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The Effectiveness of Poverty Alleviation Policy: Why is the Quality of Institutions the Bane in Nigeria?

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The Effectiveness of Poverty Alleviation Policy: Why is the Quality of Institutions the Bane in Nigeria?

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Abstract

The article examines the nexus between the quality of institutions and the poverty in Nigeria over the period 1984–2017, using Dynamic Ordinary Least Squares, Canonical Cointegrating Regression and Vector Error Correction Mechanism. The analysis based on three institutional measures (bureaucratic quality, democratic accountability and rule of law) reveals how poverty rate could be escalated by entrenched poor governance. The evidence shows that democratic accountability and rule of law are significant for poverty reduction. This reinforces the assertion that accountability and transparency coupled with strict adherence to rule of law in the public sector are the principal components of poverty alleviation. Also, findings reveal that poverty and weak institutions are interconnected and mutually reinforcing in the country. Overall, the findings posit that poverty is widespread in Nigeria due to capacity constraints of public institutions or underlying governance practices. By implication, the article suggests that policymakers should focus on measures that have the greatest leverage for enhancing effective governance oriented towards poverty reduction and development. In addition, tackling socio-economic inequalities, curbing political unrest and building strong institutions are central to ensuring a socially sustainable basis for holistic welfare improvements.

Keywords: Governance, public institutions, poverty alleviation, cointegration analysis, Nigeria

Introduction

In recent years, good governance has been widely acknowledged as the key determinant of economic development. The effective functioning of public institutions is critical to achieving improved growth (North, 1990), and the quality of institutions is paramount in enhancing economic growth (Abed & Gupta, 2002; Nondo et al., 2016). Meaningful development, in short, can seldom come about in any country in which there is no modicum of confidence in public justice systems (Smith, 1776). Since a principal component of a good public system is the capacity to deliver sustainable services, progressing onthe level of the institutional potency will inevitably engender substantial improvements across areas (regions and countries). Hence, effective government is a prerequisite condition for growth enhancement and poverty reduction[1] (Kaufmann et al., 2003). A viable institutional framework could amplify the pro-poor effect of economic development.

In low-income countries, the institutional role in advancing individuals' welfare is paramount. This recognition necessitates the inclusion of a governance-focused Sustainable Development Goal (SDG 16) in Agenda 2030 in contrast to scant attention given to governance role in progress outcomes by the Millennium Development Goals (MDGs; UN System Task Team on the Post-2015 UN Development Agenda, 2012). Compared to other developing regions during the MDGs period, the lopsided nature of poverty alleviation in Africa might imply that robust institutions could help bridge gross domestic product (GDP) growth–poverty reduction gap. In most African countries, there have been cases of sustained growth with no corresponding improvement in social welfare. For instance, the report has shown that Nigerian economy is one of the 10 fastest-growing economies globally, with a growth rate averaging about 6%–7% in the last 10 years. After the rebasing of the economy in 2013, GDP values rose to US$509 billion by the year-end, which made Nigeria the largest economy in Africa and the 26th in the world (Enweremadu, 2013). Yet poverty remains endemic in the country. As Nigeria's National Bureau of Statistics report (NBS, 2005) bears out, the percentage of the Nigerian population classified as 'extremely poor' between 1980 and 2004 were 28.1 (in 1980), 46.3 (1985), 42.76(1992), 65.6 (1996) and 54.4 (in 2004). Despite numerous poverty alleviation programmes introduced by successive governments[Universal Basic Education (UBE), National Poverty Eradication Programme (NAPEP) and National Economic Empowerment and Development Strategy (NEEDS)], since 1980, there has been a significant increase in poverty rates in Nigeria. Recent statistical data (Table 1) on most social

[1]According to World Bank (1990), 'poor condition (poverty) is the failure of certain persons to attain a minimum standard of living', while Aluko (2003) viewed poverty as 'absence of basic necessities of life'.

development indicators are somewhat appalling. With 86.9 million of the population living in extreme poverty, which represents almost50% of its estimated total population, the case of Nigeria has reached an alarming level, and the country is seen as 'the poverty capital of the world' (Brookings Institution, 2018).Consequently, this question has continued to agitate minds: why has the poverty rate remained unabated despite the numerous poverty alleviation policies introduced by the government?

Table 1
Social Development Indicators of Nigeria

Indicators	2010	2011	2012	2013	2014	2015	2016	2017
Gini coefficient (Inequality)	43.9	44.5	45.1	45.7	46.3	46.9	47.5	48.1
Poverty Headcount	61.25	58.78	57.11	50.07	54.36	45.44	51.52	50.4
Unemployment Rate	21.1	15.8	16.2	16.7	17.1	17.6	18	18.5
Life expectancy rate at birth	52.21	52.54	52.71	53	53.32	53.6	53.82	54.1

Sources: World Bank (2018); National Bureau of Statistics (NBS, 2018).

The deterioration of institutional quality, in combination with the complex economic mechanisms that occur, could have made Nigeria less able than ever to espouse measures that effectively address the incidence of poverty. The concern for the potency of effective governance to catalyse poverty reduction in any economy is not new. Holt (1990), for instance, advocated that, for growth and sustainable poverty alleviation, institutional development was critical. However, regarding Nigeria, only a few studies have analysed how the quality of governance determines the progress of different sections in a state, and it ssocial development implication. An ActionAid (2015) report identified corruption as a major factor for poor social welfare in Nigeria. Ajisafe (2016) corroborated this assertion with the use of autoregressive distributed lag (ARDL) approach to cointegration and argued that there was strong linkage between corruption and spiralling poverty incidence in the country. Yusuf and Malarvizhi (2013) too had used the ARDL approach. While these findings are central to the building of poverty-reduction-oriented institutional measures, these studies mainly focused on a single measure of institutions (corruption) in exploring the correlation between governance quality and poverty. Since there are several measures of institutional quality, previous studies might not give a critical reflection of the importance of other institutional indicators. Thus, as the relationship between institutional quality and poverty alleviation has remained largely

unexplored regarding Nigeria, a question among researchers is: are governance indicators (although interconnected) the cause of entrenched poverty incidence in Nigeria?

Our study is relevant also for its methodology. The few previous studies generally approached the subject with the use of ARDL; other cointegration techniques, such as the dynamic ordinary least squares (DOLS) technique of Stock and Watson (1993) and the canonical cointegrating regression (CCR) estimator) have not been used in the poverty–institutional quality literature, especially in the context of Nigeria. These techniques have been used for two reasons:(a) they offer more efficient outcomes in small samples, and (b) they give a better basis for the comparison of the robustness of the estimates. While DOL can correct for simultaneity bias among regressors, CCR eliminates the second-order bias of the OLS estimator.

Hence, these methods and the inclusion of other institutional indicators in deepening the analysis will help provide a comprehensive account and shape an effective recommendation to the challenges and threats posed by the level of governance and poverty in Nigeria. This study makes use of three governance measures (democratic accountability, rule of law and bureaucratic quality). The key focus of the study is to analyse the long-run relationship between the quality of institutions and poverty alleviation in Nigeria, while their direction of movement will also be examined.

The rest of the paper is structured as follows. The review of literature is given in the next section, and it is followed by a section on data and methodology and trend analysis. After the empirical results and discussion section, the final section offers concluding remarks.

Literature Review

The Poverty Impact of Institutions: Theoretical Explanations

Focusing on the institutional literature, Campbell (2004) and Pierson (2004) viewed institutions as historical resolutions and stable arrangements that regulated and shaped market actors' behaviour (workers, firms and other key actors), and thus induce inequalities in modern states. The range of legitimate actions is defined by institutions, which include formal and informal policies, laws and rules. Inspired by these explanations, scholars have shown the salient linkages between institutions and poverty. Economists have postulated a 'feedback' hypothesis, which stresses that increasing inequality undermines the effectiveness of public institutions, and that some of the reported interconnections between institutions and reduced poverty could have been the product of the reverse causality (Anderson & Beramendi, 2012; Schaefer, 2012; Solt, 2008). However, differences in poverty and inequality across regions or places are explained by

the role of established and stable macro-level contexts (Jepperson, 1991). Hence, institutionalists, like power resources scholars, contend that the quality of institutional environment determines the level of poverty, as the potential of inequalities are reproduced and structured by institutions (Thelen, 2012). Institutions continually influence poverty and inequality without potent guide and maintenance, especially in developing countries.

In a classic essay on 'institutional effects', Jepperson (1991) explained that 'institutions are those socially developed patterns that, when critically elucidated and reproduced, their survival and effectiveness are embedded in self-activating social processes' (p. 145). The residue of the power of collective actors and the 'congealed power' define the quality of institutions in nation-states (Western, 1997). Previously established rules, practices and policies often only slowly evolve over time and do not disappear abruptly. Moreover, modern poverty is a reflection of the past political settlements and the contemporary power of present political actors. Based on these, institutional effects on inequality and poverty often anchor by 'path dependency' (Pierson, 2004). This is the view that previous institutional rules, laws and policies put countries on the path whereby only some succeeding choices and actions are viewed tenable and efficient. This means that the path a state took previously determines its current politics and institutions. The doctrine of institutionalism reflects that political actors (government) can and do shape poverty through previously established rules and law (Huber & Stephens, 2001; Jensen, 2010). The cultural interpretation of inequalities in society, available choices to actors and even the eventual political behaviour of actors are constrained by long-established rules and regulations. Given that the expectations guiding the use of resources available to political actors are shaped by institutions, poverty is ultimately determined by the long and complicated causal chains of public institutions (Pierson, 2004).

Based on this theoretical proof of poverty–governance nexus, we hypothesised that weak institutions could accentuate poverty level in Nigeria. Thus, following the doctrine of institutionalism, it is commonly viewed that Nigerians' standard of living may be deteriorating based on the political and institutional features prevailing in the country. Hence, with the adoption of dynamic models, testing for this formed the main thrust of the study.

The Poverty Impact of Institutions: Empirical Evidence

Firms and households are often integrated with the institutional arrangement, and under the dictates of prevalent economic and socio-political structures, they are interdependent. In recognition of this, considerable attention has been given to the effect of institutions on growth rates and incomes (Aschauer, 2000; Milbourne et al., 2003; Olson & Kahkonen, 2000;

Picciotto, 1995), while only few studies have critically analysed the nexus between public institutions and poverty alleviation. Grootaert and Narayan (2001), focusing mainly on social capital, examined the connection between local institutions, household welfare and poverty in Bolivia. Their findings indicated significant returns to household investment mostly for the poor. Similarly, Donnelly-Roark et al. (2001) also supported the significant role of local institutions in reducing poverty. On the other hand, certain studies estimate the effect of public finance, including public investment finance, on poverty. Gomanee et al. (2003) and Mosley et al. (2004), using cross-country data, assessed the effects of public expenditures in various sectors on the US$1-a-day poverty headcount, while the level of GDP per capita was held constant. The results revealed that higher public expenditure on agriculture, education, and housing and amenities (sanitation, water and social security) altogether have a significant adverse effect on poverty. Focusing on some Chinese provinces, Fan et al. (2002) analysed the effect of public expenditures on rural poverty, differentiating between expenditures on rural education, focused poverty alleviation, irrigation, telecommunications, agricultural R&D, power generation and remote roads. They argued that spending on rural education had the most substantial effect on poverty. Other studies on China, India, Uganda and Thailand, include Fan, Jitsuchon, and Methakunnavut (2004) and Fan, Zhang, and Zhang (2004).In another related study, based on the analysis of the determining indicators of dissimilarities in the level of reduction in the poverty headcount across Indian states over the period 1960–1994, government development financing was found to hugely influence poverty reduction (Datt & Ravallion, 2002).

Hasan et al. (2003), using price stability, trade freedom with foreigners, government size, and indicators of political process and civil liberties as economic freedom indicators, stressed that economic freedom was closely associated with poverty reduction, but that a measure of political freedom was not. On the impact of public capital on inequality and poverty, as measured by the Gini coefficient, Calderon and Serven (2004) examined the effect of the indices of infrastructure quantity and quality on inequality. Both indices seemed to have a significant adverse effect on the level of inequality, although there has been no similar study in this area. However, using micro-econometric evidence, Deininger and Okidi (2003) assessed the effect of infrastructure on poverty. Their findings showed that households in Uganda without connection to an electricity network in 1992 were exposed to lower rates of income growth from 1992 to 1999, while those that were connected experienced much higher rates.

More recently, Cepparulo et al. (2016) analysed whether institutional quality determined how financial development influences poverty, for some developing countries over the period

1984–2012. Using an interaction term of financial development and governance quality, they found that the poverty-reduction effect of financial development adjusts with increased institutional quality. Further findings show that, with respect to poverty alleviation, the largest returns are often got from the resources allocated to either the banking sector or to institution-building. Some authors have estimated the link between financial development and poverty rate within single countries (Ho & Odhiambo, 2011; Inoue & Hamori; 2012; Uddin et al., 2014). On the other hand, another set of scholars examined whether an effective institutional framework influences the standard of living of the poor (Hasan et al., 2007; Perera & Lee, 2013; Tebaldi & Mohan, 2010). Brady et al. (2013) indicated that state-level unionisation causes a decline in the likelihood of individual levels of poverty. They also asserted that irrespective of how or why, there is an established scenario of a strong association between unionisation and higher income, and poverty and lower inequality. Hence, institutional arrangements matter in economic performance, social welfare and poverty.

Turning to empirical work on Nigeria, Yusuf and Malarvizhi (2013), applying ARDL approach to cointegration, explored whether governance triggered poverty reduction or alternatively poverty reduction affected governance in Nigeria. They found that out of six indicators of governance, three indicators integrated with poverty. However, all the governance indicators employed were found to be negatively related to poverty rate. On the other hand, the Error Correction estimates showed reverse causality. The authors posited that Nigeria needed to give more attention to vital growth-driven measures that stimulate sustained growth, and reduce poverty in the medium and short term. Also, Ajisafe (2016) examined the association between corruption and poverty rate in Nigeria from 1986 to 2014. While using ARDL approach, the authors argued that, by reducing the spending on health, education sector and other social services, corruption had severe effect on people's welfare, hence engendering a rise in the level of poverty in Nigeria.

By and large, studies exclusively on Nigeria have used the same approach (ARDL).Given the little work done and the limited exposition on the role of the institutional framework in poverty alleviation, this paper employs DOLS technique of Stock and Watson (1993) and CCR. DOLS is a simple technique to developing the efficient estimator asymptotically which removes the feedback in the cointegrating system, and no known study has applied this approach with respect to this topic in this context. Furthermore, our study differs from most previous studies on Nigeria as it incorporates and considers the effect of democratic accountability, bureaucratic quality and rule of law on poverty rate (i.e., rather than corruption,

whose effect seems widely investigated by researchers). These governance indicators are selected as they are mutually exclusive, and as different models are adopted for the indicators.

Data and Methodology

Data

The study follows annual time series data between 1984 and 2017. The data availability regarding governance indicators mainly determines the scope of this paper. In light of the study's objective, three institutional measures are used in the model: democratic accountability, bureaucratic quality and rule of law (original scale: 6 points). Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population) represents the poverty indicator. This poverty measure has been widely used in the literature (Kale, 2012; Osemene, 2005). Given the significance of some variables in governance–poverty nexus, GDP per capita, inflation, consumer prices (annual %) and remittances are included as control variables. Table 2 details the measurement (definition) of each variable, and the corresponding data source.

Table 2
The Description of Variables

Variable	Definition/measurement	Source
Democratic accountability	It represents various ways in which citizens, political parties, parliaments and other democratic actors can offer feedback to, reward or sanction officials in charge of preparing and enacting public policy.	International Country Risk Guide (2018 Edition).
Bureaucratic quality	It captures perceptions of the quality of public service provision,the competence of civil servants, the quality of the bureaucracy, the independence of the civil service from political pressures, and the credibility of the government's commitment to rules and policies into a single grouping.	International Country Risk Guide (2018 Edition).
Rule of law	It measures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the odds of crime and violence.	International Country Risk Guide (2018 Edition).
Poverty headcount ratio	It indicates % of the population living on less than $1.90 a day at 2011 international prices.	National Bureau of Statistics (NBS, 2018)and World Development Indicators (2018 Edition).
GDP per capita	It represents gross domestic product divided by midyear population.	World Development Indicators (2018 Edition).

Inflation	It reflects the annual % change in the cost to the average consumer of getting a basket of goods and services that may be changed or fixed at defined intervals, such as annually.	World Development Indicators (2018 Edition).
Remittances	Comprise personal transfers and compensation of employees. Personal transfers include all present transfers between resident and non-resident individuals, while compensation of employees refers to the income of border, seasonal, and other short-term workers who are employed in an economy where they are not resident and of residents employed by non-resident entities.	World Development Indicators (2018 Edition).

Methodology

The main goal of this study was to estimate the relationship between public institutions and poverty reduction in Nigeria. Hence, in line with preceding theoretical stance, the study modelled the level of poverty (*POV)* as a function of governance quality (*GOV)*, GDP per capita (*GDP)*, inflation (*INF)* and Remittances (*REM*) as follows;

$$POV = f(GOV, GDP, INF, REM) \qquad 1$$

Given that the time series attributes of the variables are normally examined before the estimation technique is adopted in order to prevent analysing a spurious regression, Augmented Dickey–Fuller (ADF), Phillips–Perron (PP) unit root tests were conducted on various series to know their integration order. Findings from unit root tests help in determining the appropriate estimation procedure to employ. If all the series are integrated of order zero (I(0)), for instance, ordinary least squares procedure (OLS) may be applied; on the other hand, if the series are non-stationary (i.e. I (1)), OLS regression would be rendered spurious. Thus, the ADF unit root test is estimated in model (2) for each series and, in turn, testing the null hypothesis of a unit root; H_o: β = 0, against the alternative hypothesis; H_1: $\beta < 0$. Basically, the test is anchored on the typical t- statistics for β (Dickey and Fuller, 1979; Fuller, 1976).

$$\Delta Z_t = \beta Z_{t-1} + v_t^i \theta \sum_{p=1}^{p} \Delta Z_{t-p} + \varepsilon_t \qquad 2$$

v_t, exogenous regressors which may include only constant term, a constant and a trend, or none.

ΔZ_{t-p}, inclusion of terms for the correction of higher order correlation.$\varepsilon_t$is the error term.

A non-augmented version of model (2) is estimated by the PP unit root test. In order to account for serial correlation in the null hypothesis, PP unit root test applies a non-parametric

technique. Although H_0 and H_1 are the same as in the ADF unit root test, PP unit root test is founded on its own statistic value and distribution correspondence (Phillips & Perron, 1988).

According to Stock and Watson (1993), when all series are I(1)—like they are in this case—DOLS technique is applied to examine the single cointegrating vector that features in the long-run association among the variables in the poverty-level function for Nigeria. Stock–Watson DOLS procedure is modelled as follows:

$$Z_t = \alpha_0 + \varphi X + \sum_{J=-q}^{P} \varpi \, \Delta X_{t-j} + \varepsilon_t \qquad 3$$

Z_t represents the dependent variable (poverty headcount ratio).$X$is defined as the matrix of the exogenous variables.φ indicates the cointegrating vector. $q$is the lead length, while p represents the lag length.

With the aim of making stochastic error term in DOLS regression independent of all previous developments in stochastic regressors, Lag and lead terms are included. Furthermore, in order to test whether it is a spurious regression, unit root tests are conducted on the residuals of the DOLS model estimates (See Choi et al. (2008) for detailed elucidations).For robustness check, CCR is also estimated. CCR estimator eliminates the second-order bias of the OLS estimator in the general case based on the transformation of the series in the cointegrating regression.

In order to ensure the robustness of the estimates, examining the long-run and short- run effect through Vector Error Correction Mechanism (VECM) is relevant. Hence, VECM can be specified as;

$$\Delta POV_t = \varphi + \sum_{i=1}^{k1} \pi_{1i} \, \Delta POV_{t-i} + \sum_{i=0}^{P} \pi_{2i} \, \Delta GOV_{t-i} + \sum_{i=0}^{P} \pi_{3i} \, \Delta INF_{t-i} + \sum_{i=0}^{P} \pi_{4i} \, \Delta GDP_{t-i} + \sum_{i=0}^{p} \pi_{5i} \, \Delta REM_{t-i} + \omega_i ECM_{t-1} + \varepsilon_{1t} \qquad (4)$$

$$\Delta GOV_t = \vartheta + \sum_{i=1}^{k2} \gamma_{1i}\, \Delta GOV_{t-i} + \sum_{i=0}^{P} \gamma_{2i}\, \Delta POV_{t-i} + \sum_{i=0}^{P} \gamma_{3i}\, \Delta INF_{t-i} + \sum_{i=0}^{P} \gamma_{4i}\, \Delta GDP_{t-i} + \sum_{i=0}^{p} \gamma_{5i}\, \Delta REM_{t-i} + \theta_i ECM_{t-1} + \varepsilon_{1t} \quad (5)$$

Eq. (4) & (5) further capture the assessment of long-run effect and the possible causal direction between poverty level and institutional quality, whileECM accounts for the speed of adjustment to equilibrium, and cointegration association. $\Delta POV_{t-i,}\, \Delta GOV_{t-i,}\, \Delta INF_{t-i,}\, \Delta GDP_{t-i,}$& $\Delta REM_{t-i,}$represent the short-run dynamics. In the models, (ω & θ) of ECMexpected to be negative and significant estimates, which implies that after a shock in the shortrun, the adverse outcome of ECM estimates means that the endogenous variable adjusts back to its equilibrium value.

Descriptive Analysis and the Evaluation of the Impact of Poverty Alleviation Policy on Poverty Rate

Figure 1 depicts the trend of poverty headcount ratio between 1984 and 2017 in Nigeria. The poverty headcount ratio witnessed a continued rise from 1984 to 2000, indicating a high level of poverty in the period. However, from 2001 to 2011, there was a gradual reduction in the level of poverty. Following the return to civilian rule in 1999, emphasis was on how to address the high poverty rate ravaging the country, which necessitated the introduction of several socio-economic programmes aimed at stemming poverty rate. The launching of Universal Basic Education (UBE) scheme in 1999 and the creation of the National Poverty Eradication Programme (NAPEP) in 2001 as an integral part of the National Economic Empowerment and Development Strategy (NEEDS) were attempts made to alleviate poverty. Specifically, the period of slight reduction in poverty level (2001–2012) coincided with the designs and implementations of these intervention policies. Nonetheless, since 2012, the poverty rate has been persistently rising (Figure 1), in spite of these policy measures owing to a combination of factors, such as poor policy formulation and coordination, weak institutional framework, policy inconsistency and absence of effective coordination (Action Aid, 2015).

Figure 2 shows the levels of governance indicators (democratic accountability, bureaucratic quality and rule of law) in each year. It reveals the unstable nature, between 1984 and 1998, of these indicators, which were oscillating between 0 and 3.50. Although institutional measures'

figures were relatively stable from 2006 to 2017, in general, a low level of these governance indicators is a problem that could undermine policy commitments (Holt, 1990).

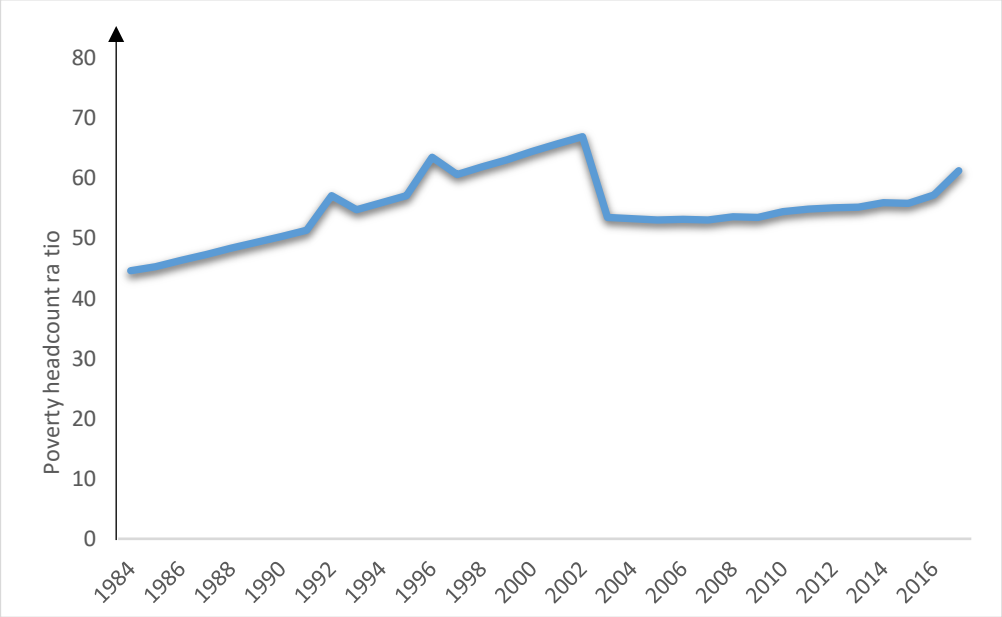

Figure 1
The Trend of Poverty headcount ratio at $1.90 a day (2011 PPP) - (% of population) between 1984 and 2017.
Source: Authors' estimates based on data from World Development Indicator (WDI), World Bank (2018)

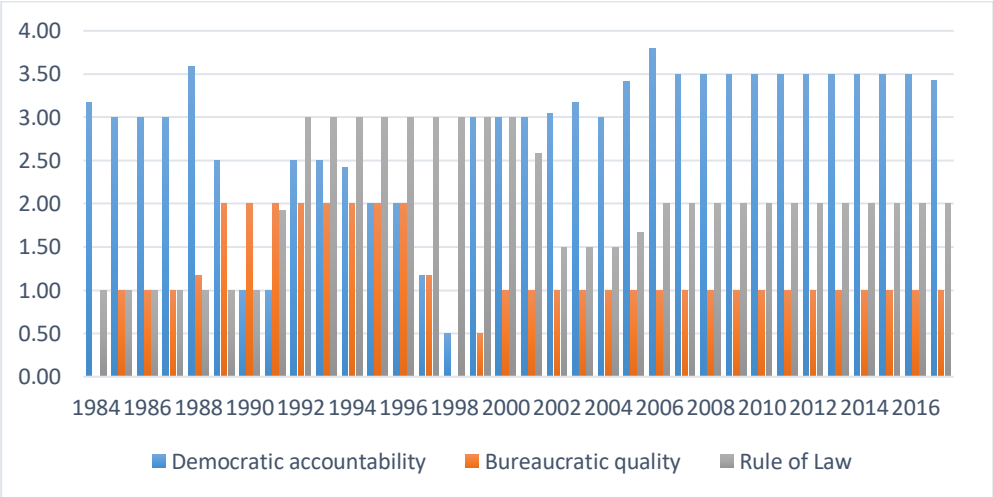

Figure 2
Governance Indicators (Bureaucratic Quality, Democratic Accountability and Rule of Law) between 1984 and 2017
Source: Authors' estimates based on data from International Country Risk Guide (ICRG), 2018

Empirical Results and Discussion

Unit Root Test

Following the need to uncover the order of integration and to avoid spurious regression, the analysis starts with the testing of the stationarity of the estimated variables without structural

break based on ADF and PP unit root tests. The tests reported, in Table 3, indicate that all variables are I (1) (i.e., integrated of order one).Furthermore, given that structural adjustments and unit roots seem to be closely related such that structural breaks can influence unit root (Perron, 1989), unit root test with structural breaks is conducted to ascertain if the variables are indeed the same with the order of integration reported in Table 3. Hence, as shown in Table 4, Zivot and Andrews (1992) which accounts for both the mean and slope in ADF model, indicate that all variables are also I(1).These underpin the appropriateness of the use of Stock–Watson DOLS, CCR and VECM, as they are mostly applicable in the presence of I (1) variables, and it justifies the assertion that the estimated variables seem to be cointegrated when they are stationary at first difference. Regarding the main variables of interest (poverty headcount ratio and governance measures), the structural breaks coincide with key political and economic events in Nigeria. For instance, 1997 happened to be the year General Abdulsalami Abubakar came to power after the demise of General Sani Abacha; in 1999, the country returned to civilian rule; and 2002 witnessed the era of the introduction and implementation of various poverty alleviation programmes (see the previous section).In the study, model (i), (ii) and (iii) represent the respective inclusion of bureaucratic quality, democratic accountability and the rule of law.

Table 3

Unit Root Without Structural Break

Variable	Augmented Dickey–Fuller	Phillips–Perron	Status
POV			I(1)
Level	-1.98	-1.96	
First difference	-5.86***	-5.86***	
GDP			I(1)
Level	0.18	-0.02	
First difference	-4.19(0)***	-4.19***	
INF			I(1)
Level	-2.44	-2.52	
First difference	-3.90**	-6.83***	
REM			I(1)
Level	-2.00	-2.00	
First difference	-6.03***	-6.24**	
BQTY			I(1)
Level	-2.03	-2.43	
First difference	-4.69***	-6.66***	
DACC			I(1)
Level	-2.28	-2.20	
First difference	-5.53***	-9.02***	
LAW			I(1)
Level	-2.49	-1.88	

First difference	-3.48**	-3.43**

** & *** indicate the level of significance at 5% and 1% respectively.
Note: poverty headcount ratio is represented by POV; GDP per capita is presented by GDP; inflation is represented by INF; remittances is represented by REM; bureaucratic quality is represented by BQTY; democratic accountability is represented by DACC; rule of law is represented by LAW.

Table 4
Unit Root With Structural Break

Variable	Level	Break date[+]	First Diff.	Break date	Status
POV	-2.15	1997	7.14***	2002	I(1)
GDP	-1.63	1992	-9.19***	2017	I(1)
INF	-0.83	1993	-5.17***	1995	I(1)
REM	-1.54	1993	-4.63**	2005	I(1)
BQTY	-0.51	1987	-5.24***	1999	I(1)
DACC	-1.48	1991	-9.35***	1999	I(1)
LAW	-0.50	1991	-7.30***	2002	I(1)

*** indicates 1%, **represents 5%. Critical values are: 1% is -4.9491, 5% is -4.4436.

Lag Order Selection Criteria

In any attempt to estimate cointegration model such as DOLS, CCR and VECM, it is good to know the optimal lag length to employ. Also, to preclude the wrong specification, and loss of degrees of freedom, it is important to ascertain the optimal lag length prior to the estimation process. Following the results of VAR Lag Selection Criteria, the selection of the lag length is determined by Schwarz criterion, which seems to be the most efficient and reliable. Based on Table 5, the optimal lag order of 1 is presented by the Schwarz criterion.

Table 5
VAR Lag Selection Criteria

LAG	LOGL	LR	AIC	SC	HQ
0	-158.32	NA	5.45	5.86	5.69
1	-58.75	181.73	2.48	3.21*	2.88*
2	-53.57	7.14	2.65	3.57	3.15
3	-51.73	2.67	2.88	4.21	3.40
4	-45.37	7.97	2.89	4.64	3.63
5	-18.36	37.73	2.52*	4.46	3.19

Note: * indicates lag order 5% significance level.AIC: Akaike Information Criterion; Logl: Log Likelihood; HQ: Hannan–Quinn Information Criterion; LR: Likelihood Ratio; SC: Schwarz Information Criterion.Endogenous series: POV, BQTY, DACC, LAW. Exogenous series: GDP, INF, REM, C.

Cointegration Test

Given the confirmation that the series are all I(1), the next significant step is to test for the existence of cointegration among the variables. Thus, in a multivariate framework, the

Johansen and Juselius (1990) approach to cointegration could be employed. On the number of cointegrating associations among the series, two test statistics aid the decision including the Trace and Maximum Eigen statistics which are reported in Table 6.To reject the null hypothesis for each level of long-run relation from zero (no cointegrating association) to three (maximum cointegrating relationships), the decision rule is that if the associated probability value of the Trace statistic is less than the corresponding level of significance. Following the results in Table 6, the null hypothesis of no cointegration among the series at 5 and 10 significant levels can be rejected. Given that the trace statistic reveals 3 cointegrating associations, it indicates that there exists a long-run association among the series in the model.

Table 6
The Trace Statistic and Max-Eigen Test

Null hypothesis	Alternative hypothesis	Eigen value	Trace statistic	Prob.
R = 0	r = 1	0.2155	30.945	[0.0346]**
r ≤ 1	r = 2	0.1668	15.088	[0.0553]*
r ≤ 2	r = 3	0.0475	3.2279	[0.0623]*

Note: ** represents 5%& * indicates 10% significant level respectively. Endogenous series: POV, BQTY, DACC, LAW. Exogenous series: GDP, INF, REM.

Cointegration Analysis

Table 7 shows the estimated results of the cointegrating regressions (DOLS and CCR). In both regressions, bureaucratic quality is statistically insignificant, whereas democratic accountability is not significant only under CCR. However, rule of law is statistically significant in the two regressions. This implies that bureaucratic quality does not exert significant impact on poverty reduction, while democratic accountability and rule of law have substantial effect on poverty alleviation. The insignificance of bureaucratic quality could be attributed to its extreme low level and widespread bureaucratic failures across public sectors. With respect to democratic accountability and rule of law, overall, the empirical evidence reinforces the conjecture that accountability and transparency, coupled with strict adherence to the rule of law, in public institutions are the central component of poverty alleviation (Huber & Stephens, 2001; Jensen, 2010; Pierson, 2004). GDP per capita, like institutional measures, also adversely influences poverty headcount, and is statistically significant across models. This underscores that sustained growth will accentuate poverty reduction in Nigeria, which matches with the work of Rewilak (2017). Another control variable, remittances, is statistically significant in all models except in model (iii) under DOLS, while inflation is only significant in model (ii) (DOLS) and model (iii) (CCR). These findings reveal that remittances are significant to poverty reduction.

This corroborates the conclusion of Adams (2011) in that inflows of financial resources induce improved social welfare.

Table 7
Cointegrating Regression

Variable	Dynamic Ordinary Least Squares (DOLS)			Cononical Cointegration Regression(CCR)		
	Model (i)	Model (ii)	Model (iii)	Model (i)	Model (ii)	Model (iii)
Constant	0.27***	0.68***	0.81***	0.74***	0.30***	0.36***
	[8.18]	[5.96]	[6.61]	[11.45]	[10.02]	[11.80]
GDP (log)	-0.30**	-0.16	-0.007	-0.23***	-0.16**	-0.06
	[-2.85]	[-1.21]	[-0.10]	[-3.45]	[-2.15]	[-1.38]
INF	0.004	0.004**	0.002	0.001	0.001	0.001*
	[0.34]	[2.76]	[1.51]	[0.46]	[1.03]	[1.85]
REM(log)	0.05***	0.05***	-0.002	0.06***	0.05****	0.02***
	[4.94]	[3.37]	[-0.09]	[6.69]	[6.35]	[3.00]
BQTY	0.06			-0.0006		
	[0.56]			[-0.01]		
DACC		-0.14***			-0.03	
		[-3.17]			[-1.44]	
LAW			-0.14***			-0.07***
			[-3.37]			[-3.60]
Normality test	0.80	0.93	0.48	0.43	0.51	0.32
Serial correlation	0.16	0.12	0.31	0.10	0.25	0.40
Lag	1	1	1	1	1	1
Lead	1	1	1			

Notes: Figures in parentheses are t-values. (***), (**) & (*) indicate significance at 1%, 5% &10% respectively. Model (i) represents the inclusion of Bureaucratic quality; model (ii) for Democratic accountability; model (iii) represents inclusion of rule of law in the estimation.

VECM Analysis

Table 8 contains the estimated results of the models with each presented on a column. The speed of adjustment of the models is negative and significant, indicating the existence of long-run association among the variables, particularly between poverty level and governance quality. It could be asserted that there is a long-run relationship between poverty rate and the quality of institutions in the country. In line with the previous section, only *BQTY* is not significant. Based on the estimates, both *DACC* and *LAW* significantly induce the level of poverty. *GDP* and *REM* also have a significant influence on poverty level, while *INF* is not in model (iii). These results buttress the view that to facilitate poverty reduction, strengthening the quality of governance is crucial. Since institutions seem to be the custodian of norms, values and socio-economic development, lack of transparency and accountability, and disorderliness in the public sector

can accentuate or worsen the deprivation that poor people experience every day. This corroborates the assertion that poverty is the outcome of social and governance processes (World Bank, 2001, Chapter 2). Hence policy reformulation and prioritisation of governance measures could be the essential route to poverty alleviation in Nigeria.

Table 8
VECM Estimates

Variable	Model (i)		Model (iii)		Model (iii)	
	POV	*BQTY*	*POV*	*DACC*	*POV*	*LAW*
ECM (-1)	-0.25** [-4.29]	-1.13** [-3.91]	-0.14*** [-7.02]	-3.01** [3.53]	-0.53*** [4.21]	-1.22** [3.11]
Constant	-18.28	-17.17	5.10	-12.44	13.02	-11.80
POV (-1)	1.00	-0.14** [-5.33]	1.00	-0.22* [-2.04]	1.00	-0.34*** [4.10]
GDP (-1)	-1.03*** [-11.19]	0.02 [1.11]	-0.43*** [-4.17]	1.41 [0.15]	-0.81** [-3.13]	0.53 [1.28]
INF (-1)	1.46** [3.12]	-0.51*** [-6.10]	1.50* [2.71]	0.01* [2.60]	0.01 [1.11]	0.11* [2.81]
REM (-1)	1.01*** [7.91]	2.04 [1.41]	1.03** [3.04]	1.72* [2.19]	0.05** [6.35]	1.02* [2.01]
BQTY (-1)	-0.27 [-1.26]	1.00				
DACC (-1)			-0.81** [-4.11]	1.00		
LAW (-1)					-0.71** [3.51]	1.00

Note: Figures in parentheses are t-values. (***), (**) & (*) indicate significance at 1%, 5% &10%, respectively.

Following Table 9, results reveal that there exists bidirectional causality between poverty level and governance quality employed in the models. This implies that poverty headcount ratio Granger-causes all institutional quality variables employed (bureaucratic quality, democratic accountability and rule of law), while at the same time these governance indicators also Granger-cause poverty. By implication, a high level of poverty could give rise to political unrest, and thus social disorder and institutional failure in the country. On the other hand, poor governance seems to engender unequitable distribution of resources, widen inequality and ease deprivation of the masses. Therefore, poverty and weak institutions seem interconnected and mutually reinforcing in Nigeria's case. This submission could be linked to the work of Griffin (1997).

Table 9
VEC Granger Causality Test/Block Exogeneity Wald Tests

Variable	Model (i)		Model (iii)		Model (iii)	
	POV	*BQTY*	*POV*	*DACC*	*POV*	*LAW*
D(POV)		6.32**		6.91**		8.53**
		(0.04)		(0.03)		(0.01)
D(GDP)	7.84**	0.56	9.86**	2.71	5.92**	1.41
	(0.03)	(0.75)	(0.02)	(0.27)	(0.06)	(0.49)
D(INF)	0.76	5.09*	4.93*	0.13	1.63	0.11
	(0.68)	(0.07)	(0.08)	(0.13)	(0.45)	(0.95)
D(REM)	5.21*	4.98*	7.02**	0.61	6.31**	0.79
	(0.07)	(0.08)	(0.03)	(0.74)	(0.04)	(0.67)
D(BQTY)	6.11**					
	(0.03)					
D(DACC)			9.31**			
			(0.01)			
D(LAW)					5.22*	
					[0.07]	

Figures in bracket are p-values. (**) &(*) indicate significance 5% &10% respectively.

In sum, the findings of this study identify effective governance as central to poverty alleviation in Nigeria. Results buttress the pervasive notion that a low level of institutional quality is widespread in the country. In general, the study emphasises that if social welfare is not improved owing to feeble institutions, poverty level will be exacerbated by the same reason. As a consequence, the findings rest on the assumption that there is strong linkage between rising weak public institutions and spiralling poverty incidence. Hence, advancing the level of institutional effectiveness will enhance substantial improvements in the quality of life, and in turn lead to reduced poverty level.

Concluding Remarks

The paper examines the cointegration relationship between public institutions and poverty alleviation in Nigeria over the period 1984 to 2017. The study's outcomes indicate that governance indicators (democratic accountability, bureaucratic quality and rule of law) and poverty reduction are cointegrated. The estimation of cointegrating vector is empirically analysed with the use of DOLS, CCR and VECM.

The analysis reveals a set of evidence on how poverty rate could be escalated by entrenched poor governance in the country. Given the estimation results, bureaucratic quality does not exert significant influence on poverty alleviation, whereas democratic accountability and rule of law have substantial effect on poverty reduction. Accordingly, findings reinforce the assertion that accountability and transparency, coupled with strict adherence to the rule of law, in the public sector are principal components of poverty alleviation. Estimates also confirm that bidirectional causality exists between poverty level and governance quality. Furthermore, the study underscores that sustained growth and inflows of financial resources would induce improved social welfare, and thus engender a poverty-reducing effect.

Overall, findings indicate that poverty is widespread in Nigeria due to capacity constraints of public institutions or underlying governance practices. The study underpins the notion that the spiralling incidence of poverty will be exacerbated by the low level of the quality of institutions. Hence, improved governance is central to poverty alleviation. By implication, the paper suggests that policymakers should focus on measures that have the greatest leverage for enhancing effective governance oriented towards poverty reduction and development. In addition, tackling socio-economic inequalities, curbing political unrest and building strong institutions are central to ensuring a socially sustainable basis for holistic welfare improvements.

References

Abed, G. T.,& Gupta, S. (2002). The economics of corruption.In G. T Abed & S. Gupta (Eds.),*Governance, corruption, and economic performance*. International Monetary Fund.

ActionAid (2015). *Corruption and poverty in Nigeria: Report.* ActionAid, Nigeria, 30 June.

Adams, R. H., Jr. (2011). Evaluating the economic impact of international remittances on developing countries using household surveys: A literature review. *The Journal of Developing Studies*, *47*(6), 809–828.

Ajisafe, R.A. (2016). Corruption and poverty in Nigeria: Evidence from ARDL bound test and error correction model. *Journal of Emerging Trends in Economics and Management Sciences*, *7*(3), 156–163.

Aluko, M. A. O. (2003). Strategies for poverty reduction in Nigeria. *Journal of Social Sciences*, *7*(4), 255–266.

Anderson, C. J.,&Beramendi, P. (2012). Left parties, poor voters, and electoral participation in advanced industrial societies. *Comparative Political Studies*, *45*(6), 714–746.

Aschauer, D. (2000). Public capital and economic growth: Issues of quantity, finance, and efficiency. *Economic Development and Cultural Change*, *48*(2), 391–406.

Brady, D., Baker, R. S.,&Finnigan, R. (2013). When unionization disappears: State-level unionization and working poverty in the United States. *American Sociological Review*, *78*(5), 872–896.

Brookings Institution. (2018). *Thestart of a new poverty narrative*. Brookings Institution.

Calderon, C.,&Serven, L. (2004). *The effects of infrastructure development on growth and income distribution*(Policy Research Working Paper No. 3400). The World Bank.

Campbell, J. L. (2004). *Institutional change and globalization*. Princeton University Press.

Cepparulo, A., Cuestas, J.C.,&Intartaglia, M. (2016). Financial development, institutions and poverty alleviation: An empirical analysis. *Applied Economics*, *49*(36), 3611–3622. http://doi.org/10.1080/00036846.2016.1265074

Choi, C.Y., Hu, L.,& Ogaki, M. (2008). Robust estimation for structural spurious regressions and a Hausman-type cointegration test. *Journal of Econometrics*, *142*(1), 327–351.

Datt, G.,&Ravallion, M. (2002). Is India's economic growth leaving the poor behind? *Journal of Economic Perspectives*, *16*(3), 89–108.

Deininger, K.,&Okidi, J. (2003). Growth and poverty reduction in Uganda, 1992–2000: Panel data evidence. *Development Policy Review*, *21*(4), 481–509.

Dickey, D. A.,& Fuller, W.A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, *74*(366), 427–431.

Donnelly-Roark, P., Ouedraogo, K.,& Ye, X. (2001). *Can local institutions reduce poverty? Rural decentralization in Burkina Faso*(Policy Research Working Paper No. 2677). The World Bank.

Enweremadu, U. D. (2013). Nigeria as an emerging economy? Making sense of expectations. *South African Journal of International Affairs*, *20*(1), 56–77.

Fan, S., Jitsuchon, S.,&Methakunnavut, N. (2004). *The importance of public investment for reducing rural poverty in middle-income countries: The case of Thailand*(DSGD Discussion Paper No. 7). International Food Policy Research Institute.

Fan, S., Zhang, L.,& Zhang, X. (2002). *Growth, inequality and poverty in rural China: The role of public investments*(Research Report No. 125). International Food Policy Research Institute.

Fan, S., Zhang, X.,& Rao, N. (2004). *Public expenditure, growth, and poverty reduction in rural Uganda*(DSGD Discussion Paper No. 4). International Food Policy Research Institute.

Fuller, W. A. (1976). *Introduction to statistical time series.* John Wiley & Sons.

Gomanee, K., Morrissey, O., Mosley, P., & Verschoor, A. (2003). *Aid, pro-poor government spending and welfare*(CREDIT Research Paper No. 3). Centre for Research in Economic Development and International Trade, University of Nottingham.

Griffin, K. (1997). *Culture, human development and economic growth*(Occasional Paper Series on Culture and Development, No.3).United Nations Research Institute for Social Developmentand UNESCO.

Grootaert, C.,& Narayan, D. (2001). *Local institutions, poverty, and household welfare in Bolivia*(Policy Research Working Paper No. 2644). The World Bank.

Hasan, R., Mitra, D.,&Ulubasoglu, M. (2007). Institutions and policies for growth and poverty reduction: The role of private sector development. *Asian Development Review, 24*(1), 69–116.

Hasan, R., Quibria, M.G.,& Kim, Y.S. (2003). *Poverty and economic freedom: Evidence from cross-country data*(Economics Study Area Working Paper No. 60). East–West Center.

Ho, S. Y.,& Odhiambo, N.M. (2011). Finance and poverty reduction in China: An empirical investigation. *International Business and Economics Research Journal*, *10*(8),103–114.

Holt, S.L. (1990). *The role of institutions in poverty reduction: A focus on the productive sectors*. (Background Paper for the *World Development Report*).The World Bank.

Huber, E., & Stephens, J.D. (2001). *The development and crisis of the welfare state*. University of Chicago Press.

Inoue, T., &Hamori, S. (2012). How has financial deepening affected poverty reduction in India? Empirical analysis using state-level panel data. *Applied Financial Economics*, *22*(5), 395–408.

International Country Risk Guide (2018). ICRG Dataset. ICRG, 2018 https://doi.org/10.7910/DVN/4YHTPU.

Jensen, C. (2010). Issue compensation and right-wing government social spending. *European Journal of Political Research*, *49*(2), 282–299.

Jepperson, R. L. (1991). Institutions, institutional effects and institutionalism. In W. W. Powell & P. J. DiMaggio (Eds.),*Thenew institutionalism in organizational analysis* (pp. 143–163). University of Chicago Press.

Johansen, S.,&Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration with application to the demand for money. *Oxford Bulletin of Economics and Statistics*, *52*(2),169–210.

Kale, Y. (2012, February 13). *The Nigeria poverty profile 2010 report*[Press Briefing by the Statistician General of the Federation/Chief Executive Officer, National Bureau of Statistics, Dr Yemi Kale].NBS Headquarters, Abuja.

Kaufmann, D., Kraay, A.,&Mastruzzi, M. (2004). Governance matters III: Governance indicators for 1996, 1998, 2000, and 2002. *The World Bank Economic Review, 18*(2): 253-287.

Milbourne, R., Otto, G.,& Voss, G. (2003). Public investment and economic growth. *Applied Economics*, *35*(5), 527–540.

Mosley, P., Hudson, J., & Verschoor, A. (2004). Aid, poverty reduction and the new conditionality. *Economic Journal*, *114*(496), 217–244.

National Bureau of Statistics. (2018). *Poverty profile for Nigeria*. Government of Nigeria.www.nigerianstat.gov.ng.

National Bureau of Statistics report (NBS, 2005). Poverty profile for Nigeria. NBS, 2005, www.nigerianstat.gov.ng

Nondo, C., Kahsai, M.S.,& Hailu, Y.G. (2016). Does institutional quality matter in foreign investment? Evidence from Sub-Saharan African countries. *African Journal of Economic and Sustainable Development, 5*(1), 12–30.

North, D.C. (1990). *Institutional change and economic performance*. Cambridge University Press.

Olson, M.,&Kahkonen, S. (2000). Introduction: The broader view.In S. Kahkonen and M. Olson (Eds.),*Anew institutional approach to economic development*(pp. 1–36). Oxford University Press.

Osemene, O.F. (2005). Governmentexpenditure and poverty reduction in Nigeria. *Ilorin Journal of Business and Social Sciences, 10*(1), 119–131.

Perera, L. D., & Lee, G.H. (2013). Have economic growth and institutional quality contributed to poverty and inequality reduction in Asia? *Journal of Asian Economics, 27*, 71–86.

Perron, P. (1989). The great crash, oil price shock, and the unit root hypothesis. *Econometrica, 57*(6), 136 – 401.

Phillips, P. C.B.,& Perron, P. (1988). Testing for unit root in time series regression. *Biometrika, 75*(2), 335–346.

Picciotto, R. (1995). *Putting institutional economics to work: From participation to governance*(World Bank Discussion Paper No. 304). The World Bank.

Pierson, P. (2004). *Politics in time*. Princeton University Press.

Rewilak, J. (2017). The role of financial development in poverty reduction. *Review of Development Finance, 7*(2), 169–176.

Schaefer, A. (2012). Consequences of social inequality for democracy in westernEurope. *ZeitschriftfürVergleichendePolitikwissenschat, 6*, 23–45.

Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations*.

Solt, F. (2008). Economic inequality and democratic political engagement. *American Journal of Political Science, 52*, 48–60.

Stock, J.H.,& Watson, M.W. (1993). A simple estimator of cointegrating vectors in higher order integrated systems. *Econometrica, 61*(4), 783–820.

Tebaldi, E., &Mohan, R. (2010). Institutions and poverty. *The Journal of Development Studies, 46*(6), 1047–1066.

Thelen, K. (2012). Varieties of capitalism: Trajectories of Liberalization and the politics of social solidarity. *Annual Review of Political Science*, 15, 37–59.

Uddin, G. S., Shahbaz, M.,Arouri, M.,&Teulon, F. (2014). Financial Development and poverty reduction nexus: A cointegration and causality analysis in Bangladesh. *Economic Modelling, 36*(C), 405–412.

UN System Task Team on the Post-2015 UN Development Agenda. (2012). *Review of the contributions of the MDG Agenda to foster Development: Lessons for the post- 2015 UN development agenda* [Discussion note].http://www.un.org/millenniumgoals/pdf/mdg_assessment_Aug.pdf

Western, B. (1997). *Between class and market*. Princeton University Press.

World Bank. (1990). *World development report 1990: Poverty*. The World Bank.

World Bank. (2001). *World development report 2000/2001: Attacking poverty*. The World Bank.

World Bank. (2018). *World development indicators*[Data set]. The World Bank. https://databank.worldbank.org/source/world-development-indicators

Yusuf, M.,&Malarvizhi, C. A. (2013). Good-governance and poverty reduction relationship:A case study of Nigeria. *Australian Journal of Basic and Applied Sciences, 7*(2), 804–812.

Zivot, E.,& Andrews, D. W. K. (1992). Further evidence on the great crash, the oil-price shock, and the unit root hypothesis. *Journal of Business and Economic Statistics, 10*(3), 251– 270.