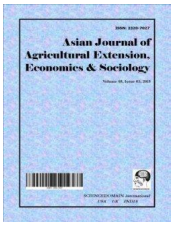

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Explaining Poverty and Inequality Changes in Rural Nigeria

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Authors' contributions

This work was carried out in collaboration among all the authors. Author AGT designed the study, wrote the protocol, managed the literature searches, wrote the first draft and put the manuscript together for submission. Author ATT performed the statistical analysis and interpretations of the study. Author AAO made intellectual contributions to the statistical analysis and interpretations. All the authors read and approved the final manuscript.

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ABSTRACT

The problem of poverty and inequality has been a long standing issue in most Sub-sahara African countries including Nigeria. The rural poverty situation in Nigeria was assessed using three datasets which include; 1996 National Consumer Survey (NCS), 2004 National Living Standard Survey (NLSS) and 2008/09 Harmonized National Living Standard Survey (HNLSS) all sourced from the National Bureau of Statistics.

The level of poverty in the rural area was more severe in 1996 than in 2004. It was 69.2 per cent in 1996 and 65.1 per cent in 2004 indicating a reduction of -5.9 per cent. In 2010, poverty headcount rose by 9.06 per cent. Elasticity of Total Poverty with Respect to Average Income Growth shows that a unit change in income growth results in -0.86 poverty headcount meaning if income rises by 10 per cent, poverty will be reduced by 8.6 percent. Poverty gap with elasticity of -1.38 shows more decrease in poverty than headcount. Severity with elasticity of -1.72 indicates that with 10 percent increase in income growth, poverty will be reduced by 17.2 per cent. Severity (α = 2) is therefore the most poverty sensitive measure. Elasticity of total poverty with respect to inequality indicates

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that if inequality increases by 1 unit, Headcount (P_0) increases by 0.095. Similarly, poverty gap (P_1) of 1.26 implies that a unit increment in inequality pushes poverty up by 1.26. The trend continues with poverty severity index, P_2 which increases poverty by 2.41 percent with a unit increase in inequality. Policies targeted at reducing inequality of opportunities among rural population will go a long way in alleviating poverty and in achieving the millennium Development Goal1.

Keywords: Poverty; inequality; elasticity; Foster-Greer-Thorbecke measures; rural Nigeria.

1. INTRODUCTION

The problem of poverty has been a long standing issue in Nigeria. This is indicated by the low social status and poor living conditions of the inhabitants. The problem has been made worse over the years by the development pattern which has favoured the urban modern sectors to the detriment of the traditional rural sectors [1]. The rural poor still account for more than 75% of the poor in many Asian and Sub-Saharan African countries (Nigeria inclusive) and more than 50% in Latin America [2]. This is an indication that poverty in Nigeria is predominant in the rural areas, where the country's largest population live [3].

A recent poverty assessment survey has shown that over 70% of the population are living on less than a dollar per day and over 50% are living below the national poverty line. The survey also revealed that poverty is especially higher in rural areas where majority of the population are resident and derive their livelihoods from agriculture [4]. For example, in 1992, 46.4 million Nigerians were said to be living in absolute poverty, out of which 80.2% or 37.7 million are in the rural areas [5]. These rural population depend almost solely on agriculture as their major source of livelihood [6]. However, the agriculture sector in the country has suffered a protracted neglect since the discovery and subsequent drilling of crude oil in the country, and has remained poorly developed with weak policies to promote profitable domestic farming [7]. It is therefore not capable of providing substantial income and cannot create a significant economic leverage and improvement in the well being of the people. In other words, since agriculture is the main source of livelihoods of the rural population who constitutes the largest proportion of the country's poor, increased poverty in Nigeria is therefore not unconnected with policy failures, especially policies to promote effective agricultural development which can enhance a better living standard of the people [8,9]. The inclusion of inequality cannot be over emphasized in ameliorating poverty analysis. In current studies about poverty or inequality in-depth understanding of the relationship between inequality and poverty reduction is necessary in order to design policies that will enhance the welfare of the citizenry. This is because over-looking the link between poverty and inequality, poverty reduction policies will fail to meet targets of the Millennium Development Goals 1. Furthermore, policies aimed at reducing inequalities of opportunity are more likely to be successful in alleviating poverty, since many of these opportunities are closely related.

In highly unequal societies, poverty and inequality usually affect the populations. This is because structural inequalities especially in income and input distributions are manifestations, as well as strong causes of poverty. These inequality measures may either address poverty issues directly through progressive redistribution schemes or can indirectly address poverty reduction by increasing the opportunities of the marginalized. Furthermore, knowledge about the links between non-income inequalities and poverty and growth remains very limited [10]. To explore the impact of inequality on the poor, we need to specify the change in distribution more precisely [11]. Indeed, arguably the most important welfare consequence from growth, in terms of its impact on poverty, is how this growth process impacts on the distribution of income. The consequent literature, driven by the works, for example, of [12,13,14,15] have attempted, varyingly, to provide a more accurate and careful representation of the interaction between economic growth, poverty and inequality.

2. LITERATURE REVIEW

The relationship between poverty and inequality is of concern to both researchers and policy makers. However, just focusing on growth or inequality may be termed descriptive because we fail to identify the procedure underlying this relationship. In recent times, a new debate about the relationship between growth and income

inequality and their combined effects on poverty has emerged. Recent literature now questions the traditional [16] proposition which stipulates a trade-off between growth and inequality reduction in low income countries [17,18]. [19] highlights the above point by arguing that though two effects could achieve a change in absolute poverty i.e; (1) the growth rate of the mean income of the population; and (2) the change in income redistribution; these two effects are dependent of one another, as well as dynamically interact over time. [20] indicates that as economic growth increases, poverty decreases and as inequality in income increases the incidence of poverty increases. Some factors that cause inequality to negatively impact on growth and consequently on poverty are, credit market imperfection [21], governance [22] and social security [23].

Concurring with the above views, [24] suggest that poverty and growth elasticities are a function of inequality. They opine that policies geared towards better redistribution can either directly reduce poverty through a reduction of inequality gaps between the rich and the poor in terms of income and wealth; or help reduce the cost of future poverty reduction. Substantiating the above reasoning, since redistribution sprouts from sharing fruits of growth to the poor, they both account for poverty reduction [25].

3. METHODOLOGY

3.1 Data and Survey Method

The dataset used for this study include National Consumer Survey (NCS) of 1996, 2004 World Bank assisted National Living Standard Survey (NLSS) and 2009/2010 Harmonised National Living Standard Survey (HNLSS) all sourced from the National Bureau of Statistics (NBS). All the survey data sets followed almost the same sampling procedure.

3.1.1 Sampling method and sampling size

The NCS of the Federal Office of Statistics (Now National Bureau of Statistics) is a nationally representative survey covering about 11,577 households. The rural household component of NCS used in the study were 9,377 households. For 2004 NLSS, a two-stage stratified sampling method was adopted. At the first stage, from each of the 36 states and the Federal Capital Territory (FCT, Abuja), cluster of 120 housing units called Enumeration Area (EA) were randomly selected. The second stage involved random selection of five housing units from the selected EAs. A total of 600 households were randomly chosen in each state and the FCT, summing up to 22,200 households in all (NBS, 2003). Preliminary analysis of the data shows that out of the 22,200 households that were targeted, only, 19,158 completed the questionnaire. The Harmonized Nigeria Living Standard Survey (HNLSS) 2009/2010 is an enlarged scope of previous National Consumer Surveys and also a follow-up to the Nigeria Living Standard Survey (NLSS) 2003/2004. The scope of the HNLSS 2009/2010 was enlarged to include: demography; health; fertility behaviour, education and skills/training; employment and time-use; housing and housing condition; social capital, agriculture; household income and consumption, and expenditure.

3.2 Measurement of Variables

3.2.1 Gini coefficient (measurement of income inequality)

The main measures of inequality in literature are: The Gini, Theil and Atkinson indices. This study however focused on the Gini index or coefficient. This is not only because it is the most widely used method but also because it has properties that inform policy. The Gini coefficient was used in this study to analyse inequality between different households in a population. Since [26], the coefficient has been found to be useful for this purpose. The coefficient is calculated as the ratio of the area between the Lorenz curve and the diagonal line of perfect distribution and the total area below the line. It has a value of between 0 and 1.

If the Lorenz curve is the 45º line, then the value of the Gini coefficient would be zero. In general, the closer the Lorenz curve is to the line of perfect equality, the less the inequality and the smaller the Gini coefficient. The Gini coefficient is computed as:

$$\mathrm{I}_{gin}\left(Y\right)=\frac{2\sum_{i}^{n}=1}{n^{2}\mu}i\left[\frac{n+1}{2}\right]y_{i} \quad (1)$$

Where n is the number of observation, μ is the mean of distribution, and y_i is the income of the i^{th} household and I_{gin} is the income Gini.

3.3 Poverty Indices

Generally, the poverty indices are measured as:

P0 = Head count/Incidence: Counts the number of people with expenditure/income below the poverty line.
P1 = Depth of Poverty: The percentage of expenditure/ income required to bring each individual below the poverty line up to the poverty line.
P2 = Severity of Poverty: It indicates severity of poverty by giving larger weight to the extremely (core poor). This is done by squaring the gap between their expenditures/income and the poverty line in order to increase its weight in the overall poverty measure. It has become customary to use the so-called P alpha measure in analysing poverty. The measure relates to different dimensions of the incidence of poverty. Po, P1 and P2 are used for head count (incidence), depth and severity of poverty respectively. The three dimensions are based on a single formula, but each index puts different weights on the degree to which a household or individual falls below the poverty line.

The mathematical formulation for poverty measurements as derived from [27] is:

$$\text{FGT } \alpha = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z-y_i}{z}\right)^{\alpha} \quad (2)$$

where z = the poverty line

q = the number of individuals below the poverty line
n = the total number of individuals in which individual i lives
α = Foster-Greer-Thorbocke (FGT) index and takes on the values of 0,1 and 2.

The quantity in brackets is the proportionate shortfall of expenditure/income below the poverty line. This quantity is raised to a power α, the aversion to poverty as measured by the index is also increased. α

If α = 0, then FGT becomes:

$$P0 = \frac{1}{n}q = \frac{q}{n} \quad (3)$$

q is the proportion of the population that falls below the poverty line. This is called the head count or incidence of poverty.

If α = 1 then FGT becomes:

$$P1 = \frac{1}{N}\sum_{i-1}^{q}\left(\frac{z-yi}{z}\right)1 \quad (4)$$

$$= HI$$

Where H = $\frac{q}{n}$ and I $= \sum\left(\frac{Z-Yi}{Z}\right)2$

If α = 2 then FGT becomes:

$$P2 = \frac{1}{N}\sum_{i-1}^{q}\left(\frac{Z-Yi}{Z}\right)2 \quad (5)$$

3.4 Elasticity Calculations

For poverty and inequality elasticity calculations, three methods have been proposed by [28]. These are: Non-marginal distributive changes approach, the parameterized approach and the numerical approach. With the non-marginal distributive changes, the use of the analytical approach will induce a non neglected error in the estimates. This can be explained by the non linear link between poverty indices and components controlling for the change in distribution, like growth.

The parameterized approach, proposed by [29], will in general generate a non neglected error term in the estimated impact. This is especially the case when the predicted distribution is different from the observed one. The numerical approach, proposed by [28], gives accurate results for the two forms of change (marginal and non-marginal). This numerical approach is promising as it can be extended to study other topics of the distributive analysis. Gaussian Kernel estimator as proposed by [28] is adopted for this paper. Formally, the expected change in headcount, resulted from economic growth, is equal to:

$$\Delta P(z; \alpha = 0) = -\int_{z/(g+1)}^{z} f(y)dy \quad (6)$$

As stated by [28], the impact of growth on poverty gap may be defined
as follows:

$$\Delta P\ (z;\ \alpha = 1) = -\underbrace{\int_0^{\frac{z}{1+g}} (g\ y/z) f(y)dy}_{C1} - \underbrace{\int_{\frac{z}{1+g}}^{z} (1 - y/z) f(y)dy}_{C2} \quad (7)$$

The component C1 indicates the reduction in poverty gap attributed to the improvement in wellbeing of those that continue to be poor. The component C2 indicates the reduction in poverty gap attributed to those that escape from poverty after the economic growth. When the growth g converges to zero, the component C2 may be neglected [28]. Using the same approach, the impact of growth on poverty severity can be stated as follows:

$$\Delta P\ (z;\ \alpha = 2) = - \underbrace{\int_0^{\frac{z}{1+g}} (g\ y(gy - 2(z-y))/z^2 f(y)dy}_{C1} - \underbrace{\int_{\frac{z}{1+g}}^{z} (1 - y/z)^2 f(y)dy}_{C2} \quad (8)$$

For the increase in inequality and when **z < μ**, the impact on headcount is:

$$\Delta P\ (z;\ \alpha = 0) = \int_z^{z+(\lambda-1)(\mu)/\lambda} f(y)dy \quad (9)$$

Thus, the headcount increases. When z > μ, we will observe a decrease in headcount and the impact is given by:

$$\Delta P\ (z;\ \alpha = 0) = \int_{(z+(\lambda-1)\mu)/\lambda}^{z} f(y)dy \quad (10)$$

As discussed also by [12], the sign of the impact will depend on the difference between the poverty line (z) and the average income (μ). For the poverty gap and when z < μ, the impact on poverty will take the following form:

$$\Delta P\ (z;\ \alpha = 1) = \underbrace{\int_0^{z} (\lambda - 1)((\mu - y)/z) f(y)dy}_{C1} + \underbrace{\int_z^{z+(\lambda-1)/\lambda} [((z-\mu) + \lambda(\mu - y))/z] f(y)dy}_{C2} \quad (11)$$

When z < μ, the impact on poverty severity is as follow:

$$\Delta P\ (z;\ \alpha = 2) = \frac{1}{z^2} \underbrace{\int_0^{z} [(z - (\lambda y - (\lambda - 1)\mu))^2 - (z-y)^2] f(y)dy}_{C1} + \underbrace{\int_z^{(z+(\lambda-1)\mu)/\lambda} \left[1 - y/z^2\right] f(y)dy}_{C2} \quad (12)$$

When z > μ, the impact on poverty severity is as follow:

$$\Delta P\ (z;\ \alpha = 2) = \frac{1}{z^2} \underbrace{\int_0^{\mu} [(z - (\lambda y - ((\lambda - 1)\mu))^2 - (z - y^2] f(y)dy}_{C1} + \underbrace{\frac{1}{z^2} \int_{\mu}^{(z+(\lambda-1)\mu)/\lambda} \left[\begin{pmatrix} z - \lambda y - \\ (\lambda y - (\lambda - 1)\mu) \end{pmatrix}^2 - (z-y)^2 \right] f(y)dy}_{C2} - \underbrace{\int_{(z+(\lambda-1)\mu)/\lambda}^{z} \left[(1 - y/z)^2\right] f(y)dy}_{C3} \quad (13)$$

4. RESULTS AND DISCUSSION

4.1 FGT Poverty Decompositions

4.1.1 Estimates of poverty in rural Nigeria (1996 to 2010)

Table 1 presents the estimates of poverty in rural Nigeria in 1996, 2004 and 2010. For poverty estimates, the most commonly used measure can be seen as special cases of this family of measures, namely; the poverty headcount index (α= 0 or the percentage of households that are poor), the poverty gap (α=1, which captures the depth of poverty), and the severity index (α=2), which unlike the poverty gap is sensitive to redistribution among the poor. The poverty lines for 1996, 2004 and 2010 are ₦754.00, ₦22,063.51 and ₦43,268.19 respectively. The estimates of head-count ratio, poverty gap ratio and FGT poverty index at α =2 are also presented. As can be seen from the Table, the level of poverty in the rural area was more severe in 1996 than what obtained in 2004. It was 69.2 per cent in 1996 and 65.1 per cent in 2004 indicating a reduction of -5.9 per cent. In 2010, poverty headcount has again risen by 9.06 per cent (from 69.2 per cent in 2004 to 71.0 per cent in 2010). The rise in poverty in the agricultural sector in 1996 can be explained by

the abandonment of rural agricultural policies of the Structural Adjustment Programme (SAP) period. Although there is relative decline in the percentage of poverty among people in the agricultural sector in 1996, there is still a concentration of poverty in the agricultural sector. This is traceable to continued depreciation of the naira, the price hike on petroleum products, high import rates of duties and periodic shortages of food items. In general, the economic environment prevailing in 1996 was that of structural and financial imbalances. Programmes such as better life, family support programme and family economic advancement programme introduced by the government achieved very little in combating poverty. The challenge for Nigeria is not to improve one sector or region at the expense of another, or to introduce policy distortions and inefficiencies in resource allocation to benefit one group, which in the past has led to increased poverty for others. The challenge is to adopt growth and social service oriented policies (i.e., public expenditure, revenue and investment – budget) that will enable all its inhabitants to improve their welfare. The reduction in poverty experienced in 2004 may not be unconnected with the various economic recovery measures put in place by the then Obasanjo civilian administration. This enhanced the per capita incomes of both the poor and non-poor households. Democratic rule in 1999 heralded a period of high economic growth built on the back of improved flow of capital into the economy as a result of renewed confidence in democratic rule; a deluge of reforms and liberalisation of the economy for increased private sector participation and financial market efficiency. Real GDP growth surged from an average of 2.54% in the period of 1995-1999 to 11.9% for the period of 2000-2004. Expectedly therefore, the decline in poverty incidence to 54.4% in 2004 from 65% in 1996 is theoretically reasonable [30]. Poverty gap index for the periods (34.5%; 27.6%, 49.0%) also follows the same pattern. It is lower in 2004 than in 1996. This has however gone up in 2010. The poverty severity index, P_2 also shows a similar trend. It is however more distribution sensitive than the other two measures. It is 21.2 per cent in 1996, it has reduced to 14.9 per cent in 2004 and by 2010 it has risen to 18.5 per cent in 2010. Only in the case of the severity index is there a higher value given to instruments that transfer more of the budget to the poorest households, and in all three poverty indices, transfers to the non-poor are considered equally undesirable regardless of how close or otherwise they are to the poverty line [31]. The poverty increase between 2004 and 2010 may be attributed to political and socio-economic instability witnessed by the country during that period. There was regional crisis, youth restiveness was rampant, poor health and eventually the death of the then president Yar'adua. Certain critical economic policies and political decisions were affected as well as implementation of reform agenda. The early years of president Jonathan's rule also witnessed waves of problems like political crisis, terrorism, economic sabotage among others. Thus, lack of leadership continuity is one of the major causes of poverty rise in the country.

4.1.2 FGT curves of poverty changes in rural Nigeria (1996 to 2010)

The estimates of head count ratio, poverty gap ratio and FGT poverty index at α =2 are also shown pictorially in Figs. 1, 2 and 3 below. In 1996, when α= 0, high proportion of people are under poverty line as the curves present steeper pictures than in the other two measures. When α=2 however, there is lesser proportion of people under poverty (Fig. 3). When α=2, the shape of FGT is more convex than in the other two poverty measures (Headcount and Poverty gap). This is as a result of redistribution factor. As can be seen from the Table, the level of poverty in the rural area was more severe in 1996 than in 2004. The high incidence of poverty in the 5-years period of 1995-1999 could be as a result of the political instability that characterized that period. In 2010, the trend was reversed again as a result of rise in poverty.

4.2 Elasticity of Total Poverty with Respect to Average Income Growth

From Table 2, a unit change in income growth results in -0.86 poverty headcount meaning that if we increase income by 10 per cent, poverty will be reduced by 8.6 percent. Poverty gap with elasticity of -1.38 shows more decrease in poverty than headcount. Severity with elasticity of -1.72 shows that with 10 percent increase in income growth, poverty will be reduced by 17.2 per cent. This is an indication that severity (α = 2) is the most poverty sensitive measure. The finding is in consonance with [30] who estimates growth elasticity of poverty to be -0.64 compared with calculated value of -0.79 which are consistent with [32] contention that a value of the order -1 is more realistic for developing countries context. This value may have been aided by high initial inequality as Gini for 1996 is 0.49 while for

2004 it is 0.46. Previous research has also shown that the value of the growth elasticity is lower in countries with higher inequality, as measured by the Gini coefficient [33,34].

The results in Table 3 shows the elasticity of total poverty with respect to inequality. If inequality increases by 1 unit, Headcount (P_0) increases by 0.095. Similarly, poverty gap (P_1) of 1.26 indicates a unit increment in inequality pushes poverty up by 1.26. The trend continues with poverty severity index, P_2 which indicates that a unit increase in inequality by 1 percent will cause poverty to increase by 2.41 percent.

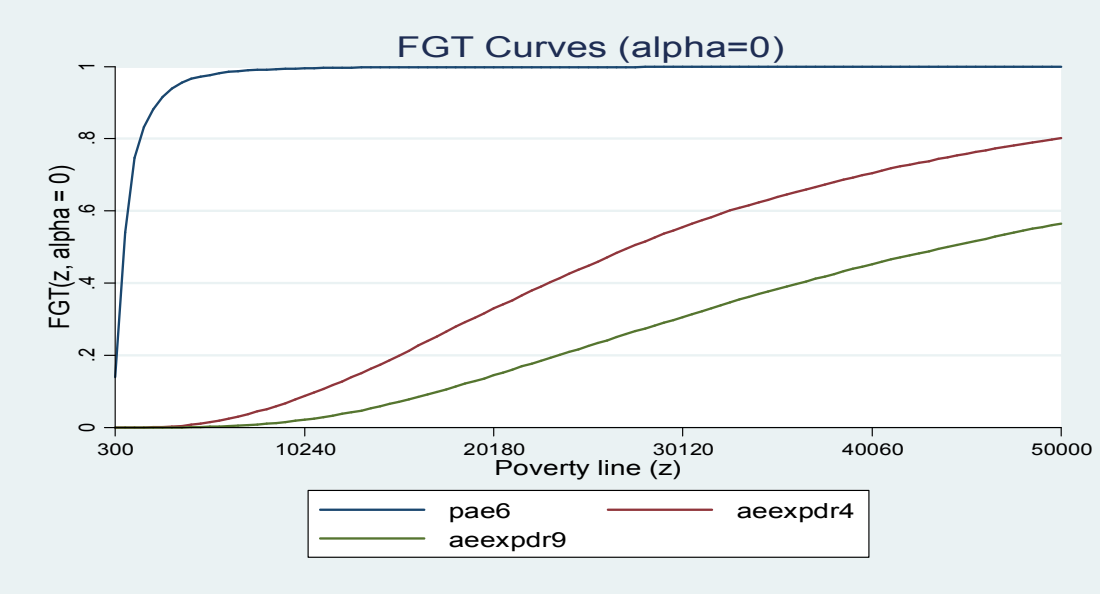

Fig. 1. FGT curves of poverty changes in rural Nigeria at P_0

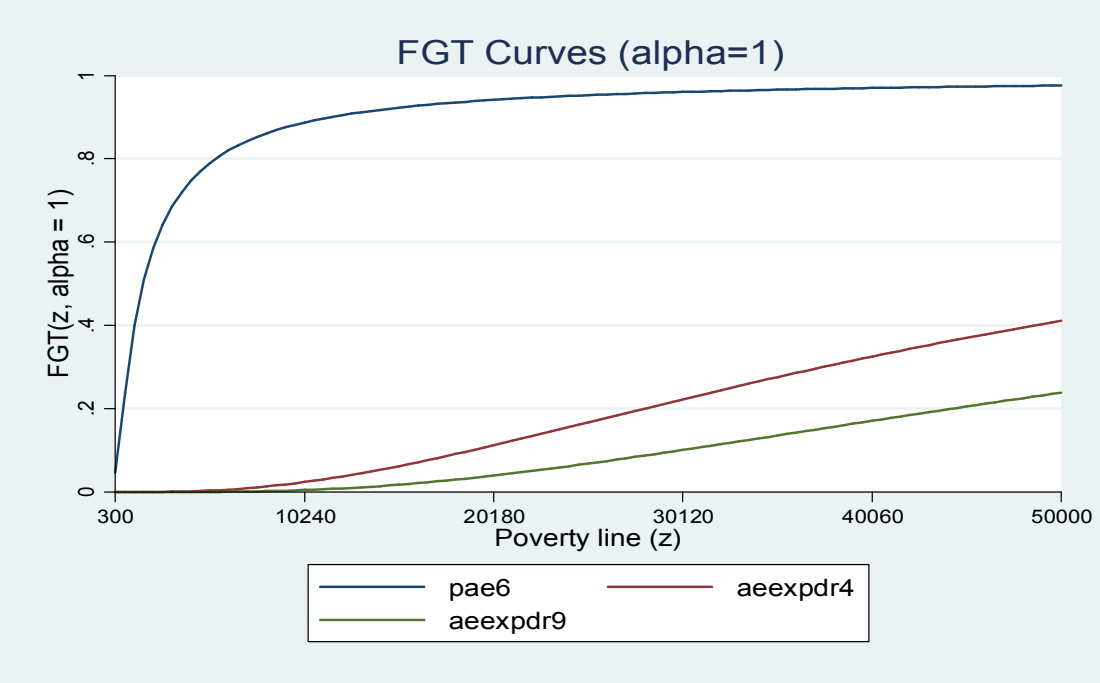

Fig. 2. FGT curves of poverty changes in rural Nigeria at P_1

Table 1. Estimates of poverty and inequality in rural Nigeria

	1996	2004	2009	poverty change (1996-2004)	poverty change (2004-2009)	% poverty change (1996-2004)	% poverty change (2004-2009)
Gini	0.479	0.460	0.481				
Poverty line	754	22063.51	42368.19				
P_0 (H)	0.692	0.651	0.710	-0.041	0.059	-5.9	9.06
P_1 (Pgap)	0.345	0.276	0.325	-0.068	0.049	-19.9	17.15
P_2 (FGT 2)	0.212	0.149	0.185	-0.062	0.036	-29.3	24.16

Source: Authors' calculation from survey data

Table 2. Elasticity of total poverty with respect to average income growth

Variable	Estimate	STE	LB	UB
Aeexpdr9 (P_0)	-0.864112	0.016879	-0.897197	-0.831028
Aeexpdr9 (P_1)	-1.383046	0.012252	-1.407061	-1.359031
Aeexpdr9 (P_2)	-1.730822	0.014041	-1.758344	-1.703300

Source: Authors' calculations from survey data

Table 3. Elasticity of total poverty with respect to inequality

Variable	Estimate	STE	LB	UB
Aeexpdr9 (P_0)	0.095257	0.006982	0.081573	0.108941
Aeexpdr9 (P_1)	1.262699	0.017998	1.227422	1.297977
Aeexpdr9 (P_2)	2.411274	0.027958	2.356474	2.466074

Source: Authors' calculations from survey data

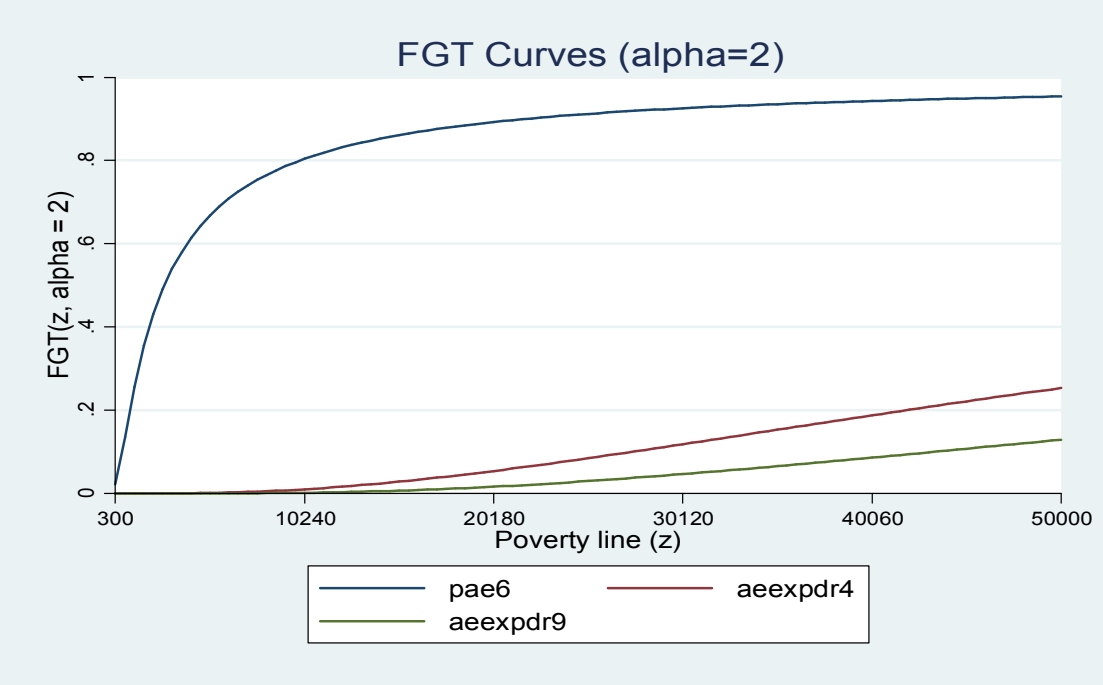

Fig. 3. FGT curves of poverty changes in rural Nigeria at P_2
pae6 **=** *per capita expenditure 1996*
aeexpdr4 **=** *per capita adult equivalent expenditure in 2004*
aeexpdr9 **=** *per capita adult equivalent expenditure in 2010*

5. CONCLUSION AND POLICY RECOMMENDATIONS

The study revealed that there is inconsistency in the poverty situation in Nigeria which can be attributed to frequently changing policies and increasing inequalities in the country. A low elasticity of poverty as recorded in this study implies that the whole potential of growth will not manifest until there is egalitarian distribution of income. The poverty elasticity can be influenced by the mix of government (and of course other) expenditure, and other institutional incentives such as more effective planning, implementation and optimal deployment of resources for development. Studies carried out by [35,36] indicate that even modest reductions in inequality can have a large poverty reducing impact. Since growth alone is not sufficient for poverty reduction, the conditions for pro-poor growth are those closely tied to reducing the disparities in access to human and physical capital, and sometimes also to differences in returns to assets, that create income inequality and probably also inhibit overall growth prospects.

Economic strategies should therefore be designed with specific focus on the general population rather than strategies resulting in accumulation of personal wealths at the expense of a better life for the majority of the people. Government at all levels need to sincerely target the livelihood problems of the people, mainly those in the rural areas who are the main focus of this study. There is the need for investment in domestic agricultural production and to develop and empower local production of goods and services rather than promoting the importation of goods which the country can produce. Suitable policies should be made using professional platforms with a dedicated fight against administrative inadequacies inherent in almost all sectors of government in the country. Above all, Nigeria can achieve a significant reduction in poverty with increased efforts aimed at promoting technology, employment generation, agriculture and projects that will improve the wellbeing of the people.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. World Bank. Nigeria poverty in the midst of plenty, the challenge of growth with inclusion. A World Bank poverty assessment handbook, population and human resources division report 1473. Washington, D.C: World Bank; 1996.
2. Pinstrup-Anderson P, Pandya-Lorch R. Agricultural Growth is the Key to Poverty Alleviation in Low-Income Developing countries. IFPRI, 2020 Vision Brief 15, Apil, Washington DC; 1995.
3. Omonona B. Quantitative Analysis of Rural Poverty in Nigeria. International Food Policy Research Institute, Brief No. 17; 2010. Accessed 28 January 2014. Available:www.ifpri.org
4. FAO. Fao stat, fao, Nigeria. 2006. Available:http//www.fao.org/faostat
5. Ogwumike FO. Structural adjustment and poverty in sub-saharan Africa. A report prepared for the network on African perspective on structural adjustment, CODESRIA, Dakar. 1-10; 1996.
6. Nwachukwu IN, Ezeh CI. Impact of selected rural development programmes in poverty alleviation in Ikwano LGA, Abia State, Nigeria. African Journal of Food Agriculture, Nutrition and Development. 2007;7(5).
7. Ukpong IG, Ekpebu ID, Ofem NI. Cointegration Inferences on Issues of Poverty and Population Growth in Nigeria, Journal of Development and Agricultural Economics. 20135(7):277-283. DOI: 10.5897/JDAE12.151.
8. Aigbokhan BE. Poverty, growth and inequality in Nigeria: A case study. African Economic Research Consortium (AERC). Research Paper, 102; 2000.
9. Oshewolo S. Poverty reduction and the attainment of the MDGs in Nigeria: Problems and Prospects, International Journal of Politics and Good Governance. 2011;2(2.3) Quarter III.
10. Epo BN, Baye MF. Determinants of Well-being and Poverty Changes in Cameroon: 2001-2007. African Development Review. 2012.
11. Araar A, Duclos JY. Poverty and Inequality: A micro framework. Journal of African Economies. 2010;19(3):357–398, DOI: 10.1093/jae/ejq005.
12. Kakwani N. Poverty and economic growth with application to Cote D'Ivoire. Review of Income and Wealth. Series. 1993;39(2).
13. Ravallion M, Chen S. What can new survey data tell us about recent changes in poverty and distribution? World Bank Economic Review. 1997;11(2):357-382.
14. Ravallion M, Datt G. Why has economic growth been more pro-poor in some states of India than others? Journal of Development Economics. 2002;68:381–400.
15. Kanbur R. Growth, inequality and poverty: Some hard questions. Journal of International Affairs. Spring; 2005.
16. Kuznets S. Economic Growth and Income Inequality. American Economic Review. 1955;45:1-25.
17. List JA, Gallet CA. The Kuznets curve: What happens after the Inverted-U? Review of Development Economics. 1999;3(2):200-6.
18. Gelan A, Price GN. African Economies and the Kuznet Curve: An Explanatory Investigation. Applied Economic Letters. 2003;10:747-751.
19. Bourguignon F. The poverty-growth-inequality triangle. Paper presented at the Indian Council for Research on International Economic Relations, New Delhi; 2004.
20. Kimalu PK, et. al. A situational analysis of poverty in Kenya. KIPPRA, Working Paper; 2001.
21. Barro R. Inequality and growth in a panel of countries. Journal of Economic Growth. 2000;5:5–32.
22. Aghion P, Caroli E, Garcia–Pexalosa C. Inequality and economic growth: The perspective of the new growth theories. Journal of Economic Literature. 1999;37: 1615 –1660.
23. Collier P, Hoeffler A. Greed and grievance in Civil War. Oxford Economic Papers. 2003;56(4):563 -95.
24. Cling JP, De Vreyer, Rasafindrakoto M, Roubaud F. Growth and Poverty Reduction: Inequalities Matters. Unpublished Paper presented at the UNU/WIDER conference on Inequality, Poverty and Human Wellbeing. Helsinki; 2003.
25. Mckay A. Poverty Reduction through Economic Growth: Some Issues. Journal of International Development. 1997;9(4): 665-673.
26. Fei JC, Ranis G, Kuo S. Growth and the family distribution of income. Quarterly Journal of Economics. 1978;92(1):17-53.

27. Foster JJ, Greer J, Thorbecke E. A class of decomposable poverty measures. Econometric. 1984;52(3):761–766.
28. Araar Abdelkarim. Expected poverty changes with economic growth and redistribution. Département d' économique, Université Laval, Québec, Canada. (CIRPEE) Working Paper 12-22; 2012.
29. Bourguignon F. The growth elasticity of poverty reduction: Explaining heterogeneity across countries and time periods," Tech. rep; 2002.
30. Aigbokhan BE. Growth, inequality and poverty in Nigeria. Economic Commission for Africa. ACGS/MPAMS Discussion Paper No. 3; 2008.
31. Coady D, Skoufias E. On the targeting and redistributive efficiencies of alternative transfer instruments. Review of Income and Wealth Series 50 No. 1; 2004.
32. Ram R. Growth elasticity of poverty: Alternative estimates and a note of caution. KYKLOS. 2006;59(4):601-610.
33. Ravallion M. Growth, inequality and poverty: looking beyond averages. World Development. 2001;29(11):1803-1815.
34. Hanmer L, Naschold F. Attaining the international development targets: Will growth be enough? Development Policy Review 18, 11-36; 2000.
35. Besely T, Burgess R. Halving global poverty. Department of Economics, London School of Economics, mimeo; 2002.
36. White H, Anderson E. Growth Vs redistribution: Does the pattern of growth matter? Institute of Development Studies, University of Sussex, Mimeo; 2000.

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