at 10% lsf. Therefore, the hypothesis of no causality between poverty reduction and gross capital formation is rejected. Gross capital formation has unidirectional relationship with poverty reduction. The result further suggests that the flow is from gross capital formation to poverty reduction and cannot be the other way round. Also, the result reveals that there exists no relationship between poverty reduction and economic growth. Hence, we accept the null hypothesis of no causal relationship between poverty reduction and economic growth. This aligns with Odhiambo (2011) and Okoroafor & Chinweoke (2013). The result of Bounds test is presented in Table 5.

Table 5. Results of Bounds Test

Test Statistic	Value	k
F-statistic	13.21	9
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	1.63	2.75
5%	1.86	3.05
2.5%	2.08	3.33
1%	2.37	3.68

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

From Table 5, the ARDL Bounds test provides evidence to the existence of long-run relationship among the variables with the F-statistics greater than k-value. Therefore, the hypothesis of no long-run relationship among the variables is rejected. Also, F-statistics is greater than the lower and upper bounds; even at 1%. The Akaike information criteria graph (Appendix I) shows that the model is well-fitted, with the dependent variable at lag one. The last regressor is captured at the static level, while other regressors have a lag of one. Therefore, the study proceeded to examine the interactive effect of institutional quality and economic growth on poverty level. Table 6 shows the results of the short-run cointegrating equations as well as the long-run form.

Table 6. ARDL Results

Dependent Variable: POV				
Selected Model: ARDL(1, 1, 1, 1, 1, 1, 1, 1, 1, 0)				
Short-run Estimates				
Variable	Coefficient	Std. Error	t-Statistics	Prob.
D(BGD)	2.99	5.84	0.51	0.63
D(CGD)	4.99	4.35	1.15	0.30
D(PGD)	0.51	0.75	0.68	0.53
D(RGD)	-3.36	1.06	-3.18	0.02**
D(VGD)	-1.80	1.83	-0.98	0.37
D(GEE)	-6571.21	3513.53	-1.87	0.12
D(GEH)	61620.65	16589.17	3.71	0.01***
D(SOC)	2.57	2.59	0.99	0.37
D(INF)	0.12	0.15	0.81	0.45
D(BUQ)	-46.61	26.21	-1.78	0.14
D(COR)	1.14	17.06	0.07	0.95
D(POL)	-5.08	5.23	-0.97	0.38
D(ROL)	-40.45	9.70	-4.17	0.01***
D(VOA)	9.46	7.53	1.26	0.26
D(GDP)	-2.06	9.99	-0.21	0.84
CointEq(-1)	-1.68	0.19	-8.69	0.00***
Long-run Estimates				
Variable	Coefficient	Std. Error	t-Statistics	Prob.
BGD	4.79	4.22	1.14	0.30
CGD	-0.36	2.84	-0.13	0.90
PGD	0.00	0.64	0.00	0.99
RGD	-2.44	0.81	-3.01	0.03**
VGD	0.33	1.32	0.25	0.81
GEE	-8027.52	2501.20	-3.21	0.02**
GEH	49451.69	10874.03	4.55	0.01***
SOC	-1.43	1.46	-0.98	0.37
INF	0.07	0.08	0.85	0.43
BUQ	-27.68	15.64	-1.77	0.14
COR	0.67	10.12	0.07	0.95
POL	-3.01	3.24	-0.93	0.39
ROL	-24.03	5.91	-4.07	0.01***
VOA	5.62	4.77	1.18	0.29
GDP	-1.22	5.95	-0.21	0.85

Note: *, ** and *** indicate 10%, 5% and 1% level of significance respectively
Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

The ARDL results show that at least one cointegrating equation exists and the model is significant at 1%. The results of the static form of the model show that in the short-run, the rule of law explains the variation in poverty level at 1% lsf. There exists an inverse relationship between the quality of the rule of law and poverty reduction. A unit deficiency in law and order will lead to about 40 units increase in household final consumption expenditure (proxy for poverty reduction). This implies that the quality of the rule of law impacts negatively the poverty reduction effort in Nigeria. Similarly, in the long-run, rule of law was statistically significant in explaining variations in poverty reduction at 1% lsf. Rule of law had a negative coefficient of approximately 24 units. The implication of this finding is that compromises in the enforcement of law and order will aid poverty reduction drive. In another view, the result may mean that the enforcement of law and order will aggravate poverty level in Nigeria. This contradicts popular view and the position of Tebaldi & Mohan (2010). This finding may be peculiar to Nigeria, where injustice thrives. The poor are usually severely punished by law, while the rich pay their way through to obtain unfair judgement.

In addition, it was found that RGD has a negative coefficient of approximately 3.3 at 5% lsf. The implication of this result is that the interaction between the rule of law and economic growth negatively impacts the poverty reduction. Also, in the long-run, the interaction of the rule of law with economic growth was again found to be inversely related to poverty reduction at 5% lsf. By implication, a unit deficiency in law and order will lead to approximately 2 units improvement in poverty reduction effort. Even though unpopular, this finding may be representative of the Nigerian situation, where the poor suffer unjustly and sometimes have to go against the law in order to earn a livelihood.

The results further show that in the short-run, government expenditure on education was found to be statistically insignificant in explaining variations in poverty level. This implies that the effort of the Nigerian government in funding education may not contribute to the poverty reduction drive. This contradicts Dahlquist (2013), who argued that improvement in the level of education enhances poverty reduction. In the long-run, government expenditure on education was statistically significant in explaining variations in poverty reduction at 5% lsf. A unit increase in government expenditure on education will lead to 8,028 units failure in poverty reduction effort. This finding in a way supports the view that the responsibility of expenditure on education should not be totally that of the government. Government could regulate the operation of stakeholders in the educational sector but should not solely fund education. For example, the feeding of primary school pupils embarked upon by the Federal government of Nigeria has not yielded any remarkable success. However, if the parents of the pupils

were empowered and enjoy good health, physically and mentally, they would be able to provide good food for their children.

Furthermore, in the short-run, government expenditure on health has a positive impact on poverty reduction, which is significant at 1% lsf. A unit increase in government expenditure on health will result in approximately 61,621 units increase in household final consumption expenditure. This finding is in line with that of Agbasi, Edoko & Ezeanolue (2018). Also, in the long-run, government expenditure on health was found to be statistically significant in explaining variations in poverty reduction at 1% lsf. Government expenditure on health has a positive relationship with poverty reduction. The implication of the result is that a unit increase in the expenditure of government on health facilities will bring about approximately 49,451.69 units increase in poverty reduction. Other regressors were found to be insignificant in explaining variations in poverty reduction in Nigeria. However, these variables might have some indirect influence on poverty reduction. For instance, out of the proxies for institutional quality, only the rule of law was statistically significant in explaining variations in poverty reduction. This shows how fundamental the judicial system is to the successful running of the Nigerian state.

Diagnostic tests (Appendix II-V) were carried out to validate the findings of the study. Breusch-Godfrey serial correlation LM test provide evidence to the absence of serial correlation among the variables. The p-value of the F-statistic was insignificant. The insignificance of the p-value of F-statistic in Breusch-Pagan-Godfrey result also shows no evidence of heteroscedasticity among the variables. Furthermore, the insignificant p-value of the F-statistics in the result of Ramsey reset test shows that there is no functional misspecification error. The model is consistent with the data. In addition, the model passed the normality test. With the bell-shaped histogram and the insignificance of Jarque-Bera statistic, it can be concluded that the residual is normally distributed.

5. CONLUSIONS AND RECOMMENTATIONS

The study explored the influence of economic growth on poverty reduction in Nigeria through the channel of institutional quality. Trickle-down theory, which supports the view that poverty reduction can be achieved via economic growth, forms the basis for this study. The techniques of estimation included correlation analysis, granger-causality test and ARDL Bound test. The study found that there exists an indirect relationship between poverty reduction and economic growth. The channel through which poverty impacts economic growth or vice-versa is

yet to be determined. Furthermore, it was found that growth in the Nigerian economy has no directional relationship with poverty reduction. This opposes Oyeyinka (2017) and clearly depicts the situation of superficial growth experience in Nigeria. Also, regarding the directional relationship between institutional quality and poverty, only voice and accountability showed a unidirectional relationship with poverty reduction. Therefore, the study concluded that voice and accountability granger-causes poverty reduction. Holding public officers and politicians accountable in the discharge of their duties, will lead to improvement in poverty reduction efforts in Nigeria.

Finally, an indirect and inverse relationship was found between poverty reduction and economic growth. By implication, as the Nigerian economy grows, there is a loophole that gives way to increase in poverty. This study has identified disregard for the rule of law as the channel through which economic growth impacts poverty in Nigeria. The study found a strong but negative influence of the rule of law on poverty reduction. This finding points to the fact that law and order is often compromised by Nigerian citizens, even the poor, in order to earn a living. This has to be addressed by improving the judicial system. Justice must be fulfilled no matter who is who. The interests of the poor should also be well protected in order to reduce the inequality in income distribution. Government expenditure on health should be improved because it has a positive impact on poverty reduction in Nigeria. Even though education is a public good, government expenditure on education should be strategically directed at providing those facilities that face the free-rider problem so as to avoid the current negative impact that government expenditure on education poses on poverty reduction. These include the building of schools, well equipped libraries and laboratories, as well as the maintenance of the same.

Conflict of interests

The author declares there is no conflict of interest.

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СМАЊЕЊЕ СИРОМАШТВА, ИНСТИТУЦИЈЕ И НИГЕРИЈСКА ПРИВРЕДА

1 Олајиде Олајинка Олаоје, Економски факултет, Аџеји Краутер Универзитет, Ојо, Нигерија

САЖЕТАК

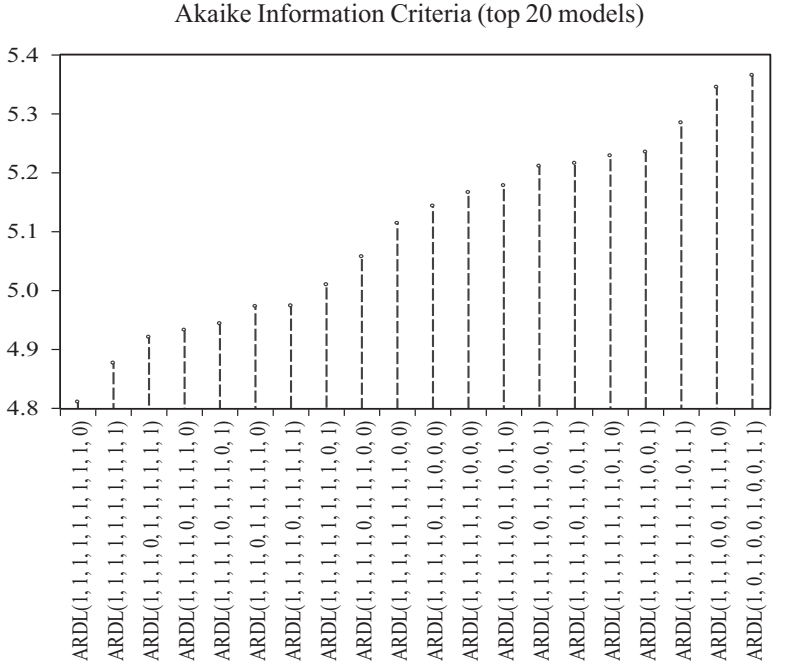
Главни циљ Уједињених нација јесте смањење сиромаштва на најмањи ниво у свим економијама свијета. Чини се да је Африка најгоре погођена сиромаштвом. Нигерија је такође искусила посљедице сиромаштва у виду отмица за новац, изнуда итд. Иако је Нигерија током времена биљежила раст економије, такав раст није успио да трансформише економију. Ова студија стога настоји испитати однос између смањења сиромаштва и економског раста кроз квалитет институција. Теорија прелијевања је била основа студије која је обухватила период 1990-2019. Коришћене су корелациона анализа, Гренџерови узрочно-посљедични односи, као и модел ауторегресивног дистрибуираног заостајања. Студија је открила да постоји обрнута, али слаба веза између смањења сиромаштва и економског раста. Такође, постоји индиректан ток од гласа и одговорности (показатељ институционалног квалитета)

до смањења сиромаштва. Штавише, студија је открила снажан, али негативан утицај владавине права на смањење сиромаштва. Стога је спровођење закона и реда кључно за смањење сиромаштва у Нигерији. Додатно, државни расходи за здравство позитивно су утицали на смањење сиромаштва, док су државни расходи за образовање негативно утицали на смањење сиромаштва. Стога ће владина улагања у пружање више здравствених услуга помоћи у смањењу сиромаштва у Нигерији. Међутим, влада би требало да преиспита јавне расходе за образовање у Нигерији. Владина интервенција у образовању треба бити ограничена на регулацију и пружање оних образовних услуга које су оптерећене са проблемом „бесплатне вожње.

Кључне ријечи: *смањење сиромаштва, институционални квалитет, економски раст, закон и ред.*

APPENDICES

Appendix I: Akaike Information Criteria Graph



Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

Appendix II: Test for Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:			
F-statistics	75.98	Prob. F(2,3)	0.56
Obs*R-squared	28.44	Prob. Chi-Square(2)	0.52

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

Appendix III: Test for Heteroscedasticity

Breusch-Pagan-Godfrey Heteroscedasticity Test

F-statistics	0.88	Prob. F(24,4)	0.64
Obs*R-squared	24.37	Prob. Chi-Square(24)	0.44
Scaled explained SS	0.82	Prob. Chi-Square(24)	1.00

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

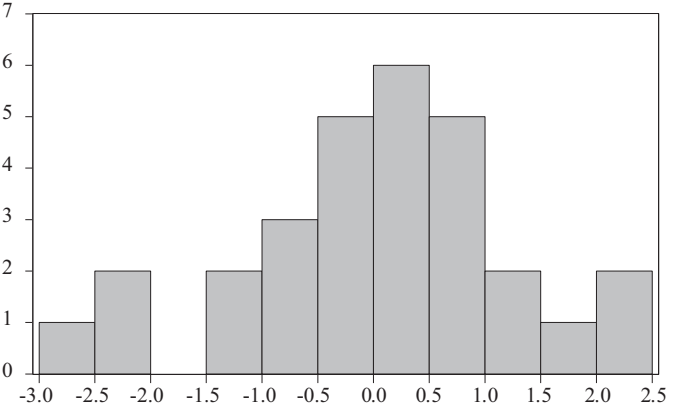
Appendix IV: Test for Specification Error

Ramsey RESET Test

	Value	df	Probability
t-statistics	0.07	4	0.95
F-statistics	0.01	(1, 4)	0.95

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]

Appendix V: Normality Test



Series: Residuals	
Sample 1991 2019	
Observations 29	
Mean	0.000962
Median	0.107541
Maximum	2.192698
Minimum	-2.999003
Std. Dev.	1.192705
Skewness	-0.463563
Kurtosis	3.258435
Jarque-Bera	1.119340
Probability	0.571398

Source: Computed by author (2021) [underlying data from CBN statistical bulletin (2020), International Country Risk Guide (2019) and WDI (2020)]