

ECONOMIC GROWTH AND POVERTY REDUCTION IN NIGERIA: THE ROLE OF INSTITUTIONS

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Abstract

It is worthy of note that the link between economic growth and poverty can be altered in the presence of institutions. The role quality institutions play in economic growth and poverty cannot be overemphasized as it has continued to receive attention from academia and policymakers. Institutions can serve as substitutes or complements in affecting poverty when interacted with economic growth. This study examined the role of institutions in the nexus between economic growth and poverty reduction in Nigeria over the period 1984-2018, using the Autoregressive Distributed Lag cointegration technique. Two institutional quality variables were employed, namely; corruption control and political stability. Poverty was measured using per household consumption, while economic growth was proxied by per capita income. The study found that economic growth and institutions had positive effects on per household consumption in both the short and long run. This implied that as institutions and economic growth increased, per household consumption also increased, while poverty reduced. Furthermore, in the short run, the interactive effect of institutions and economic growth on per household consumption was negative, suggesting that the interaction of institutions and economic growth had a positive effect on poverty. This showed that institutions and economic growth played substitutive roles in poverty reduction in the short run. The interactive effect of institutions and economic growth in the long run was however positive on per household consumption, causing an increase in household consumption and a decrease in household poverty. This showed that institutions and economic growth played complementary roles in reducing poverty in Nigeria in the long run. The study concluded that strong institutions and sound economic growth are important in combating poverty.

Keywords: Economic Growth, Poverty Reduction, Institutions, Corruption Control, Political Stability, Nigeria

JEL Classification: D31, I32, O40, C22

Introduction

In 2015, the United Nations (UN) inaugurated a new developmental agenda called the Sustainable Development Goals (SDGs). This agenda was unanimously agreed upon by 193 countries, and consists of 17 goals and 169 targets, with poverty eradication at the top of the framework while other goals evolve around it. According to the World Bank (2011), poverty is multifaceted. It could thus be defined in many ways such as low levels of income, education and health, vulnerability to health challenge, income loss, natural disaster, crime and violence, and voicelessness and powerlessness of citizens. Poverty is usually expressed in relation to income, and measured in terms of per capita Gross Domestic Product (GDP). Extreme poverty is often referred to as income less than \$1 per person per day in terms of purchasing power parity (PPP). Economic growth is however described as a veritable tool for poverty reduction, although this

role has been questioned. In Nigeria, about 90 million people, roughly representing half of the population in 2018, were found to be living below the international poverty line of \$2 per day as set by the World Bank (World Data Lab's Poverty Clock, 2018). Even though Nigeria is one of the World's highest economies with average growth rate of 7.4% (World Bank, 2018), this has not translated into poverty reduction in the country. This irony of growth in the face of poverty has led researchers and academicians to examine other factors including finance and institutions that could mediate the role of economic growth in poverty reduction (Compton & Giedeman, 2011; Cepparulo *et al.*, 2016).

Numerous scholars have empirically established the relationship between economic growth and poverty (Fields, 2000; Kanayo, 2014; Nuruddeen & Ibrahim, 2014; Fosu, 2017). However, the slope of the relationship remains inconclusive as a positive relationship has been reported by some (Aigbokhan, 2008; Ijaiya *et al.*, 2011; Raymond, 2014; Ebunoluwa & Yusuf, 2018) and a negative relationship by others (Bakare, 2012; Chisom & Adinde, 2017; Breunig & Majeed, 2020).

It is worthy of note that the link between economic growth and poverty can be altered in the presence of institutions. The role quality institutions play in economic growth and poverty cannot be overemphasized as it has continued to receive attention from academia and policymakers (North, 1990; Mauro, 1995; Kamati, 2004; Oluwatobi *et al.*, 2015). Institutions can serve as substitutes or complements in affecting poverty when interacted with economic growth (Compton & Giedeman, 2011; Cepparulo *et al.*, 2016). Economic growth and institutions are said to complement each other when poverty is reduced by the operation of a sound institutional framework and strong economic growth, and are said to be substitutes when the effect of economic growth on poverty reduction is reduced as the level of institutions increases. According to North (1990), institutions are man-made constraints that control human interaction. These institutions are classified into two; formal constraints (laws and constitutions), and informal constraints (taboos, customs and traditions). The formal constraints include voice and accountability, political stability and absence of violence, government effectiveness, and regulatory quality, rule of law and corruption control. Out of the above-listed institutional factors, of importance to this study is corruption control and political stability. According to Dauda (2019), one of the reasons economic growth has not translated into poverty reduction in Nigeria is the widespread corruption and political instability which undermine economic progress and widen inequality and poverty gap.

Corruption control is chosen as an institutional variable in this study because Nigeria is categorized among countries with high corruption index. The 2019 Corruption Perceptions Index (CPI) reported by Transparency International ranks Nigeria 144th and 146th among 180 countries surveyed in 2018 and 2019 respectively. Corruption has also been found to play a dual role in relation to economic growth. In what is termed the 'grease the wheels' hypothesis, it is observed that corruption increases economic growth (Huntington, 1968; Lui, 1985; Acemoglu & Verdier, 2000; Méon & Weill, 2010). The 'sand the wheels' hypothesis, on the other hand, implies that corruption only reduces economic performance due to increase in rent-seeking behavior, transaction cost and uncertainty, as well as inefficient investment and misallocation of production factors (Shleifer & Vishny, 1993; Rose-Ackerman, 1997). Corruption may indirectly contribute to poverty by affecting socio-economic, political and administrative conditions (Ildirar & Iscan, 2015). Corruption also determines the quality of government services and the shape of public expenditures which mainly dictates the well-being of the poor.

Apart from corruption which has been shown to be a major factor affecting economic growth and poverty, political stability also plays a pivotal role in reducing poverty and improving economic growth. Similar to corruption, political stability also serves as a double-edged sword (Hussain, 2014). A country with an unstable political environment would experience a reduction in investment, thereby lowering the economic growth rate. This is likely to result in political unrest, thus increasing the level of poverty in the country. Nonetheless, not all forms of political stability can enhance development; it is dependent on the extent to which stability translates into good governance. According to Majeed and Macdonald (2010), military

involvement in politics significantly adds to corruption in the society because it expands the role of military officials in government holding key bureaucratic and administrative positions and controlling scarce resources which reduces economic growth. Institutionalized corruption in the military during coups d'état has also been suggested (Toyin, 2015).

As shown above, extensive research has been carried out on the relationship between economic growth and corruption (Nwankwo, 2014; Ola *et al.*, 2014; Ildirar & Iscan, 2015), economic growth and political institution (Alesina *et al.*, 1996; Hussain, 2014; Nomor & Iorember, 2017), poverty and economic growth (Dauda, 2017; Ebunoluwa & Yusuf, 2018), and poverty and institutions (Chetwynd *et al.*, 2003; Tebaldi & Mohan, 2010; Nwankwo, 2014; Tafa, 2014; Ildirar & Iscan, 2015; Ajisafe, 2016). However, only a few studies have been found in relation to the role of both corruption control and political stability in the nexus between economic growth and poverty in Nigeria. This study therefore fills this gap and adds to the body of knowledge by examining the mediating role of institutions (corruption control and political stability) in the connection between economic growth and poverty in Nigeria from 1986 to 2018. The rest of the paper is sectioned as follows; section 2 provides a review of related literature, section 3 focuses on methodology and data sources and measurement, section 4 reports the empirical results, while section 5 presents the conclusion and policy recommendations.

Review of Related Literature

Some of the existing studies on the relationship between economic growth and poverty include Kakwani *et al.* (2003) where it was discovered that the initial stage of economic growth and income inequality significantly impacted on the reduction of poverty in Australia. The authors thus concluded that although growth was not sufficient in reducing poverty, institutions played an important role. In the same vein, Hasan *et al.* (2007) investigated the role of institutions in the nexus between growth and poverty in developed countries and found that good governance proxied by strong commitment to the rule of law was essential for poverty reduction with a significant effect on economic growth. Fosu (2017) likewise investigated the link between poverty reduction and economic growth using income inequality as the transition mechanism in developing countries. Applying both regional and country-specific data, with USD1.25 and USD2.50 as the baseline for poverty as seen in the World Bank poverty data, the author found that income growth played a major role in reducing and increasing poverty in developing countries. The author therefore concluded that income growth was a major factor responsible for income inequality.

Perera and Lee (2013) similarly investigated the effects of economic growth and institutional quality on poverty and income inequality in nine developing Asian countries—China, Indonesia, Malaysia, Philippines, Thailand, Bangladesh, India, Pakistan and Sri Lanka—over the period 1985-2009, using the system generalized method of moments (GMM) estimation technique. The results from the study showed that economic growth did not have much impact on income inequality, thus implying that economic growth leads to poverty reduction. Furthermore, improvements in government stability and law and order were found to reduce poverty, while improvement in the level of corruption, democratic accountability and bureaucratic quality were found to increase poverty levels. The results also showed that improvement in corruption control, democratic accountability and bureaucratic quality worsened income distribution. In another study, Cepparulo *et al.* (2016) examined the interactive effect of financial development and institutional quality on poverty reduction for 58 countries from 1984 to 2012 using three financial institutions and institutional quality. Applying GMM, the authors found that the interaction of economic growth and institutional framework had a significant and positive effect on poverty alleviation, thus suggesting the substitution effect in finance-institution-poverty nexus.

In Nigeria, Akanbi and Du Toit (2011) advanced a detailed macroeconomic model for the Nigerian economy with the aim of providing a solution to the divergent experience in the growth-poverty nexus. Using annual time series data from 1970 to 2006 and Engle-Granger two-step cointegration as estimation

techniques, the results showed improved productivity to be essential for sustained accelerated growth and poverty reduction. Bakare (2012) employed the OLS and Gini coefficient to investigate the relationship between poverty and economic growth, and found that increase in economic growth did not necessarily lead to a fall in poverty and an unequal distribution of income. Akobeng (2017) also compared the implication of economic growth on poverty and income inequalities using the Generalized Least Square method and discovered that economic growth led to both reduction in income inequality and human poverty levels. Ebunoluwa and Yusuf (2018) assessed the impact of economic growth on poverty from 1980 to 2016 using a cointegration technique. They found economic growth to be significant to poverty reduction. In another study, Muhammad *et al.* (2014) examined the trivariate causality among economic growth, corruption and poverty in Nigeria within the period 1970-2011 using vector error correction model. A long-run relationship was found among the variables, and the findings further revealed that economic growth affected corruption before transmitting to poverty. Ajisafe (2016) examined the role of corruption in poverty reduction in Nigeria using secondary data from 1986 to 2014. Applying principal component analysis to generate an index for poverty and autoregressive distributed lag as estimation technique, the author found that corruption has an adverse effect on poverty, thus reducing the welfare of the citizenry.

Ijaiya *et al.* (2011) likewise investigated the nexus between economic growth and poverty reduction in Nigeria, and found that although the initial level of economic growth was not enough to reduce poverty, sustainability in economic growth was crucial in the long run. Corroborating this, Gangas (2017) also found economic growth to be important in reducing poverty. Lastly, Olofin *et al.* (2015) examined the determinant of poverty in Nigeria between 1990 and 2010 with a focus on the institutional determinants of poverty, using Dynamic Ordinary Least Square and Butterworth filters to de-trend the data. Results from the study revealed that political right, population and political terror had increasing effects on poverty. Civil liberty and democracy, on the other hand, had decreasing effects.

Methodology

The main thrust of this paper is to examine the role of institutions in economic growth-poverty nexus in Nigeria. To achieve this, autoregressive distributed lag (ARDL) estimation technique was employed. The sample period for this study ranged from 1984 to 2018. Adopting the model in the studies by Perera and Lee (2013) and Cepparulo *et al.* (2016), the baseline model was specified thus:

$$POV = F(INST, GDP, Z) \quad 1$$

Where POV is poverty, INST is institutional quality, GDP is gross domestic product and Z represents other control variables that affect poverty. The control variables that are included in this model are primary school enrolment (PSE) and gross capital formation (GCF). In specific term, the model was specified as:

$$POV = \alpha + \beta INST + \phi GDP + \lambda GCF + \delta PSE + \varepsilon \quad 2$$

Where GCF, PSE and ε are gross capital formation, primary school enrolment and error term respectively. In order to capture the interactive role of institutions and economic growth on poverty, an interactive term was included in equation (2).

$$POV = \alpha + \beta INST + \phi GDP + \eta INST * GDP + \lambda GCF + \delta PSE + \varepsilon \quad 3$$

From equation (3), there are two transmissions by which institutions and economic growth can affect poverty. Institutions could affect poverty by impacting on economic growth which in turn impacts on poverty. This is known as the direct connection between institutions and poverty (Mauro, 1995; Kaufmann *et al.*, 2006, 2009). However, it is economic growth that strengthens institutional quality before transmitting to poverty reduction (Khan, 2006). Consequently, a priori expectations of the variables are as follows; β is expected to have a negative effect on poverty if strong institutions are in place, while the opposite is expected for weak institutions. This shows that strong institutions reduce poverty. ϕ , λ and δ are expected

to have positive and significant effects on poverty. As regards the interactive term (η), a negative sign suggests that the effectiveness of a sound institutional framework coupled with economic growth reduces poverty. This means that institutions and economic growth complement each other in reducing poverty. On the other hand, a positive sign signifies that economic growth is larger where institutions are already well developed. Thus, economic growth and institutions can be used independently to reduce poverty, and are referred to as substitutes for each other. However, an insignificant effect of the interactive term (η) implies that economic growth and institutions do not affect poverty (Compton & Giedeman, 2011; Cepparulo *et al.*, 2016).

Thus, to examine both the short-run and long-run relationship of institutions and economic growth on poverty, equation (3) was specified in autoregressive distributed lag format.

$$\begin{aligned}\Delta POV = & \alpha + \sum_{j=1}^k \rho_j \Delta POV_{t-j} + \sum_{j=0}^p \beta_j \Delta INST_{t-j} + \sum_{j=0}^o \phi_j \Delta GDP_{t-j} + \sum_{j=0}^r \eta_j \Delta INST * GDP_{t-j} \\ & + \sum_{j=0}^s \lambda_j \Delta GCF_{t-j} + \sum_{j=0}^t \delta_j \Delta PSE_{t-j} + \pi_1 POV_{t-1} + \pi_2 INST_{t-1} + \pi_3 GDP_{t-1} \\ & + \pi_4 INST * GDP_{t-1} + \pi_5 GCF_{t-1} + \pi_6 PSE_{t-1} + \varepsilon_t\end{aligned}$$

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Where Δ represents change and is the short-run movement, π_i ($i = 1, 2, \dots, 6$) represents the long-run movement, and k, p, o, r, s and t are the maximum lags selected using the Akaike Information Criterion.

As stated above, the study used the ARDL technique which accommodates both $I(0)$ and $I(1)$ variables as long as none of the variables is above $I(1)$. This method requires a cointegration approach based on bounds test, which utilises F-statistic to validate the existence of long-run equilibrium. Since the sample size is relatively small (1984-2018), the study used the critical values as reported by Narayan (2004).

The measurement and description of variables are as follows:

Poverty Index (POV): This measures the household poverty. It concentrates on deprivation in the three essential elements of human life—longevity, knowledge and a decent standard of living. Poverty is often defined as a situation of low consumption or low income, with various measures adopted (Akinbobola & Saibu, 2004; Amaghionyeodiwe, 2009). Per household consumption expenditure obtained from the 2018 edition of the World Development Indicator (WDI) was used as proxy for poverty. This indicator has been used by Cutler (1984), Foster *et al.* (1984), Chambaz and Mauri (1998) and Johannsen (2006).

Gross Domestic Product (GDP): This represents the total value of all final goods and services produced within Nigeria, measured in terms of current year price. The data is published in billions of dollars and also in local currency. GDP is commonly used as an indicator for economic growth and it captures the value of output produced and services rendered in an economy. Per capita income is used as proxy. GDP data was sourced from World Development Indicator (WDI), 2018 edition.

Institutional Quality (INST): In this study, the two variables used to measure institutional quality are control of corruption Index (COR) and political stability index (POL). Corruption control index measures the rate at which a country is ranked on the basis of their perceived level of corruption on a scale of 0 (highly corrupt) to 6 (clean). Political stability measures a predictable political environment which attracts investment both internally and externally. The data on corruption control and political stability were obtained from International Country Risk Guide, 2018 edition.

Gross Capital Formation (GCF): This refers to the capital accumulation during an accounting period for a particular country. It is the addition of capital goods such as equipment and assets. Per gross capital formation which is obtained by dividing the total gross capital by the total population represents the amount of capital available to individual in a country. The data was sourced from World Bank Development Indicator, 2018 Edition.

Primary School Enrolment (PSE): This refers to the number of children enrolled in primary school who belong to the age group that officially corresponds to primary schooling divided by the total population of the same age group. The data was gotten from World Bank Development Indicator, 2018 edition.

Results and Discussion

The results of the descriptive analysis are shown in Table 1. The value of the dependent variable (poverty) ranged from a minimum of 44.60 to a maximum of 66.90 with its mean and standard deviation as 55.35 and 5.74 respectively. The explanatory variables, corruption control, political stability, gross domestic product, gross capital formation and primary school enrolment had maximum values of 2.00, 10.50, 31.88, 19.81 and 111.84 respectively and minimum values of 1.00, 3.75, 30.35, 5.467 and 42.00 respectively. Their mean values were 1.60, 6.87, 31.07, 11.59 and 90.31 respectively, and standard deviations 0.36, 1.61, 0.53, 3.71 and 11.23 respectively. Corruption control index was low (1.6), revealing a high level of corruption in the country based on the International Country Risk Guide (ICRG) ranking. Furthermore, the results revealed relative stability in the political environment in the country. The mean value of primary school enrollment was high (90.31), signifying that a large proportion of pupils of primary school age were in school. The results also showed that all the variables had positive average values (means). The standard deviation showed that primary school enrolment was the most widely dispersed variable from its mean, while corruption was the most stable variable during the study period. Similarly, the results of the descriptive analysis revealed that both corruption control and primary school enrolment were negatively skewed, while poverty, economic growth, political stability and gross capital formation were positively skewed. In addition, Kurtosis, which measures the peakness of the distribution, showed that all the variables are platykurtic since their values were less than 3, except primary school enrolment which was leptokurtic (value greater than 3). The normality of the variables was also tested using the Jarque-Bera statistic and the results confirmed that the variables were normally distributed.

Table 1: Descriptive Analysis of Economic Growth, Poverty and Institutions in Nigeria

	POV	GDP	POL	COR	GCF	PSE
Mean	55.358	31.072	6.877	1.600	11.588	90.307
Median	54.900	30.838	7.000	1.500	11.746	90.103
Maximum	66.900	31.887	10.500	2.000	19.809	111.835
Minimum	44.600	30.355	3.750	1.000	5.467	42.002
Std. Dev.	5.742	0.535	1.613	0.362	3.709	11.232
Skewness	0.135	0.339	0.065	-0.312	0.174	-2.040
Kurtosis	2.457	1.494	2.813	1.969	1.948	11.093
Jarque-Bera	0.536	3.974	0.075	2.119	1.790	1.834
Probability	0.764	0.137	0.962	0.346	0.408	0.234

Note: POV is per household poverty, GDP is per capita income, POL is political stability, COR is corruption control, GCF is gross capital formation and PSE is primary school enrolment.

Source: computed by the researchers (2020)

The results of the correlation matrix in Table 2 showed the nature, degree and direction of correlation among the variables. However, this study found no evidence of high or exact multicollinearity as all correlation coefficients were less than the benchmark (0.8). Specifically, the correlation coefficients ranged from -0.573 to 0.647, indicating an absence of multicollinearity. The results also showed that while poverty

(proxied by per household consumption expenditure) had a positive correlation with political stability and economic growth, it had a negative correlation with corruption, gross capital formation and primary school enrolment.

Table 2: Correlation Matrix among Economic Growth, Poverty and Institutions in Nigeria

	POV	GDP	POL	COR	GCF	PSE
POV	-					
GDP	0.220	-				
POL	0.647	0.281	-			
COR	-0.496	-0.443	-0.573	-		
GCF	-0.272	-0.234	-0.365	0.275	-	
PSE	-0.286	-0.303	-0.136	-0.202	-0.412	-

Source: computed by the researchers (2020)

The results of the Augmented Dickey Fuller (ADF) unit root test are presented in Table 3. All the variables were found to not be stationary at level. However, at first difference, corruption control index, poverty (proxied by per household consumption expenditure), political stability index, per capita income, gross capital formation and primary school enrolment became stationary. It can therefore be concluded that all the variables were stationary at first difference using ADF. Furthermore, in order to account for the structural break in the data, Perron's (1997) single break test was used. The single break test presented in Table 4 showed that the variables were a mixture of I(0) and I(1). Since the order of integration of the variables using both the ordinary unit root test (ADF) and the single break unit root test did not exceed integration of order one (I(1)), then the utilization of ARDL technique was justified. The study thus proceeded to test the long-run relationship among the variables.

Table 3: ADF Unit Root Test

Variables	Level	Critical Value	1 st Difference	Critical Value	Remarks
POV	-2.292	-3.548	-6.380	-3.552	I(1)
COR	-2.127	-3.552	-3.854	-3.552	I(1)
POL	-2.024	-3.562	-4.889	-3.568	I(1)
GDP	-2.110	-3.548	-4.509	-3.552	I(1)
GCF	-1.650	-3.548	-6.923	-3.557	I(1)
PSE	-0.959	-3.548	-3.004	-2.954	I(1)

Notes: (1) Critical values are at 5%. (2) The lags are selected automatically based on the optimal lag length selection of the AIC criteria.

Source: computed by the researchers (2020)

Table 4: Perron (Structural Break) Unit Root Test

Variables	Level	Critical Value	Remarks
POV	-7.083	-5.92	I(0)
COR	-7.476	-5.92	I(0)
POL	-3.574	-5.92	I(1)
GDP	-4.114	-5.92	I(1)
GCF	-3.173	-5.93	I(1)
PSE	-2.601	-5.93	I(1)

Notes: (1) Critical values are at 5%. (2) The lags are selected automatically based on the optimal lag length selection of the AIC criteria.

Source: computed by the researchers (2020)

The bounds test cointegration based on the null hypothesis of no long-run relationship is presented in Table 5. In Table 5, six different models were presented. Model 1 used corruption control index as the institutional quality, while model 2 interacted corruption control index and economic growth. In model 3, political stability index was used as the only institutional quality, while model 4 on the other hand, interacted political stability index with economic growth. In model 5, the two institutional factors (corruption control and political stability) were aggregated as an index, while in model 6, the aggregated institutional quality was interacted with economic growth to see the effect on poverty in Nigeria. The results showed the evidence of long-run equilibrium among the variables used in the study since the F-statistic was higher than the upper bound critical value at 5 percent level of significance. Thus, the null hypothesis of no long-run relationship among the variables was rejected.

Table 5: ARDL Bounds Test (H_0 : No long-run relationship exists)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
F	4.164**	5.122***	6.008***	5.034***	4.012**	5.321***
K	4	5	4	5	4	5
Selected Lag	(1,0,0,0,2)	(1,2,0,0,2,2)	(1,1,2,1,2)	(1,1,0,1,2,0)	(1,0,0,1,2)	(1,0,0,1,0,0)
Critical Values Bounds						
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
1%	3.74	5.06	3.41	4.68	3.74	5.06
5%	2.86	4.01	2.62	3.79	2.86	4.01
10%	2.45	3.52	2.26	3.35	2.45	3.52

Notes: (1) ***, **, * indicate significance at 1%, 5% and 10% respectively. (2) In Model 1, corruption control index is used as the measure of institutional quality. (3) In Model 2, corruption control index is interacted with economic growth. (4) In Model 3, political stability index is used as the measure of institutional quality. (5) In Model 4, political stability index is interacted with economic growth. (6) In Model 5, aggregate institutional factors (corruption control and political stability) are used. (7) In Model 6, institutional quality is interacted with economic growth.

Source: computed by the researchers (2020)

Since the existence of a long-run relationship was established among economic growth, institutions and poverty through the ARDL bounds test, both the short- and long-run estimates from the autoregressive distributed lag framework and also the diagnostic statistics are presented in Table 6. In this study, household consumption expenditure was used as proxy for poverty. Therefore, any variable or factor that increased household consumption was assumed to reduce household poverty. As indicated in Table 6, the short-run corruption control and political stability had positive effects on household consumption in all the models considered. This indicated that a stable political environment would increase household consumption, thus leading to a reduction in poverty. Political stability determines the extent to which a country is profitable and risky for investment. As noted by Soubbotina and Sheram (2000), both domestic and foreign investments can be deterred by the threat of political upheaval and of a new regime that could impose penalizing taxes or expropriate capital assets. Hence, political instability may discourage both domestic and foreign investment, which in turn could prevent rapid economic growth and exacerbate poverty. Increase in corruption control (which means a corruption-free or clean environment) also leads to increase in household consumption, thus reducing household poverty. A country with an effective means of controlling corruption will create the necessary atmosphere for promoting economic growth, minimizing inefficiency in income distribution and consequently reducing poverty. The interaction of institutional quality with economic growth in the short run had a positive effect on household consumption. This shows that institutions and economic growth can serve as substitutes in reducing poverty in the short run. These findings lend credence to the work of Cepparulo *et al.* (2016).

In the long run, corruption control and political stability had positive effects on household consumption, while the interactive effect of institutional quality and economic growth was negative. This revealed that institutional quality and economic growth play a complementary role in reducing poverty in Nigeria. In other words, strong institutions coupled with increased economic growth are needed to fight poverty in the country in the long run. This implies that a corruption-free environment and the maintenance of political stability are important factors of long-term poverty reduction in Nigeria. In addition, the impact of the interactive effect of institutions and economic growth varies both in the short and long run. These findings are in support of Khan (2012) who found that as institutional quality improves, rent-seeking activities decrease and hence, income increases and vice versa. Furthermore, Chong and Calderon (2000), Tebaldi and Mohan (2010), and Perera and Lee (2013) found that institutional quality has a statistically significant effect on poverty reduction. The study by Rabnawaz (2015) also revealed that corruption control is a key determinant of long-run economic growth in Nigeria, and a decrease in corruption will as well increase political stability which will in turn increase economic growth and reduce poverty.

The results in Table 6 indicated that economic growth played a huge role in the reduction of poverty in Nigeria. An increase in economic growth leads to a great reduction in poverty. It was also discovered in this study that primary school enrolment is not enough to combat poverty and that tertiary education should also be encouraged. This finding is in line with those of Awan *et al.* (2011) where it was stated that an increase in the budgetary allocation to education as well as going far beyond primary school enrolment goes a long way in reducing poverty in Nigeria. Eric (2017) stated that emphasis should be placed on accumulating capital in Nigeria as this would accelerate economic growth and reduce poverty.

The coefficient of the Error Correction Term (ECT) in each of the models was negative and significant. This showed that the models returned to their long-run equilibrium. Furthermore, the rate at which the models corrected their short-run disequilibrium ranged from 38.9% to 46.7% annually.

On the diagnostic indicators (lower part of Table 6), the Breusch-Godfrey serial correlation test (LM) was carried out for the models and the probability for each of the model was greater than 0.05. Therefore, we accepted the null hypothesis which states that there is no serial autocorrelation in the model. Also, Breusch-Pagan-Godfrey heteroscedasticity test was carried out for each of the models and the result revealed that the probability for each model was higher than 0.05. The study concluded that there is no heteroscedasticity in the variance of the error term. In addition, the result from Box-Ljung squared (Q^2) tests showed no autocorrelation ($p > 0.05$) up to order 16 for standardized residuals squared in all models, indicating that the models were correctly specified. The Jarque-Bera test and Ramsey Reset tests showed that errors were normally distributed, and the model was well specified. This indicated that inference could be drawn from the models (Dada & Abanikanda, 2019).

Table 6: Effect of Economic Growth and Institutions on Poverty

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Short run						
Δ COR	0.080 (0.691)	3.474 (0.021)**				
Δ POL			0.913 (0.015)**	40.071 (0.041)**		
Δ INS					1.294 (0.007)***	51.552 (0.046)**
Δ GDP	0.975 (0.001)***	-0.036 (0.957)	-0.270 (0.141)	2.811 (0.023)**	0.835 (0.007)***	2.7847 (0.021)**
Δ PSE	0.027 (0.915)	0.056 (0.827)	0.105 (0.658)	0.143 (0.535)	0.054 (0.828)	0.129 (0.592)
Δ GCF	0.034	0.180	0.158	0.062	-0.126	-0.017

	(0.109)	(0.019)**	(0.079)*	(0.677)	(0.492)	(0.906)
Δ INS×GDP						-1.631 (0.050)*
Δ COR×GDP		-0.076 (0.022)**				
Δ POL×GDP				-1.264 (0.046)**		
ECT	-0.393 (0.006)***	-0.465 (0.003)***	-0.467 (0.001)***	-0.387 (0.004)***	-0.379 (0.005)***	-0.389 (0.005)***
Long run						
COR	0.203 (0.699)	0.163 (0.003)***				
POL			0.595 (0.031)**	-0.917 (0.870)		
INS					1.671 (0.021)**	-2.466 (0.004)**
GDP	2.479 (0.000)***	-0.077 (0.958)	2.362 (0.000)***	1.649 (0.587)	2.204 (0.000)**	1.671 (0.576)
PSE	0.069 (0.915)	0.121 (0.825)	3.511 (0.056)*	5.246 (0.023)**	4.946 (0.051)*	4.548 (0.041)**
GCF	-0.856 (0.155)	-0.589 (0.189)	-0.245 (0.601)	0.160 (0.678)	0.298 (0.546)	-0.044 (0.906)
INS*GDP						0.4484 (0.099)*
POL*GDP				0.2939 (0.052)**		
COR*GDP		0.2809 (0.036)**				
C	-50.4155 (0.000)**	28.1323 (0.546)	-64.7175 (0.000)**	-52.6269 (0.586)	-68.9117 (0.000)**	-49.4393 (0.602)
Diagnostic test						
Q-statistic	18.505 (0.295)	12.686 (0.696)	12.625 (0.700)	6.9717 (0.974)	13.335 (0.648)	6.9436 (0.974)
LM Test	0.3551 (0.704)	1.4829 (0.253)	0.3828 (0.687)	0.5363 (0.592)	0.6533 (0.529)	0.4577 (0.638)
Heteroskedasticity test	0.9004 (0.521)	0.4593 (0.916)	1.4019 (0.243)	0.8118 (0.620)	1.6010 (0.174)	1.0038 (0.468)
Ramsey Reset Test	0.0900 (0.929)	0.0844 (0.933)	1.4922 (0.250)	2.2661 (0.128)	2.5589 (0.099)*	2.2522 (0.130)

Notes: (1) ***, **, * indicate significance at 1%, 5% and 10% respectively. (2) In Model 1, corruption control is used as the measure of institutional quality. (3) In Model 2, corruption control is interacted with economic growth. (4) In Model 3, political stability is used as the measure of institutional quality. (5) In Model 4, political stability is interacted with economic growth. (6) In Model 5, aggregate institutional quality (corruption control and political stability) is used. (7) In Model 6, institutional quality is interacted with economic growth.

Source: computed by the researchers (2020)

Conclusion and Recommendations

This study examined the role of institutional quality in the nexus between economic growth and poverty reduction in Nigeria. In order to achieve the said objective, two institutional variables, corruption control and political stability, were used. Poverty was proxied by household consumption per head, while other variables like per capita income, per gross capital formation and primary school enrolment were included in the model. Autoregressive distributed lag (ARDL) with bounds test was used to establish both the short- and long-run effect of institutions and economic growth on poverty from 1984 to 2018.

The findings revealed that increase in corruption control (corruption-free environment) and political stability and aggregate institutional quality had reducing effects on poverty in the short run. Furthermore, the interactive term of institutional quality and economic growth had a negative effect on household consumption, indicating the substitutive effect of institutions and economic growth in reducing poverty in the short run. In the long run, institutions had a positive effect on household consumption, thus leading to a decrease in poverty. The interactive effect of institutions and economic growth in the long run had a negative effect on household consumption. This means that institutions and economic growth complement each other in reducing poverty in the long run. In summary, both economic growth and strong institutions were found to be important instruments in fighting poverty in Nigeria. Increase in economic growth, on the other hand, is needed to reduce poverty in Nigeria both in the short and long run. The results of this study further showed that primary school enrolment is not enough to reduce poverty in Nigeria in the long run, and that accumulation of capital is important in reducing poverty in Nigeria.

Based on these results, we recommend that the quality of institutions should be improved in the country. The political environment should allow for free and fair elections in order to enhance political stability. Furthermore, activities of the anti-graft agencies in Nigeria should be strengthened in order to reduce corruption to its minimal level. In addition, political education should feature and be made compulsory in school curricula at every level, whether primary, secondary or tertiary. Finally, investing in human capital development and creating jobs for women and young people should be expanded. This will increase the level of investment (domestic and foreign) in the country, as well as increase economic growth and reduce poverty in the long run.

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