

Poverty Reduction and Inclusive Growth in Nigeria: A Cointegration Approach

Raymond Rahaj Adegboyega

Department of Banking and Finance, Faculty of Administration and Management, Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria
e-mail: dgbyga@gmail.com

Abstract

One of the developmental challenges facing Nigeria today is how to reduce the high level of poverty prevailing among the country's populace. One major way to achieve this is through inclusive growth which its main objective is to maintain conventional economic growth structure without breaking its persistent momentum. From the foregoing, this study contributes to the existing literature by examining the effect of poverty reduction on inclusive growth in Nigerian using data from 1981-2018. Using data sourced from Central bank of Nigeria (CBN) and World Bank data base the study utilized the Johansen Co-integration, Error Correction Model (ECM) and Granger Causality tests to determine the short and long-run relationships among the variables. Both the short and long run relationship confirmed the importance of economic growth as a suitable strategy for poverty reduction. The ECM value of -0.34 which is statistical significance provides an indication of a satisfactory speed of adjustment which translates that about 34 percent of the errors are corrected each period. The study concludes that there is inelastic relationship between most of the variables and poverty. The study therefore recommends among other measures the strict compliance of macroeconomic policy that will induce jobs creation, increase in agricultural productions, etc. that may foster inclusive growth for effective poverty reduction

Keywords: *Economic growth structure; Inclusive growth; Poverty Strategy; Macroeconomic policy; Jobs creation*

JEL Classification: *O10*

Introduction

Basically economic growth has been assumed to be the most powerful instrument for reducing poverty and improving the quality of life in developing countries. Growth continues to bypass a large section of people because majority of them are living in the villages with limited social and economic infrastructure and are excluded from the country's growth.

Despite positive and stable global output in recent years, which were largely due to higher performance in many emerging economies, strong domestic demand in developing countries, as well as the combined effects of the fiscal and monetary interventions adapted in the advanced economies, many of the world individual economies still face serious challenges, especially high poverty levels as a result of exclusive growth.

Berg and Ostry (2011a) and Kraay (2004) observed that for growth to be sustainable and effective in reducing poverty, it needs to be inclusive. Ranieri and Ramos (2013) described inclusive growth as both an outcome and a process which ensures that everyone can participate in the growth process, both in terms of decision-making for organizing the growth progression as well as in participating in the growth itself that assures that everyone shares equitably the benefits of growth. The need to pursue inclusive growth policies becomes imperative because poverty has become a pervasive national and global issue resulting from a state of short or long-term deprivation and insecurity in basic human needs. It has become a great concern because of the daily increase in the number of people affected, despite measures undertaken to reduce or even alleviate it.

The extent and depth of poverty in the developing world is very grave (Pinstrup-Anderson & Pandya-Lorch, 2001 and AFDB, 2014). E), recently this has been attributed to lack of inclusive growth in these countries (Edward & Sumner, 2015). However, the growth elasticity of poverty differs enormously across countries with the shape of the growth incidence curve (Sumner, 2016).

The situation is not different in Nigeria where poverty is impediment to national development. Since 1960 when country gained independence, the major objectives of national economic programmes have been the reduction of poverty, bridging inequality and the achievement of a sustained economic growth that should translate to economic development. Nonetheless, the Nigeria's growth indicators are yet to translate to horizontal and vertical development. Despite the country abundant human and natural resource endowments and increase in the country GDP which has double recently, poverty is widespread in Nigeria. The country is still ranked amongst the poorest nations in the world (Agu 2013). The implication of this situation is that economic growth in Nigeria has not been inclusive.

Despite a multiplicity of poverty alleviating programmes and policies, poverty remain wide spread in contemporary Nigeria (Appleton et al., 2008 and Ijaiya, Marikan & Ramli, 2016). Other developmental programmes such as the MDGs, SDGs, etc. which have been adopted and implemented in over 60 countries of the world, proved abortive in Nigeria. Another feather to these is the Rural Finance Institution Building Programme (RUFIN) which became effective from 20th January, 2010 coupled with a seven-year development initiative that was funded by the International Fund for Agricultural Development (IFAD) and the Federal Government of Nigeria. IFAD was set up in order to enhance the access of the rural populace to the services of Non-Bank Micro Finance Institutions i.e. Cooperative Societies, Unions and Cooperative Finance Agencies (CFAs), Neo-Micro Finance Institutions and Grassroots informal Finance Institutions in order to expand and improve agricultural productivity and Micro-Small Rural Enterprises. All these have not yielded any meaningful results in Nigeria.

In spite of the huge resources from oil it is unfortunately that many of its citizens still live in poverty (Osuntogun, Edordu and Oramah, 1997 and Onuba, 2012). It must, however, be averred that, without the mobilization of long-term savings to support the consolidation of future growth and development, there cannot be any sustainable economic development. This is evident in the Inclusive Growth and Development Report (IGDR, 2017) that Nigeria has significantly lower Inclusive Development Index (IDI) ranking than GDP per capita ranking which is an indication that her growth has not translated into social inclusion.

Accordingly, to achieve inclusive growth, macro-economic stability and sustainable development of the Nigerian economy, it is time as a nation to de-emphasize the habit of consumption and ostentatious living (i.e. consuming what we do not produce) and imbibe the culture of savings and wealth creation, based on increased productivity/output, value addition, economic diversification and self-sustenance. Therefore, this study contributed to existing knowledge by empirically examined the relationship between poverty reduction and inclusive growth in Nigeria.

Literature Review

Theoretical Review

Generally, various schools of thought advocate a number of measures for poverty reduction. For instance, the Mercantilists laid emphasis on foreign trade which according to them is an important vehicle for the promotion of economic growth and poverty reduction. The Classical economists' (Adam Smith, David Ricardo, Thomas Malthus, Karl Marx, etc.) views on poverty reduction brought to fore the social changes which occurred through technological changes resulting from the industrial revolution that took place between 1750-1850. The early development economists of the 1940s and the 1950s advocate the theory of forced-drift industrialization via Big-push, Balanced growth and Labour transfer (Ijaiya 2002).

In the 1970s Chenery, et.al (1974) advocates re-distribution of income. To them, poverty can better be reduced if radical redistribution of income or land is allowed to take place in view of the interlocking power and self-interest of the rich and the bureaucracy in the handling of the nations' resources. The World Bank (1983; 1990; 1991) emphasizes on the need for stable macroeconomic policies and economic growth. To the World Bank, sound fiscal and monetary policies will create a hospitable climate for private investment and thus promote productivity which in the long-run would lead to poverty reduction (Dollar and Kraay 2000; Sandstorm 1994; Edwards 1995). This approach is what is referred to as pro-poor growth approach to poverty reduction.

In line with above the few theories which are fundamentals to analysis of this study are induced development and growth theories.

The induced development theory emphasized that every country which embarks on the course of economic development necessarily, encounters a set of constraints imposed by inelasticity on the supply of strategy inputs. Unless efforts are directed towards the loose reduction of these constraints by producing substitutes for these factors with inelastic supply, the whole process of economic development is bound to be greatly depressed (Hayami and Ruttam, 1971).

In their own view Keynesians, institutionalist, Marxist and structuralist schools assumption is that growth is pro-poor when it is labor absorbing and accompanied by policies and programs that mitigate inequalities and facilitate income and employment generation for the poor, particularly women and other traditionally excluded groups. Pro-poor development strategy is based on two principles: First, the elimination of poverty should be the main priority of government. Second, growth is said to pro-poor if the benefit of growth must go more into the poor people than rich. It means that growth is pro-poor when it reduces both relative as well as absolute poverty. In their growth philosophy, poverty reduction was the main concern of growth and the selected growth process is expected to reduce massive poverty. These schools of thought believed that the direct way of poverty reduction is much effective than the indirect way. Moreover these schools highly skeptical about realizing equity in the distribution of benefits from high growth in economy and they are strongly believed that different kinds of growth will not deliver same benefits to all categories of people. Therefore the pro-poor growth approach needs to be linked with the selection of mode of production, technology in the home country. In nutshell, they argue that each country should depend more on abundant factor of production in the growth process relative to scarce factors. Such a depended growth process would benefit more people if a country uses more labour intensive technology when the county has the labour as an abundant factor which is typical of Nigeria. This growth strategy is so relevant for developing countries because labour seems to be abundant factor of production for these countries. With this approach, one country can easily attain redistribution and maximum social welfare in direct way and need not have to wait for trickledown to clear those developmental problems.

However Kuznets (1955) and Solow (1956) growth and development theories were centered on the expectation that development will be attained during the growth process as a result of 'trickledown effect'. They argued that during the initial stage when a country experiencing growth, inequality would tend to increase but later when the growth staggers momentum inequality would come down. Trickledown effect was used to explain the flow of benefits of growth to all class layers of people including poor. Keynesians in his justification to the growth fundamentalism argued that that the pace of initial economic growth can only be increased by the rich because they have high capacity of saving and justified the initial temporary inequality for the better growth in future (Filho, 2010). Other schools of thoughts like institutionalist, Marxist and structuralist schools based their theoretical contribution on pro-poor growth approach which is labor abundant with accomplish policies and programs that reduce inequalities. Also, it facilitates income and employment generation for the poor, especially women and other traditionally excluded groups. With this approach, a country can easily attain redistribution and maximum social welfare in direct way without through trickledown effect to achieve its developmental goals.

The lack of focus by pro-poor growth approach caused the recently replacement by inclusive growth. Inclusive growth allows for the linkage between pace and pattern of growth on long term sustainability without hurting its momentum and focuses on productive employment rather than merely direct income redistribution as a means of increasing income for excluded groups. It involves unbiased regulatory environment for business and individual and equality of opportunity in terms of access to markets and resources. It is broad based and more concerned about absolute poverty reduction in terms of the attainment of quality and justice in the growth process which is the main focus of this study.

Conceptual Review

Generally, poverty is a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health services, shelter, education and information (World Bank, 2017). In a different but complementary perspective Misturelli and Heffernan (2008) defined income-based poverty as the condition where individuals lack the financial resources to satisfy their basic needs and/or a minimum standard of living. This is the conventional viewpoint of the Bretton Woods Institutions such as the World Bank and IMF, which links well-being primarily with command over commodities, and views the poor as those who do not have enough income or consumption to meet a minimum threshold (Houghton and Khandker, 2009). This criterion is the theoretical basis for international poverty measures such as the 'poverty line', which separates a population based on levels of consumption.

In spite of the presence of abundant human as well as material resources, many Nigerians are still poor. It is apparent that the wealth of any nation is dependent on efficient government, reasons being that it is the government that helps to maintain the social contract that binds members of the country or state together (Ejubekpokpo 2012). So, poverty is an outcome of corrupt practices by the leaders; this is corroborated by Bello & Lamidi (2009) and Djamaluddin (2017) that corruption is a social problem that creates a foundation for the existence of poverty because the resources meant for development in the country are being diverted to private uses. A person is considered poor if his/ her income level falls below some minimum level ('poverty line) necessary to meet basic needs. The income of many citizens in Nigeria is so meager such that it could hardly cater for their basic or philosophical needs as propounded by Abraham Maslow in his Needs hierarchy.

The most commonly used measure of poverty is the so-called head-count index which measures percentage of people living below the poverty line. Using two smaller National Bureau of Statistics (NBS) household surveys conducted in 2010/11 and 2012/13, the World Bank reckoned that the poverty headcount in Nigeria (based on a US\$1.4 per day threshold) fell from 35.2% in 2010/11 to 33.1% in 2012/13. As the World Bank observed, the NBS's higher poverty

figures seem inconsistent with the outcome of the recent rebasing of Nigeria's national accounts, which almost doubled the country's GDP in 2013 (Sakanko and David, 2018). All these measurements reflect that poverty exists in Nigeria which is the indication that the country is facing a set of challenges in achieving more inclusive growth.

In the last decade the rate of poverty reduction has been slowing in Nigeria and this made the success in reducing poverty to be fragile because the national poverty line is set low in comparison to international standards, and many people live not far above the national poverty line. For instance, Ravallion (2015) demonstrated that national poverty lines tended to increase at around a third of the rate of mean consumption indicating rising costs of living needed to attain the same standard of welfare and the rising standards of what societies consider to be poor.

Basically, inclusive growth which is the pace and distribution of economic growth means an all-round growth of the masses or growth with equity, broad based or balanced growth which will benefit the poor and the underprivileged. It incorporates everyone regardless of their economic class, gender, sex, disability and religion. It decreases the rapid growth rate of poverty in a country and increases the involvement of people into the growth process of the country. So, inclusive growth refers to both the pace and distribution of economic growth and for growth to be sustainable and effective in reducing poverty, it needs to be inclusive (Berg and Ostry 2011a, Kraay 2004). Also, the Commission on Growth and Development (2008) notes that inclusiveness which is a concept that encompasses equity, equality of opportunity, and protection in market and employment transitions is an essential ingredient of any successful growth strategy. An inclusive growth strategy encompasses the key elements of an effective poverty reduction strategy and, more importantly, expands the development agenda. In this sense, inclusive growth includes and extends pro-poor growth (Rauniyar and Kanbur, 2010), but Ali and Son(2007) perceived inclusive growth as the growth that is not only creating new economic opportunities, but also ensures equal access to the opportunities created for all segments of society, particularly for the poor (Dollar, Kleineberg & Kraay, 2013 and Ranieri & Ramos, 2013). Accordingly, OECD (2008) defined inclusive growth as economic growth that guarantees equity in opportunities, employment and poverty reduction. In their own view, Ianchovichina and Gable (2012) described inclusive growth as raising the pace of growth and enlarging the size of the economy by providing a level playing field for investment and increasing productive employment opportunities. Inclusive growth as defined by Seshadri and Arya (2013) implies an equitable allocation of resources or providing equitable opportunities to all in accessing resources such that it benefits the society at large. This definition emphasized the idea of equality of opportunities in terms of access to markets and resources, an unbiased regulatory environment for, employment, standard of living etc. It is evidence from various definitions that inclusive growth adopts a long term perspective and is concerned with sustained growth which focuses on productive employment rather than income redistribution. Inclusive growth should ideally ensure the economic and financial progress permeating through cross sections of the society resulting in balanced, democratically sustainable and optimal growth. Inclusive growth in the economy can only be achieved when all the weaker sections of the society, including agriculture and small scale industries, are nurtured and brought on par with other sections of the society in terms of economic development.

Empirical Evidence

Empirically majority of the studies on poverty reduction and economic growth have mixed results, for instance Datt & Ravallion, (1992); Anyanwu & Erhijakpor (2010); and Fosu (2010b) found positive effects of inequality and income on poverty but Brueckner and Lederman (2015)

found that increases in inequality raise GDP per capita in low-income countries but reduce it in middle-income countries. In a similar vein, Dabla-Norris et al. (2015) study showed that a higher net Gini is associated with lower output growth in the medium term, while the studies

like Hughes & Irfan, (2007); and Ulriksen (2012) found that economic development as measured by real GDP per capita reduced poverty. Also, Bahmani-Oskooee & Oyolola (2009); Connors (2012); and Alvi & Senbeta (2012) suggest that aid which promotes growth has a significant poverty-reducing effect even after controlling for average income. In addition, Paraiba, Brazil, & Verner (2004); Tilak (2007); and Awana et al (2011) found that educational achievement positively related to poverty ratio. More so, Braumann (2004); Adeyemi, Ijaiya & Raheem (2009); Anyanwu & Erhijakpor (2010) and Chani et al (2011) found a positive correlation between inflation and poverty. To the best of our knowledge the few studies on poverty reduction and inclusive growth are inconclusive. For example, Anyanwu (2013) found that higher levels of income inequality, primary education alone, mineral rents, inflation, and higher level of population tend to increase poverty and have negative effect on inclusive growth in Africa. Also, Yusuf and Andy Sumner (2017) found that multidimensional poverty which consists education, health and household assets, and employment promotes inclusive growth in Indonesia. In light of these shortcomings, poverty and inclusive growth have not being thoroughly examined so there is need to carry such study in Nigeria.

Methodology

Using the basic growth–poverty model suggested by Ravallion (1997; 2008) and Ravallion & Chen (1997); and the adopted empirical works of Agénor (2004, 2005), Islam (2004), and Anyanwu and Erhijakpor (2010, 2012) the relationship estimated was based on Sachs-Solow growth model which is built around the familiar neoclassical aggregate production function and written as:

$$Y = A_t F(K, L) \quad (1)$$

where Y is real output, K is capital, L is the labour input, and A_t is a measure of exogenously determined “technology.” The aggregate production function is assumed to be “well-behaved,” that is, it satisfies the three “Inada” conditions (Barro, Robert and Sala-i-Martin 2005).

Therefore, the adopted production function model based on Sachs et al. (2004) poverty traps can be rewritten and specified as follows:

$$POVIND = f(EG) \quad (2)$$

Thus, equation (2) can be expanded to include some variables which may promote inclusive growth for poverty reduction.

$$POV = f(EG, UNEMPR, HCE, AGC_GD, RUTP) \quad (3)$$

Using data sourced from Central bank of Nigeria (CBN) and World Bank data base from 1981 to 2017, the estimating techniques adopted for this study are cointegration, error correction model and granger causality test. According to Engle and Granger methodology,

$$X_t = \mu + \theta\left(t - \frac{T}{2}\right) + aX_{t-1} + E_t \quad (4)$$

Where:

X_t is the time series, and under the null hypothesis; $a = 1$ and $\theta = 0$, T represents the number of observations. The Augmented Dickey-Fuller (ADF) test is used to determine the stationarity of the time series by applying OLS to estimate the coefficients of the following relation:

$$\Delta X_t = \mu + \theta_t + X_{t-1} + \sum_{i=1}^n \lambda_i \Delta X_{t-i} + \mu_t \quad (5)$$

n is chosen to eliminate the autocorrelation. If a unit root exists, then $y = a - 1$ would not be statistically different from zero. The test can be conducted by comparing the t-value on the

coefficient of X_{t-1} with critical values. The Granger representation indicates that if X_t and λ_t are integrated; they will have an error correlation representation as follow:

$$a(L)\Delta\gamma_i = a_0 - \lambda(y_t - a_i X_t) + b(L)\Delta\lambda_t + c(L)E_t \quad (6)$$

Where $a(L)$, $b(L)$ and $c(L)$ are stable and invertible polynomials, respectively. Such models provide a more attractive way of presenting and modeling cointegrating series. The error correction models combine the long run ($y_t - aX_t$) and the short run dynamics. The second step of Engle and Granger methodology consists to estimate the following regression:

$$\Delta y_t = a + \sum a^r \Delta y_{t-1}^r + \sum \beta_j \Delta X_{t-1} + bEC_{t-1} \quad (7)$$

Where a denotes the first difference and the EC represents the error term. Therefore, equation (3) can be rewritten as:

$$\begin{aligned} \ln POV = & a + a_1 \ln EG + a_2 \ln UNEMPR + a_3 \ln HCE + a_4 \ln AGC_GDP \\ & + a_5 \ln RUTP + \lambda e_{t-i} + \epsilon t \end{aligned} \quad (8)$$

Definition of variables

POV is poverty index, EG is economic growth which is measured by GDP per capita growth (annual % growth rate), UNEMPR is unemployment rate, HCE is household final consumption expenditure (annual % growth rate), AGC_GDP measures agriculture to GDP and RUTP measures rural population to total population. The ECM term is represented by coefficient of λ if the variables are co integrated.

Analysis

Stationary Test

In the table 1 below the ADF test shows that the ADF statistical values for all the variables are greater than the critical values at 1% and 5% which means that all the variables under the study are stationary in the order one I(1) and also significant. Therefore, the null hypothesis is rejected and cointegration regression method of analysis is most preferable to analyze the data.

Table 1. ADF Test

| Variables | ADF Statistics | Critical Values | | Probability | Order of Integration |
|----------------|----------------|-----------------|---------|-------------|----------------------|
| | | 1% | 5% | | |
| POV | -5.7179 | -3.6329 | -2.9484 | 0.0000 | I(1) |
| EG | -9.9115 | -3.6329 | -2.9484 | 0.0000 | I(1) |
| UNEMPR | -6.6354 | -3.6329 | -2.9484 | 0.0000 | I(1) |
| HCE | -4.9693 | -3.6616 | -2.9604 | 0.0003 | I(1) |
| AGC_GDP | -6.4668 | -3.6394 | -2.9511 | 0.0000 | I(1) |
| RUTP | -6.4394 | -3.6329 | -2.9484 | 0.0000 | I(1) |

Source: Author's Computation, 2018

Correlation Analysis

The results in table 2 below show that poverty and unemployment rate are positively correlated, also agriculture (AGRIC_GDP) and rural population (RUTP) are positively correlated. Evidence from the results indicates that high unemployment rate leads to high level of poverty. It is also evidenced that agriculture activities exist mainly in rural areas because rural population (RUTP) variable is negatively correlated to all the variables except to agriculture (AGRIC_GDP).

Table 2. Correlation Matrix

| | POV | EG | UNEMPR | HCE | AGC_GDP | RUTP |
|---------|-----------|-----------|-----------|-----------|----------|----------|
| POV | 1.000000 | | | | | |
| EG | 0.208476 | 1.000000 | | | | |
| UNEMPR | 0.568820 | 0.156980 | 1.000000 | | | |
| HCE | 0.185952 | 0.052944 | 0.168292 | 1.000000 | | |
| AGC_GDP | -0.184265 | 0.121374 | -0.481830 | 0.021449 | 1.000000 | |
| RUTP | -0.777841 | -0.088067 | -0.782877 | -0.135063 | 0.529872 | 1.000000 |

Source: Author's Computation, 2018

Johansen Co-integration Test

The results in tables 3a and 3b below show that both the trace and max-Eigen tests indicate one cointegrating equation and also their statistical values are greater than the critical values at 5% level of significant. Therefore, the null hypothesis of no cointegration should be rejected, which indicates that there is long run relationship among the variables.

Table 3a. Unrestricted Cointegration Rank Test (Trace)

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
|---------------------------|------------|-----------------|---------------------|---------|
| None * | 0.805845 | 124.4181 | 95.75366 | 0.0001 |

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level.

Table 3b. Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
|---------------------------|------------|---------------------|---------------------|---------|
| None * | 0.805845 | 57.36850 | 40.07757 | 0.0002 |

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level.

Source: Author's Computation, 2018

Normalized Cointegration Test

In Table 4 below the coefficient estimates of EG, UNEMPR, HCE and AGC_GDP show an inelastic relationship with POV, while only AGC_GDP is statistically significant. The coefficient estimate of RUTP shows an elastic relationship with POV and statistically significant. This indicates that a change in RUTP leads to more than a proportionate change in POV. The t-statistics also show that RUTP is statistically significant in explaining changes in POV. Overall, the results from the normalized cointegration test proved that the independent variables have both positive and negative long run effect on the dependent variable.

Table 4. Normalized Cointegration Results

| Variables | Coefficients | Std. Error | T-values | Relationship (Type) | Remark |
|------------------|--------------|------------|----------|---------------------|--------------|
| EG | 0.0032 | 0.0049 | 0.65 | Positive | Not Expected |
| UNEMPR | -0.3843 | 0.3403 | -1.13 | Negative | Not Expected |
| HCE | 0.0670 | 0.0923 | 0.73 | Positive | Not Expected |
| AGC_GDP | 0.5770 | 0.3183 | 1.81 | Positive | Not Expected |
| RUTP | -1.7494* | 0.3656 | -4.79 | Negative | Not Expected |
| R-squared | 0.629452 | | | | |

Source: Author's Compilation, 2018

Error Correction Model Estimate

In the table 5 below the estimated error term coefficient shows a statistically significant negative sign which indicates the percentage of the disequilibrium in the dependent variable that was adjusted from one period to another. The coefficient of -0.34 indicates that 34% of the errors generated in each year are corrected in subsequent year. Also, since the Durbin Watson statistic value is greater than the R-squared, then the regression result is not spurious and its report is reliable for forecasting and policy making.

Overall the policy implication of these results is that there is need for the country to activate the virtuous circle of inclusive growth more fully which will require changes the approach to structural reform.

Table 5. Error Correction Model Results

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|--------------------|-------------|--------|
| ECM(-1) | -0.342605 | 0.097142 | -3.526853 | 0.0014 |
| R-squared | 0.454912 | Durbin Watson stat | 1.89 | |
| Adjusted R-squared | 0.342135 | F-Statistic | 4.03 | |
| Prob(F-statistic) | 0.004656 | | | |

Source: Author's Compilation, 2018

Pairwise Granger Causality Tests

In table 6 below there is unidirectional causality between POV and HCE (i.e. poverty granger cause household consumption expenditure). Also, the same unidirectional causality occurs between POV and UNEMPR (i.e. poverty granger cause unemployment rate) RUTP and UNEMPR (i.e. rural population to total population ratio granger cause unemployment rate), RUTP and AGC_GDP (i.e. rural population to total population ratio granger cause agriculture to GDP ratio).

Table 6. Pairwise Granger Causality Tests

| Null Hypothesis: | Obs. | F-Statistic | Prob. |
|-------------------------------------|------|-------------|--------|
| POV does not Granger Cause UNEMPR | 36 | 4.97901 | 0.0326 |
| POV does not Granger Cause HCE | 36 | 4.97480 | 0.0326 |
| RUTP does not Granger Cause UNEMPR | 36 | 4.97480 | 0.0334 |
| RUTP does not Granger Cause AGC_GDP | 36 | 6.11863 | 0.0187 |

Source: Author's Compilation, 2018

Conclusion and Recommendations

Conclusion

The study examined the relationship between poverty reduction and inclusive growth in Nigeria. The study was informed as a result of the apparent deterioration in welfare conditions in the nation that has experienced rapid growth since 2000 with its attendant problems of high unemployment rate and proportion of people living in extreme poverty in recent years. More so, the economy is not creating enough jobs and little that are being generated are of too low quality to reverse income inequality. The study observed that the extent to which growth reduces poverty depends on the degree to which the poor participate in the growth process and share in its proceeds. Overall, the study found that there is inelastic relationship between most of the variables and poverty reduction in Nigeria. The policy implication of this is that to make growth more effective at reducing poverty there is need to develop and implement policies aiming to improve agricultural production so that the poverty reduction rate grows faster. Therefore, the study concludes that sound economic growth especially in the rural areas will serve as catalyst in poverty reduction in Nigeria.

Recommendations

Based on the foregoing, it is recommended that the Federal Government of Nigeria should embrace and be committed to the 2030 Sustainable Development Goals (SDGs) and targets which seek to eradicate poverty and promote inclusive growth. A key catalyst in efforts to spur inclusive growth that will reduce poverty is to embark on the followings:

- The government should endeavor to encourage successful innovative and competent entrepreneurial response that can promote inclusive growth in relation to poverty reduction through structural reforms which are critical to improve competitiveness and productivity in the economy.
- Government should persevere with their Transformation Agenda by continuing overhauling health and educational system, the improvement of power supply, and broadening agricultural production for inclusive growth-promoting socio-economic strategies and policies which will go a long way in effectively reducing poverty.
- Finally, there is need for the development of strong rural banking sector for local resource mobilization and business development in line with the country specific poverty alleviation programmes which should be well designed to incorporate the peculiarity of the vulnerable members of the community and rural dwellers neglected from the growth process.

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