ECONOMIC GROWTH, INCOME REDISTRIBUTION AND POVERTY REDUCTION IN RURAL NIGERIA

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DEDICATION

This work is dedicated to the glory of the Lord God Almighty and to the cherished memory of my late mother, Mrs Rachael Wuraola Olaniyan, who passed on to glory at the outset of this work.

Abstract

The Nigerian economy over the past few years grew at one of the highest rates in Africa. Yet, this growth has not led to substantial reduction in inequality and poverty, particularly in the rural sector. This was partly attributed to redistributional problem of national wealth which has not been adequately investigated. Therefore, the study assessed the contribution of growth and wealth distribution to poverty reduction in rural Nigeria from 1996 to 2004.

Data from the National Consumer Survey (NCS) of 1996 and National Living Standard Survey (NLSS) of 2004 sourced from the National Bureau of Statistics were used. The number of households sampled under the NCS and NLSS were 11,577 and 22,200 respectively. The rural household components of NCS and NLSS totaling 9377 and 14,515 respectively were used. Variables extracted for the study included demographic and socioeconomic characteristics as well as average household expenditure. The data were analysed using Gini, Foster-Greer-Thorbecke measures of poverty, the Shapley decomposition rule in co-operative game theory and Oaxaca-Blinder decomposition technique at $p = 0.05$.

Rural household mean ages in 1996 and 2004 were 44.8 ±13.2 and 43.0 ±14.2 years respectively. Mean family size was 5.4 ± 3.7 in 1996 and 4.9 ± 2.9 in 2004. Gini coefficient and poverty incidence in 1996 were 48.0 and 69.2% compared to 46.0 and 65.1% in 2004 respectively. In 1996, the poverty gap and severity indices were 34.5 and 21.2% respectively while in 2004, the corresponding values were 27.6 and 14.9% respectively. Poverty severity was highest (61.8%) among Remittances Income Earners (RIE) and least (32.8%) among non – farm income earners in 2004. Highest variation (67.1%) in income was among RIE while the least (45.3%) was among agricultural income group. Both economic growth and income redistribution reduced poverty by 0.025 and 0.056% respectively. A 10% decrease in inequality resulted in 0.04 and 2.45% reduction in poverty in 1996 and 2004 respectively. Similarly, a 10% increase in growth in 1996 and 2004 reduced poverty in both periods by 0.02 and 0.23% respectively. Variations in income distribution within the two periods contributed 0.248 to total inequality compared with 0.362 between the two periods. Income distribution disparity within the two periods (0.245) contributed less to poverty than the variation between the two periods (2.934). A 10% increase in growth from 1996 to 2004 reduced poverty by 6.2% and decreased inequality by 3.4%. The respective key determinants of growth for both periods were age of household head (0.011, 0.199), housing (0.038,

0.032), education (0.129, 0.141) and hours worked (0.183×10^{-4}, 0.002). Others were gender (-0.117, -0.213) and household size (-0.044, -0.140).

Economic growth and income redistribution generally ameliorated poverty between 1996 and 2004 in rural Nigeria and the growth facilitating factors comprised quality of housing, education, longer hours of work and being a middle aged household head. The effect of poverty was however more noticeable among remittances income earners.

Keywords: Economic growth, Income redistribution, Poverty reduction, Rural households
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CERTIFICATION

I certify that this work was carried out by Grace Toyin Adigun in the Department of Agricultural Economics, University of Ibadan.

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INTRODUCTION

1.1: Background to the Study

The goal of Nigeria's economic development has been to achieve stability, material prosperity, peace and social progress. A number of internal problems have however been slowing down the attainment of these growth and development objectives. These include inadequate human development, primitive agricultural practices, weak infrastructure, uninspiring growth of the manufacturing sector, a poor policy environment and mismanagement and use of resources (Nigerian Human Development Report, 2009). Nigeria's economy has relied disproportionately on oil revenue, which made the country vulnerable to global price fluctuations. As a result, Nigeria has long aspired to develop other sectors of the economy to diversify, spread the wealth, and insulate itself from booms and busts. It is widely believed that economic growth is a sustained increase in total or average output of all goods and services produced in a country. According to Nigeria Human Development Report (2009), development is where economic growth is accompanied by desirable social and institutional changes.

As reported by the World Bank (2002), real *per capita* income in the developing world grew at an average rate of 2.3 per cent per annum during the four decades between 1960 and 2000. This is a high growth rate by almost any standard. In recent years, Nigeria has been experiencing an unprecedented growth rate of 8.29 per cent (CBN, 2011). Paradoxically, expected reduction in the poverty level and the basic aim of the reform which is to restore long-term growth and development have not been realised. This makes poverty a major concern of development policy in Nigeria as in other developing countries.

Poverty and income inequality are closely related and it has been argued that income inequality is a manifestation as well as a strong cause of poverty (UNU/WIDER, 2000). Kolenikov and Shorrocks (2003) attributed the high level of poverty in the late 1990s in Russia to the rise in income inequality rather than to decline in average income. When economic growth increases, poverty rate decreases but as income inequality rises, the incidence of poverty also deepens. Because of the linkage between income inequality and poverty, reducing income inequality has become a major public policy challenge among development agencies and poverty-reduction experts. Yet, in most developing countries, discussions about poverty reduction strategies often focus almost exclusively on income

growth, neglecting the potential roles of income redistribution and inequality (UNU/WIDER, 2000).

In order to achieve reduction in poverty, income growth has to be equitably distributed. Thus, in current thinking on how best to achieve poverty reduction, both economic growth and equity have assumed a central place. A large number of studies show growth to be on average good for the incomes of the poor (Romer and Gugerty, 1997; Timmer, 1997; Gallup et al., 1998; Dollar and Kraay, 2002) and effective in reducing the poverty headcount ratio (Ravallion, 1995; Ravallion and Chen, 1997; Bruno, Ravallion and Square, 1998; Ravallion, 2001; Adams, 2004), although with considerable regional variation (Besley and Burgess, 2003). At the same time, equity is seen to be not only of intrinsic but also of instrumental importance through its impact on the rate at which economic growth translates to poverty reduction. For example, the 2006 *World Development Report* (World Bank, 2006), the 2005 *Human Development Report* (UNDP, 2005), and the 2005 report on the World Social Situation all devoted the bulk of their analysis to the myriad of ways in which equity matters for economic opportunities open to poor people, an emphasis which has already led some observers to speak of a *new equity agenda* (Anderson and O'Neil, 2006). Evidence in the literature points to the increasing level of income inequality in developing countries over the last two decades (Kanbur and Lustig, 1999, Addison and Cornia, 2001).

Essentially, economic growths are associated with policies of reduced poverty and income redistribution among the poor majority. To this end, the increasing level of income inequality in Nigeria has been of concern to policymakers for a long time. Economic growth does not consistently affect inequality positively. Income inequality may decline with economic growth or change marginally with growth. On the other hand, though economic theory is inconclusive, empirical work points towards a negative impact of inequality on growth. High initial inequality in assets and income is likely to undermine growth and hence poverty reduction efforts. The implication of these relationships is that economic growth is necessary but not sufficient for poverty reduction. Poverty reduction requires economies to address inequality and economic structures - in addition to sustaining high levels of economic growth (Wanbugu and Munga, 2009).

1.2 The Incidence and Dimension of Poverty in Nigeria

Poverty is defined today as a state of long-term deprivation of well-being, a situation considered inadequate for decent living. There are however, a number of debates on how well-being should be measured and what indicators should be used. There are two broad approaches to defining well-being. These are the *welfarist* approach and the *non-welfarist*

approaches. The former defines well-being in terms of the level of utility attained by an individual. The approach attaches importance to the individual's perception of what is useful to him or her (Ravallion, 1995). The latter conceptualises well-being independently of the individual's perception of it. The approach relies on what planners consider desirable from a social point of view (Coast, 2004)

Among the various dimensions of well-being considered in the literature, a distinction could be made between those approaches which focus on living standards and those which focus on the rights, opportunities and capabilities of individuals. The former are frequently used by economists who generally emphasise the real consumption of goods and services. The latter favours a broader social vision and emphasises the *rights* and *opportunities* and *capabilities* of individuals in terms of their access to resources and potential consumption (Shimeles and Thoenen 2005) The latter dimension has its root in the view that well-being may not be determined by actual consumption alone but also by *opportunities* for consumption, for which income may be a measure. Opportunities for consumption for the poor would arise from having access to remunerative employment opportunities, which could be from wage or self-employment. This is necessarily so since the main asset owned by the poor is human capital. The human capital could be utilised directly through access to wage employment or through access to credit which could be used to create self-employment. Thus, given employment opportunities, a major source of poverty is removed or at least substantially weakened. Table 1 shows the poverty profile for Nigeria between 1980 and 2004.

Table 1 Incidence of Poverty in Nigeria 1980-2004

	Poverty level (%)		Population in Poverty (million)		Estimated total population (million)
	Total poor	Core poor	Total poor	Core poor	
1980	**27.2**	**6.2**	**17.7**	**4.0**	**65.0**
1985	**46.3**	**12.1**	**34.7**	**9.1**	**75.0**
1992	**42.7**	**13.9**	**39.2**	**12.7**	**91.5**
1996	**65.6**	**29.3**	**67.1**	**30.0**	**102.5**
2004	**54.4**	**22.0**	**68.7**	**27.8**	**126.3**

Sources: FOS (1999), Poverty Profile for Nigeria, 1980-96 Lagos, and NBS (2005) Poverty Profile for Nigeria, Abuja.

As shown in Table 1, the total poor rose from 27.2 per cent in 1980 to 65.6 per cent in 1996, an increase of 141.2 per cent. Over the same period, percentage of population in core poor category rose from 6.2 to 29.3 per cent, an increase of 380 per cent. However, between 1996 and 2004, total poor declined by 11.2 to 54.4 per cent while the core poor declined by 7.2 to 22 per cent. From the Table, it is also observed that despite the decline in the proportion of the population in poverty between 1996 and 2004, in absolute terms, the population in poverty rose from 67.1 to 68.7 million while those in core poverty declined by 2.2 million. As earlier stated by World Bank (2001), 70.2 per cent of Nigerians live on less than $1 per day. The fact that over 50 per cent of total population of Nigeria are poor should be of concern to policymakers (Aigbokhan, 2008).

The incidence of poverty responds to changes in economic growth. How receptive poverty is to economic growth depends on the initial level of income inequality and how this changes with economic growth. In recent years, the concept of pro-poor growth was introduced to provide greater insight to the relationship between economic growth, poverty and income inequality. Assessing whether growth is pro-poor requires knowledge of the distributional changes in income and the extent to which this has impacted the welfare of the poor (World Bank, 2006).

One view is that the poor may benefit from economic growth only indirectly and hence, the proportional benefits of growth going to the poor could be less than those accruing to the non-poor. In other words, the positive effects of growth on the poor tend to be offset by rising inequality emerging, as suggested by Kuznets (1955), in the process of economic growth in the initial stages. However, if economic growth is accompanied by a decline in inequality, the poor will benefit more than the non-poor a situation described in literature as pro-poor growth (Kakwani *et al* 2000, Kakwani and Pernia 2000**).** In Nigeria, the contribution of agriculture to natural development has waned considerably. The sector is yet to regain central role in the economy. In the 1960s and 1970s, Nigeria was a major exporter of agricultural commodities such as cocoa, groundnut and cotton. At that time, agricultural exports accounted for over 70 per cent of both total export earnings and proportion of GDP, making the country self-sufficient in food production. By 1996, the contribution of the sector was only 30 per cent of GDP, and about two per cent of foreign exchange earnings. In fact, as far back as 1976, Nigeria had become a net importer of food items, signalling the emergence of domestic food shortages. This development is not unconnected with the increase in oil

output and prices beginning from the first half of the 1970s, government macro economic policies which did not favour agriculture, including urban-biased infrastructural development, and inconsistent foreign exchange policies.

In the decades following Nigerian independence, series of palliative measures and programmes introduced to boost employment include the National Directorate of Employment (NDE) and Mass Agricultural Projects (MAP) in seven states of the Federation in 1993. Also, the Family Economic Advancement Programmes (FEAP) was introduced in 1997 to empower locally-based producers of goods and services and potential entrepreneurs in the cottage industries through the provision of loans, training, and the acquisition of skills. These programmes however did not achieve desired objectives due to lack of commitment and inconsistency. Disturbingly, based on the voluminous human, materials and financial resources expended on agriculture in the last 40 years, the country ought to have done much better to address the fight against the mysteries of poverty, hunger, malnutrition and ill-health (Okuneye, 2002).

Evidences abound to show that poverty and income inequalities are on the increase. For instance, results of the 1996/97 *National Consumer Survey* show that about 56 per cent of Nigerians live below the poverty line. In 1985 about 43 per cent were below the figure at 34.1 per cent at 1985 prices. These statistics indicate a worsening poverty situation in the country and a cause for concern (Okunmadewa, 1999). This in part explains the overriding target endorsed at the recent United Nations Millennium Summit by virtually all world leaders to reduce the incidence of poverty in developing countries from 30 per cent to 15 per cent between 1990 and 2015.

Aigbokhan (2000), for example, revealed there was evidence of increased poverty, inequality and polarisation in distribution during the 12 years covered by his study. Poverty was found to be more pronounced among male-headed households and in rural areas and the northern geographical zones. Positive real growth was also reported throughout the period studied, yet poverty and inequality worsened showing that the implementation of Structural Adjustment Programme (SAP) further worsened the living conditions of many Nigerians especially the poor, who were the most vulnerable group (Ogwumike, 2002).

Evidences from literature also pointed to the increasing level of inequality in developing countries over the last two decades (Addison and Cornia, 2001, Kanbur and Lustig, 1999). In Nigeria, the increasing level of income inequality is a cause for concern. For example, Oyekale, Adeoti and Oyekale (2006) found the overall Gini index for Nigeria to be 0.580. In sectoral sense, the study finds income inequality to be higher in rural areas when

compared to urban areas with 0.5278 and that employment income increased income inequality while agricultural income decreased it. On the contrary however, Awoyemi and Adeoti (2004) observe that agricultural income increased inequality while wage and self-employment incomes were decreasing it.

Variations in the level of income obtained by people in the rural areas is on the increase which could be linked to the growing dimensions of poverty even among the rural households, as a high level of income inequality produced an unfavourable environment for economic growth and development (Oluwatayo, 2008). It is also widely believed that majority of the people in Sub-Sahara Africa (SSA) live in rural areas. These rural communities are mainly agrarian with majority of them cultivating just small pieces of land on which they grow crops hardly sufficient to feed themselves let alone sell in order to generate income. They therefore live on small and meagre income when compared to urban dwellers who earn more than rural dwellers due to their higher level of education. Usually, people in the urban areas invest their time and money to acquire skills and hence earn higher income. The search for better conditions of living has therefore pushed many rural dwellers to abandon agricultural production activities and migrate to urban areas in search of the proverbial pot of gold or greener pastures because they feel the urban areas hold more opportunities for them than the rural areas (Udo-Aka, 1975). The influx of rural dwellers into the urban areas resulted in overpopulation and over-taxing of the amenities available in the urban areas (Oyekale et al, 2006).

In recent years, many smallholder farmers around the world have seen little improvement in their welfare because agricultural productivity has stagnated, prices of basic necessities are high and input costs have increased faster than revenues while production and market risks remain high. Most farmers in the tropics are not insured and operate in an environment of high uncertainty. Economic crisis and reform have also adversely affected both rural and urban African populations including Nigeria. Small farmers' production has been negatively affected by the cost of agricultural inputs and consumer goods rising faster than the prices of agricultural produce. This cost–price squeeze has created a high-risk environment which makes it difficult for small farmers to compete in domestic and international markets (Bah, Cissé, Diyamett, Diallo, Lerise, Okali , Okpara, Olawoye, and Tacoli, 2003; Bigsten and Shimeles, 2004).

It has been recognised that income inequality matters when it comes to making progress in poverty reduction. Little progress can be made in poverty reduction when inequality is high and rising (Addison and Cornia, 2001). This however, is in contrast to

earlier theories of development which suggested that inequality is good for growth and, therefore, for poverty reduction through growth. This thus calls for the role of inequality in the growth and poverty reduction process.

Nigeria is the largest economy in the West African sub- region, third largest economy in Africa (behind South Africa and Egypt) and on track to become one of the top thirty economies in the world in the early part of 2011. In the last two decades however, little has been achieved in alleviating poverty despite the massive efforts made and the many programmes put in place for that purpose. These have been largely traced to the adverse macroeconomic performance of the economy that was largely dictated by the effects of negative economic shocks and the adjustment reforms that were limited in response to these shocks. This was mainly because a sharp increase in population growth has not enabled Nigeria to realise large reductions in the number of poor people (National Policy on Poverty Eradication Draft, 2000). Poverty reduction strategies embarked upon by the government are usually operational at the capital cities while reports from rural communities usually showed that the measures are yet to reach them (Talabi, Kazanka and Dada, 2002). The reports of most developed countries show that their policies and strategies generally focus on unemployment and income generation to tackle poverty while developing countries focus on the agricultural sector as a base for promoting sustainable and equitable economic and social development as well as for reducing poverty and undernutrition. Taking into account their experiences, many countries have stressed the need for an integrated and comprehensive approach to combat poverty and insecurity.

1.3 Economic Growth Models

1.3.1 Kuznets Hypothesis

Kuznets (1955) explained how income inequality tends to change in the course of countries' economic growth and formulated the famous hypothesis that inequality tends to increase in the early stages of economic growth, stabilises for some time, then decreases in the later stages, producing what has come to be called the "Kuznets curve" or the "inverted-U curve". Kuznets' work had two important methodological influences. First, because he focused his analysis of income distribution on inequality as opposed to poverty, many development economists followed his lead, and it was not until 20 years after his original work that poverty moved to centre stage in the development economics field. Second, Kuznets' measurement of inequality was on the basis of particular inequality measures. In his case, the income shares of particular percentile groups in the population are opposed to more robust Lorenz curve comparisons (Fields, 1998).

Kuznets' hypothesis can be expressed as follows: When a new and more productive industry is introduced into a mature (or stagnant) economy (which may be an agricultural economy or an industrial one), the income gap will widen because of the gap between the new and old industries. However, when the economy moves towards a new equilibrium through a shift of resource allocation, the income gap will become narrow. Kuznets (1955, 1963) undertook research to find the determinants of the long run levels and trends in income inequality and the relationship between economic growth and income inequality. He postulated that inequality in income distribution worsened initially when economic development took off and then improved in the mature stage of industrialisation. This hypothesis is now popularly known as "inverted U-shaped pattern of income inequality" with inequality first increasing then decreasing with economic development. This hypothesis assumes that the economy consists of a low mean income and low inequality in the rural agricultural sector and a high mean income with high inequality in the urban industrial sector. It also assumes that migration occurs from the rural to the urban sector, which increases aggregate inequality. In explaining his hypothesis, Kuznets emphasises the structural change that occurs in the course of economic development. As an economy progresses the importance of industry tends to expand, shifting from the primary agricultural sector to the modern industrial sector that includes manufacturing and services. During this economic transition, labour productivity in the modern sector is higher than in the agricultural sector so, the *per capita* income of the modern sector is also expected to be higher. As a result, inequality between the two sectors increases at the initial stages of economic development and later declines. But the surplus labor model of Lewis (1954) also had implications that inequality would initially increase, as labor started to move from the low income traditional sector to the high income modern sector. Lewis (1983) once again emphasised why development and distribution might conflict-at least in the short run.

1.3.2 Neoclassical Growth Theory

The orthodox neoclassical growth theory by Solow (1957, 1994) made a controversial prediction on the convergence of *per capita* income across countries after controlling for factors such as savings rates and population growth. This conditional convergence hypothesis suggested that a country that initially has a low level of *per capita* income grows faster because it has less *per capita* capital relative to the steady state level and thus, a high marginal return to capital and a high rate of *per capita* growth. This hypothesis can explain

quite considerably the differences in *per capita* incomes across countries through variations in the savings rates and population growth.

However, recent empirical evidence suggested that factors such as endogenous technical progress, human capital accumulation, increasing returns to research and development (R&D), and government policies might have a stronger and better explanatory power in determining the variation in *per capita* income across countries (Barro and Sala-I-Martin 1995). These factors are the central themes of the endogenous growth theories established on the basis of neoclassical economics.

1.3.3 The New Growth Theories

The New Growth Theories (NGTs) takes into account positive externalities stemming from private efforts on R&D which improves the stock of knowledge in the economy as a whole (Roemer 1986, 1994). Unlike the neoclassical theory, technology is incorporated as an endogenous variable in the modern growth theory. In the NGT economic world, longrun economic growth can be achieved through increasing returns to scale at the level of society, with these returns coming from investment in R&D at the firm level. Overall, R&D contributions to the total stock of technology or knowledge will give rise to a higher growth rate. This in turn raises an important policy implication in favour of free international trade across nations, which may encourage R&D across countries. It further implies that investment in R&D can make labour more mobile across countries. Another crucial source of economic growth that is highlighted by the NGT is skills and knowledge of the labour force. These skills and knowledge enhance the productivity of factors of production through activities such as education and on-the- job training. Barro (1989), Lucas (1988), and Roemer (1990) argued that investment in human capital leads to increase in efficiency of labour, which in turn results in output growth. Skilled labour has positive effects on the productivity of both capital and labor. The NGT, following from the Solow model, argued that investment in human capital, generated from savings, increaseed the future market value of labour. The accumulation of human capital through education and on-the-job training helps to avoid physical capital from diminishing its returns, and makes possible the continuing growth of an economy. For instance, the rapid growth of the economy of Republic of Korea (now Korea) is due largely to the nation's high level of education. As argued by Young (1995) and Nelson and Pack (1999), coupled with factor accumulations in physical capital and labour force, an increase in human capital through improved educational level accounted for the fast economic growth experienced by Korea. The proportion of the Korean workforce with

secondary education has tripled between the mid-1960s and mid-1990s. This high level of education has enabled the labour force to absorb rapid changes in technology. Moreover, education has played a pivotal role in improving productivity in agriculture and industry within the Korean economy. In the framework of NGT, government policies are also important in determining economic growth in the long run. A change in the tax structure that makes savings more attractive may promote incentives to invest in education or training which will have large and sustained effects on the growth rate of an economy as a whole through the increased efficiency of factors of production. Well-established intellectual property rights encourage research and development within the economy which will speed up economic growth through the spillover effects of R&D on the overall stock of knowledge. Moreover, through open market policies such as deregulation of exports and financial markets, the mobility of factors of production across countries acts to strengthen economic growth.

Endogenous growth theories attempt to explain the non-convergence of *per capita* income levels between developing and developed countries in terms of the allocation of resources and the amount of resources devoted to R&D (Temple, 1999). The new theories explore possible determinants of long run growth, with emphasis on the roles of technology, international free trade, human capital, returns to scale, externalities, and so forth. Further, the new growth theory offers the important insight that economic institutions and government policies play crucial roles in determining long run growth. Economic growth is closely interrelated and intertwined with inequality and poverty. The interrelationship between the three phenomena reflects the pattern of growth which can differ from country to country. If recognizing the diversity of individual country experiences, it may still be possible to make some general observations about the relationship between growth, inequality and poverty.

1.4 Redistributive Policies in Nigeria

The major challenges for Nigerian development planning lie in the transmission mechanisms for translating improved macro economic performance into improved quality of life for the majority of Nigerians. The major indices for measuring the quality of life, or living standards, relate to poverty, employment, human security and freedom, education, health, access to water and sanitation, amongst others (Diejomaoh, 2008)

1.4.1 Fiscal Policy

Fiscal policy instruments included government budgetary and tax measures.

Budgetary measures:

In 1982, the government introduced an economic stabilisation program. Following this, in 1985, the government passed a National Economic Emergency Decree. With this decree, in the subsequent 1986 budget, measures were taken to reduce wages and salaries, remove subsidies on petroleum, suspend non-essential projects and ban importation of some commodities especially food. In 1986, SAP was introduced with the main objective of removing perceived distortions, which for many years had prevented the economy from attaining a sustained, self-reliant growth and development.

Tax measures:

Prior to structural adjustment, government tax policy was characterised by generous tax incentives for investors in agriculture. The tax policy focussed on accelerated depreciation allowances on agricultural capital investment. This was with the aim of reducing taxable income and income tax relief on incomes from new agricultural enterprises.

During the structural adjustment, tax policy that focussed on agriculture witnessed significant changes when a five year tax free period on profits earned by private companies that engage in agricultural production and agro allied processing was established. In 1986, implicit taxation on agricultural exports was removed when Commodity Marketing Boards and their price control activities on agricultural commodities were abolished.

In 1993, a value- added tax (VAT) was introduced at the rate of 5 per cent for ten categories of goods excluding basic food items, and twenty-three services. The base and coverage of VAT were later broadened, but tractors, ploughs, agricultural equipments and implements as well as locally produced fertilizer and agricultural chemicals were exempted from VAT in 1997. Abolition of VAT on these agricultural input sales remained a practice.

In order to further encourage agricultural production, through reduction in cost of production, investors in agricultural sector were granted tax relief in 2004. In 2004, any agro-allied industry that attained a minimum local raw material use of 70 per cent received 30 per cent tax concession for five years. The tax relief covers a non-renewable period of five years for pioneer industries and seven years for industries in economically disadvantaged areas. The investors in the agricultural sector enjoyed tax relief on research and development, in

addition to capital allowance, tax free dividend for shareholders, rural investment allowance and exemption from excise duty.

Although the government in recent years has moved towards a low tax regime, the current rates, both corporate and personal, are still relatively too high to promote compliance and attract investment. The tax administration is weak and there is still a lot of evasion. There is also corruption in tax administration and at the ports. Refunds of taxes as well as duty draw-back administration are inefficient. Inadequate resources have been allocated to the maintenance of existing assets while a lot is wasted on capital projects, often abandoned or inefficiently maintained.

Policy on Agriculture:

From the early 1980s to the inception of SAP in 1986, it became obvious that the agricultural sector could not keep up with domestic demands for food and raw materials. In addition to creating the Directorate for Foods, Roads, and Rural Infrastructure (DFRRI) in 1986, the government developed an agricultural policy as a part of a sectoral perspective plan up to the year 2005. The perspective plan stressed the introduction of financial policy measures to improve credit allocation to the agricultural sector, and in pursuance of the objective, new financial institutions were established including Community Banks and the Peoples Bank of Nigeria. The removal of price distortions under the SAP, however, probably had the greatest responsibility for the revival of agricultural production after 1986.

In attempting to correct 'government failures' in the agricultural sector, SAP policies and measures paid less attention than was perhaps appropriate to the possibility of market failures. Thus although SAP greatly reduced the output price distortions facing Nigerian farmers, they also removed government subsidies to the sector which may have been justifiable as a means of encouraging the adoption and diffusion of yield enhancing technologies such as improved seed varieties.

Policy on Employment

To enhance job opportunities in the country, the Nigerian Federal Executive Council (FEC) in year 2000 approved a new national employment policy. The new policy aimed to create more jobs and give full play to the current workforce. The policy, worked out by the Ministry of Labor and Productivity, also encouraged individuals and groups to create their own jobs, provide opportunity for continued training and create social work environment that is gender sensitive.

In collaboration with IDA, the Nigerian Government launched an Employment and Growth Study in 2008 to assess the impact of this strong growth performance on employment, and then develop a growth strategy that would help sustain and further accelerate Nigeria's job creation and growth. The new policy also seeks to endorse strategies for job promotion. They include promotion of micro small-scale sector jobs, inducement of more employment in the agricultural sector, promotion of labor-intensive businesses, linking education and training to labor market requirements and strengthening labor market information.

Policy on Housing

In Nigeria, though housing provision by the government commenced before the country got her political independence from Great Britain on October 1, 1960, the housing problem in Nigeria still remains intractable as many rural and urban populations in the country do not have access to decent, safe, and affordable housing. The housing delivery strategy taken by government in Nigeria over the years still reveals that Nigeria's housing policies and programs are rarely implemented or haphazardly implemented. Housing (adequate shelter) is recognized world-wide as one of the basic necessities of life and a pre-requisite to survival of man (Onibokun, 1983; United Nations, 1992; Salau, 1990). A house is a place which provides shelter, refuge, comfort, security, and dignity. The housing industry can be a stimulus to national economy (Onibokun, 1983). In Nigeria, the major steps taken, so far, towards solving the housing crisis in the country include:

(i) The establishment, in 1928, of the Lagos Executive Development Board (LEDB). The Board was empowered to carry out slum clearance, land reclamation, and the development of residential and industrial estates.

(ii) The setting up of Nigerian Building Society (NBS) in 1956 to provide housing loans to both civil servants and the Nigerian public.

(iii) The creation of the National Site and Services Scheme (NSSS) in 1986 to provide land with essential infrastructural facilities, such as roads, drainage and sewage system, water supply, and electricity for housing. The current effort of the Nigerian government on housing include:

(iv) The creation of the Ministry of Housing and Urban Development in June 2003.

(v) The review of the mandate given to the Federal Housing Authority (FHA) to include provisions of the National Social Housing as part of the strategy towards meeting the

Millennium Development Goal. The authority also plans to facilitate the provision of two million housing units within the next four years.

(vi) Others are the formulation of the National Housing Policy (NHP) in 1984, the establishment of the Infrastructural Development Fund (IDF) in 1985, and the Urban Development Bank (UDB) in 1992 (Federal Republic of Nigeria, 1997, Ademiluyi, 2010).

Realizing that the enormous public sector efforts have not effectively addressed an expanding housing deficit and escalating construction costs, and that such efforts must be substantially collaborative with the private sector, government decided to establish a framework within which such collaboration can effectively address the housing problem. This was articulated in the National Housing Policy of 1988. The policy attempted to create a new housing finance system, encourage the linkage of the housing sector to the capital market, establish a National Housing Fund, and expand Private Sector role in the housing delivery system. The most significant differences between the new policy and the previous ones are firstly, that housing is now seen in context of the overall national development. Previous policies had tended to regard housing as a social service and a natural fall-out of the national economic development. Secondly, the policy has identified the fact that different households both within and between income groups tend to have different demand for housing. This is evident from the ultimate goal of the policy which is, "to ensure that all Nigerians own or have access to decent housing accommodation at affordable cost by the 2000 AD". Thirdly, the focus of the policy was to remove all barriers to the supply of housing and to provide incentives to all parties involved (governments, private sector and individuals) in the housing delivery system. The new housing policy has established a two-tier housing finance structure, with Federal Mortgage Bank of Nigeria (FMBN) as an apex institution and a decentralized network of Primary Mortgage Market institutions such as building societies, housing co-operatives, home savings and loans associations. This structure aims to streamline processes and organizational relationships within the housing finance system and encourage expansion in private initiative.

Policy on education

The National Policy on Education for Nigeria became necessary to avoid the previous half-measured educational policies, administration and control which was a hallmark of the missionary and regional eras of education in the country. The policy is meant to put in clear

perspective the educational jurisdiction of the Federal Government, including that of the State and Local Governments. The document being the first after Nigeria's independence (enacted in 1977, but revised in 1981, 1989, 1998 and 2004), is meant to have universal effect throughout the federation. This can be seen from its content that is in its philosophical anchorage for Education' in Nigeria. UNESCO's recent cooperation with Nigeria in the education sector has been mainly guided by the *Note of Cooperation*, agreed upon between President Obasanjo and the Director-General of UNESCO in April 2000. Since then, UNESCO supported the Nigeria's education reform, particularly through the conduct of the Education Sector Analysis (ESA). The Nigerian ESA resulted in a set of comprehensive sector diagnoses and information for an evidence-based planning and policy formulation, as well as an enhanced national capacity for strategic sector development planning. UNESCO-supported ESA constituted an important groundwork for the harmonization of the planning process and the development of 10-Year National and Federal Education Plans, which were being put in place and expected to trigger a harmonized process for the formulation of education plans across 36 states and the Federal Capital City. The 10-year plan, seen within the Vision 2020 for education and instigated by President Obasanjo and the then Minister of Education, provided a framework for the future development of education in support of national aspiration to position Nigeria among the 20 top world economies by the year 2020. In this context, the Federal Ministry of Education (FME) initiated a comprehensive and far-reaching reform in the second half of 2006, known by the acronym "WE CAN" (which stands for "We Educate for Character, Aptitude and our NEEDS."

This reform aimed at reorganising the FME in order to restore its roles and responsibilities in: (i) policy formulation and coordination of the nation's educational sector; (ii) standards setting, monitoring and quality assurance for the education sector as a whole, and; (iii) delivery of tertiary education through federal institutions. The reform process involved most stakeholders. Achievements were results, one can mention the following: (i) the reduction of the number of parastatals and the rationalisation and harmonisation of their work on education; (ii) the restructuring of the federal financing of education; (iii) a stronger emphasis on in-service teacher training; (iv) improvement in the effectiveness of the inspection system and; (v) strengthening of public-private partnership in education. Plans were underway to ease pressure on tertiary education and to fight against youth unemployment through the revival of technical and vocational education and training (TVET). A particular focus was put on entrepreneurship and skill training, involvement of

industries, and the realignment of curricula to meet emerging needs of a global economy and knowledge society.

Education is free but not compulsory at any level. The formal education system is as follows: 6 years of primary school; 3 years of junior secondary school; 3 years of senior secondary school, and 4 years of university education leading to a bachelor's level degree in most fields. Education is administered by three branches of government. Primary education is under the control of local governments. Secondary schools fall under the jurisdiction of the state governments except for the "Unity Schools" which are administered by the federal government. Higher education is administered by both the federal and state governments. The school year extends over ten months, divided into three terms of ten to twelve weeks each at the pre-primary, primary, junior and senior secondary levels.

Policy on health

The Government of Nigeria through its Federal Ministry of Health on Thursday, the 16th of December 2010 officially launched the National Strategic Health Development Plan (2010-2015), as well as signed the Health Compact with Development Partners at the Transcorp Hilton Hotel in Abuja. The NSHDP document was developed after series of consultations and engagement with stakeholders across Nigeria's 36 States and the Directorate of Health Planning, Research and Statistics served as the coordinating secretariat. Technical and Funding support were provided by bilateral and multilateral agencies operating in Nigeria as well as the International Health Partners Plus (IHP+) which helped in developing the Health Compact.

The NSHDP which is a successor to the previous Health Sector Reform Program (2003-2007) aligns with health sector component of the newly developed Nigeria's Vision 20:2020 Policy document. The document which is duly costed incorporates a clearly defined Results Framework with which to measure performance based on the outlined 8 priority areas to be given attention;

1. Leadership and Governance for Health
2. Health Services Delivery
3. Human Resources for Health
4. Financing for Health

5. National Health Information System
6. Community Participation and Ownership
7. Partnerships for Health
8. Research for Health

1.4.2 Economic Growth Strategies

Various strategies have been advocated in the literature to address poverty challenges. Prominent among these are economic growth, basic needs, rural development, targeting, and employment-oriented approaches. Economic growth approach, which goes back to the 1950s and 1960s development policy literature, emphasised growth as central to any policy on poverty reduction. Studies have shown that growth accounts for income growth for the poor in many countries. However, because of the reliance on the *trickle down* effect and on the pace of growth which may be driven by capital-intensive production process, the traditional growth approach has been found to produce less progress in poverty reduction. This has, therefore, led to a shift in emphasis from the "pace of growth" to the "structure of growth" strategy. The main objective of the basic needs approach is, the need to satisfy the essential requirements for minimum standard of living. The approach is concerned with first improving the income earning opportunities of the poor, second, providing public services that reach the poor, third, the flow of goods and services to meet the needs of all members of households and fourth, the participation of the poor in the ways in which their needs are met. Rural development approach is derived from the perspective that the majority of the poor in developing countries live in the rural areas. The approach, therefore, emphasises the need to focus development efforts on the sector. Though there are variants to this approach, the most prominent is perhaps the integrated rural development variant. This variant recognises that poverty is multi-dimensional and, therefore, requires a multi-pronged approach. The approach seeks to develop all sectors of the rural economy and link them up effectively. The components of the approach include infrastructure development, provision of social services and employment and income-generating opportunities to the rural dwellers in general and the rural poor in particular. The targeting approach requires the directing of poverty alleviation programmes to specific groups within the country. Components of the approach include micro credit, school meal, medical care, safety nets and public works programmes. The approach requires proper identification of the target groups for effective targeting. The

employment- oriented approach emphasises employment promotion as the principal means of spreading the benefits of economic development more evenly throughout the economy. The *pace of growth* objective was modified so as to maximise not only output but also the rate of labour absorption. This is to be complemented with credit facilities to integrate the trained unemployed persons into the labour market on a sustainable basis. Two important questions to be asked are: How sustainable is the growth performance? And how far has growth been pro-poor that is, poverty reducing? It is noteworthy to state at this point that the sectoral composition of growth is important, to the extent that different sectors may have different factor intensities. If growth occurs in sectors which require skills and capital that the poor do not possess, although the economy may grow, it may have little impact on poverty reduction (Aigbokhan, 2008).

In summary, it is seen that employment generation is common to these various strategies. Rural development, structure of growth approach, basic needs approach each has components which focus on creating employment opportunities for the poor. These various strategies have been adopted by Government of Nigeria over the years. Poverty alleviation has been an integral component of the country's development plans.

Specialised agencies were established to promote the objective of poverty reduction, which include Agricultural Development Programmes, Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB), National Agricultural Insurance Scheme, National Directorate of Employment, National Primary Health Care Agency, Peoples Bank, Urban Mass Transit, mass education through Universal Basic Education (UBE), Rural Electrification Schemes (RES), Strategic Grain Reserve, National Agricultural Land Development Agency, National Directorate for Food, Roads and Rural Infrastructure (DFRRI) and National Economic Reconstruction Fund. Others are Better Life Programme, and Family Empowerment and Advancement Programme. In 1994, the Poverty Alleviation Programme Development Committee was established which produced the Community Action Programme for Poverty Alleviation (CAPPA). In 1999, the Poverty Alleviation Programme (PAP) was established, with the objective of creating 200,000 jobs annually. The programme, however, failed to have any appreciable impact on poverty reduction in the country as beneficiaries are not the rural poor (Aigbokhan, 2008; and Ogwumike, 2002). It was replaced in 2003 by the National Poverty Eradication Programme (NAPEP), with five main programme areas. It is observed that four of the programmes have employment components. It was estimated that since inception, NAPEP has been able to train 130,000 youths and engaged 216, 000 persons who are attached to various establishments (Olaniyan

and Awoyemi, 2006). However, like the PAP, beneficiaries are largely non-poor. Up till June 2003, there was no clear economic strategy in the country and monetary policy was totally ineffective to check expansionary fiscal operations. Weak institutions and legal environment affected the benefits that would have accrued from oil earnings which had started to firm up (Adedipe, 2004). The entire scenario however changed in 2004, with the formal announcement and presentation of the Federal Government's economic agenda, tagged the National Economic Empowerment and Development Strategy (NEEDS). It was launched along with State Economic Empowerment Development Strategy (SEEDS) .NEEDS is a medium-term strategy that seeks to implement series of reforms that would lay a solid foundation for a diversified Nigerian economy by 2007. It set specific goals in major growth indices such as wealth creation, employment generation, institutional reforms and social charter. The conceptual issues on NEEDS/SEEDS are based on four goals; Poverty reduction, wealth creation, employment generation and value reorientation. The framework for actualising the goals of NEEDS is anchored on three pillars; empowering people and improving social delivery, fostering private sector-led growth through creating the appropriate enabling environment; and enhancing the efficiency and effectiveness of government by changing the way government does its work (FGN, 2004). The Yar'adua administration launched the seven point agenda. One of the seven-point development agenda was to fight poverty and diseases. Like earlier reform packages, the strategy considered economic growth as crucial to poverty reduction. The major issues of the seven point agenda include:

Power and Energy: The infrastructural reforms in this critical sector through the development of sufficient and adequate power supply will be to ensure Nigeria's ability to develop as a modern economy and an industrial nation by the year 2015.

Food Security – This reform is primarily agrarian based. The emphasis on the development of modern technology, research, financial injection into research, production and development of agricultural inputs will revolutionalise the agricultural sector leading to a five to ten fold increase in yield and production. This will result in massive domestic and commercial outputs and technological knowledge transfer to farmers.

Wealth Creation – By virtue of its reliance on revenue from non-renewal oil, Nigeria has to develop industrially. This reform is focused on wealth creation through diversified production especially in the agricultural and solid mineral sector. This requires Nigerians to choose to work, as hard work by all is required to achieve this reform.

Transport Sector – The transportation sector in Nigeria with its poor roads network is an inefficient means of mass transit of people and goods. With the goal of a modernised industrialised Nigeria, it is mandatory that Nigeria develops its transport sector. The government has already started this process by the ongoing rehabilitation and modernisation of the railway. While the reforms might take some time to take effect, it is a need that must be addressed

Land Reforms – While hundreds of billions of naira have been lost through unused government-owned landed asset, changes in the land laws and the emergence of land reforms will optimise Nigeria's growth through the release of land for commercialised farming and other large scale businesses by the private sector. The final result will ensure improvement and boost production and wealth creation initiatives.

Security – An unfriendly security climate precludes both external and internal investment into the nation. Thus, security will be seen not only as a constitutional requirement but also as a necessary infrastructure for the development of a modern Nigerian economy. With its particular needs, the Niger Delta and Boko Haram security issues will be the primary focus, marshalled not with physical policing or military security but through honest and accurate dialogue between the people and the Federal Government.

Education – The two-fold reforms in the educational sector will ensure the minimum acceptable international standards of education for all. With that achieved, a strategic educational development plan will ensure excellence in both the tutoring and learning of skills in science and technology by students who will be seen as the future innovators and industrialists of Nigeria. This reform will be achieved through massive injection into the education sector (Aluko, 2007).

This present Goodluck Jonathan administration has pledged to continue the economic reforms of the past government with emphasis on infrastructure improvement. Inadequate infrastructure is the main impediment to growth. The government is working toward developing stronger public-private partnership (PPP) for electricity and roads.

The efforts of the present Goodluck Jonathan administration is through the Transformation Agenda. It is planned for between 2011 and 2015, the duration of the present administration and is necessitated by the need to correct the flaws in the country's drive for development where there is absence of long-term perspective, and lack of continuity, consistency and commitment (3Cs) to agreed policies. The government believes that the culminating effect of these has been growth and development of the Nigerian economy without a concomitant improvement in the overall welfare of Nigerian citizens.

To the Jonathan administration, the disregard for these 3Cs has resulted in rising unemployment, inequality and poverty and it is therefore hard pressed to come with a holistic transformation of the Nigerian state with a strategy that gives cognizance to these 3Cs in the duration of the administration. The agenda is therefore based on a set of priority policies and programmes which, when implemented, would transform the Nigerian economy to meet the future needs of the people.

The inevitable conclusion from the foregoing is that in spite of the various programmes implemented to date, the incidence of poverty is still high and unemployment problem remains daunting. Given the poverty-unemployment nexus discussed earlier and the experience of other countries that broad-based growth holds much promise for poverty reduction through employment generation, it would appear that this may be the best option for Nigeria to adopt. Unlike in the past, focus should not be mainly on public work schemes and public sector agencies, given the limits of public works and institutional weaknesses of public agencies discussed in the next section, policy should shift to the promotion of private sector labour- intensive growth (Aigbokhan, 2008).

1.5: Statement of Research Problem

Like many other countries, Nigeria was historically a colony of Britain. This colonial experience influenced Nigeria to pattern her pursuance of economic growth both substantively and procedurally in line with the colonial legacy. For instance, Britain's national interest was not in the economic or industrial development of Nigeria but in the development of basic infrastructure (rail and road networks) to facilitate the evacuation of primary products and the distribution (in Nigeria) of manufactured goods imported from the metropolitan economy (Ikpeze, 1991). The colonial period was therefore dominated by export-led process which reflected the basic policy of linking the Nigerian economy to the British economy. The ten-year development plan, 1946 to 1956 was an integral part of the process. But this line of thinking resulted in most of the major economic crisis in the country – such as poverty and inequality. Thus, in the 1970s and 1980s, the preoccupation was with the growth of the economy and income as growth was seen as a prerequisite for improved welfare.

The government therefore introduced series of economic reform measures starting with the economic stabilisation measures of 1982, Economic Emergency Measures in 1985 and Structural Adjustment Programme (SAP) in 1986.The implementation of SAP was part of policy efforts by the government to tackle the problem of severe economic crisis which

worsened the lives of many Nigerians. Components of SAP include market- determined exchange and interest rates, liberalised financial sector, trade liberalisation, commercialisation and privatisation of a number of enterprises (Aigbokhan, 2008).

Rural income was reported to have benefited from SAP as major agricultural export producers of crops like cocoa, coffee and rubber, experienced growth in income following naira exchange rate devaluations but although growth reduced poverty, the distribution of income worsened between 1985 and 1992 (Obadan 1994; Canagarajah, Ngwafon and Thomas, 1997).

The redistributive policies and programmes put in place over the years such as, fiscal, education and health policies did not achieve the objectives as the targeted audience which are the rural farmers rarely benefited from the policies and programmes (Talabi, *et al*, 2002). For instance, the information from research rarely gets to the rural farmers as beneficiaries of information carried by the print and broadcasting media are in most cases, urban elite. Agricultural sector has also ceased to be an important contributor to foreign exchange earnings and its contribution to employment has declined. Some agricultural polices such as produce taxes were unfavourable to rural farmers as these taxes collected by the marketing boards were motivated by the revenue requirements of the government rather than the needs of agriculture. Also, health, education and housing sectors with several poverty reducing programmes failed to achieve the set objectives due to poor funding, lack of facilities and manpower (Ozowa, 1995; Egware, 1997; and Ukiwo, 2003).

Although a decline in poverty incidence from 65.6 per cent in 1999 to 54.4 per cent in 2004 has been reported by NBS (2005), poverty is still higher in the rural than the urban sector. For example *Human Development Report* (*2001*) revealed that the poorest 20 per cent in Nigeria receive only 4.4 per cent of aggregate household income but most striking, the richest 20 per cent receive as high as 57.3 per cent of the aggregate household income. Equally revealed by the same source, 51 per cent of the country's population do not have access to safe water, while about 59 per cent lack access to medical healthcare services.

The development literature in the 1990s was dominated by the view that growth is central to any strategy aimed at poverty reduction. Studies suggest that countries that made noticeable progress in poverty reduction were those that recorded fast and high growth rates (World Bank, 2000a; Dollar and Kraay, 2001). This view was modified to suggest that it is not growth *per se*, but the structure of growth that matters (Ravallion and Datt 1996; and Mellor, 1999).

Rural infrastructure in Nigeria has long been neglected, while investments in health, education and water supply have largely focused on the cities. As a result, the rural population has limited access to services such as schools and health centres, and about half of the population lack access to safe drinking water. Limited education opportunities and poor health perpetuate the poverty cycle. The neglect of rural infrastructure has also reduced the profitability of producing for the markets. Nigeria's rural road network is one of the least developed in SSA (IFAD, 2006). The poor tend to live in isolated villages that become virtually inaccessible during rainy seasons. During the periods of post –harvest marketable surplus, it is not always easy to reach the markets.

Limited accessibility has also cut off small scale farmers from sources of inputs, equipment and new technology. Crop yields are low because farmers lack these inputs. In particular, inadequate access to fertiliser is a real problem in many parts of the country where farmers have to cope with the diminishing soil fertility. The situation is aggravated by the fact that many farmers have access only to small parcels of land for cultivation.

As population continues to grow and with much pressure on diminishing resources, escalating environmental problems further threaten food production. Land degradation, as a result of extensive agriculture, deforestation and overgrazing, is already at an alarming level in many parts of Nigeria. Drought is a common phenomenon in the north, while in the south and southeast, erosion as a result of heavy rains, floods and oil pollution are major problems. Large parts of Nigeria's primary forests and the wildlife that they harbour are fast disappearing (IFAD, 2001; IFAD 2006). The aforementioned problems continue to aggravate poverty in different parts of the country.

Poverty and violence are often closely interconnected. Religious and ethnic tension continue to brew in different parts of the country, erupting into outbreaks of violence and leading in turn to a situation of escalating poverty and malnutrition.

In summary at this point, the general and specific findings in the study would attempt to draw out some of the main issues for policy purposes by asking the following questions:

i. To what extent has the economic growth in Nigeria contributed to income redistribution and poverty reduction?
ii. What is the contribution of different occupational groups in Nigeria to rural poverty?
iii. What is the growth and inequality elasticity of poverty during the research period ?

iv. What specific factors can explain temporal income growth differential over time across the country and what are the magnitudes of these factors' influences on income inequality?

1.6: Objectives of the study

The general objective of this study is to analyse temporal growth, income redistribution and rural poverty in Nigeria. Specifically the study intends to:

- estimate the contribution of growth and redistribution to rural poverty in Nigeria during the research period (1996 to 2004);
- decompose rural poverty by the key occupational groups in Nigeria;
- estimate growth and inequality elasticity of poverty in Nigeria;
- examine the key underlying factors influencing temporal growth differential within the research period.

1.7: Justification of the study

Since the 1980s, the poverty rate has been tending significantly downward in all regions of the world except in SSA, where Goal 1 seems difficult to be achieved (Fosu, 2008). In the last two decades in Nigeria, there has been little or no progress in alleviating poverty despite the massive effort made and investment into many programmes established for that purpose. For instance, Canagarajah, *et al*. (1997), reported increased level of poverty over the period spanning the 1980s and 1990s in Nigeria and inequality was established with an increase in the Gini coefficient from 38.1 per cent in 1985 to 44.9 per cent in 1992.

The choice of rural sector as the main focus of this study stems from the fact that majority of Nigerians live in rural areas and development of this sector holds promise in improving the general welfare of the country. In the rural areas, social services and infrastructure are limited or non-existent. Majority in such areas are poor and depend on agriculture for food and income. About 90 per cent of the country's food is produced by small scale farmers cultivating tiny plots of land who depend on rainfed rather than irrigation systems. Surveys show that across the country, 44 per cent male and 72 per cent female farmers cultivate less than one hectare per household. The poorest group eke subsistence living but often go short of food, particularly during the pre-harvest period (IFAD, 2006). A high proportion of rural people suffer from malnutrition and other malnutrition related diseases. Since independence, Nigeria has consistently fallen into the group of countries with

low level of human development as characterised by HDI coefficient of less than 0.5 (On a scale of 0 to 1). Nigeria also occupies 151st position among 174 countries on the HDI ranking (UNDP, 2000). The country's performance with regards to four key indicators-life expectancy, GNP per capita, gross primary school enrolment and access to safe water also shows Nigeria to be below expectation.

To the best of the knowledge of the author, there is no study in Nigeria which has looked into changes in poverty over a period of time or which has studied poverty changes based on public policies especially with the use of two data-points. This study hopes to fill the gap by investigating temporal changes in poverty with focus on rural population. The analysis is based on household level data (NCS and NLSS) collected by National Bureau of statistics (NBS). The analysis of poverty based on these survey data may not prove any causality between government development policies and changes in poverty but it can provide a hint on how growth and redistribution factors have contributed to the observed changes in poverty in Nigeria.

According to Litchfield (1999), studies on decomposition of income inequality are desirable for both arithmetic and analytical reasons. It can shed light on the structure and dynamics of income within different socio-economic groups in the economy. Estimating the contribution of growth and income redistribution to total inequality and understanding the link between socio-economic characteristics and total inequality can also be useful to economic policy analysts and designers of poverty reduction programmes. Studies on income inequality decomposition are very scanty in Nigeria. Given the general belief that poverty is more widespread and prevalent in rural than urban areas (IFAD, 2001), and that inequality is higher in rural than urban Nigeria (Oyekale, *et al*, 2006), it becomes appropriate to conduct an in-depth analysis of rural income inequality, with the aim of identifying which should be more emphasised (whether growth or redistribution of resources) the income sources that contribute more to overall inequality and suggesting ways of reducing rural income inequality generally.

This study differs from previous studies especially in terms of methodology for poverty decomposition. Other studies like Fields (1998), Liebradnt, Murray, Servas van der Berg and, Haroon Bhorat (2001), and in Nigeria Alayande (2003), Awoyemi (2004a) and Oyekale *et al* (2006) did not decompose inequality into exact results as most of them generated residuals which could lead to loss of lots of useful information. Also, studies on growth and inequality elasticities of poverty are still very scanty in Nigeria. For instance, Adams (2004) conducted growth and income elasticities of poverty on 60 developing

countries but Nigeria was not included, the non-inclusion of Nigeria points to a gap in knowledge on what has been happening to inequality in relation to growth and poverty reduction in the country. This study intends to add to the already existing body of knowledge by decomposing poverty into growth and redistribution components focusing on the rural sector and investigating the redistribution of income over time. Two different periods will be considered, the first is when there was no democratic rule in the country which coincides with the military era when the management of oil revenue and the macro economy was haphazard, translating into macro economic instability and the second (2004), is when democratic rule was already in place. This is in order to see whether the various equity motivated efforts of the Nigerian government has caused any meaningful improvement in the lives of Nigerians over a period of time or otherwise as regards growth in income and redistribution of wealth most especially among the rural population. This study will therefore provide a fresh look on these issues and give insight into the possible interventions which could address some of the existing problems.

1.8 Plan of study

This thesis is divided into five chapters. Chapter One is the introduction to the study. This features a brief background of economic growth and inequality in Nigeria. It also includes the research problem and objectives of the study. Chapter Two features the conceptual/theoretical framework of the study as well as literature review. In Chapter Three, the Methodology adopted in carrying out the study was discussed . These include description of the study area, sampling techniques, measurement of variables and analytical techniques. The results of the study were discussed in Chapter Four. These include socio-economic and demographic characteristics of the respondents, decomposition of poverty into growth and redistribution components, and decomposition of rural poverty by the key occupational groups in Nigeria. Others are ; estimation of growth and inequality elasticity of poverty in Nigeria and examining the key underlying factors influencing temporal growth differential within the research period.

In Chapter Five, the study was summarised and conclusion made; thereafter, recommendations were made.

CHAPTER TWO
THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1: The Poverty- Growth- Inequality Theory

Absolute poverty is defined with reference to a poverty line that has a fixed purchasing power determined so as to cover needs that are physically and socially essential. Setting absolute poverty reduction as the prime development goal is thus simply saying that a fundamental objective of development is to ensure that everybody satisfies his/her basic needs. The poverty line may be multi-dimensional, incorporating both an income poverty line for needs that can be met monetarily, and non-monetary lines for other needs. This absolute definition of poverty, in use in many countries, must be contrasted with a relative definition of poverty, where the poverty line is established not in terms of some well defined basic needs, but as a fixed proportion of some income standard in the population, for example the mean or median income(Bourguignon, 2003). What actually matters for the purpose of this study is that such a relative definition of poverty – sometimes referred to as 'relative deprivation' - becomes in some sense independent of growth. The absolute level of income and therefore a large part of the development process does not matter anymore with such a definition. Only relative incomes, or pure distributional features matter. Fixing the poverty line relative to average income can show rising poverty even when the standard of living of the poor has in fact risen. There is an increasing consensus among economists that relative deprivation matters, but there does not appear to be a consensus that individual welfare depends only on one's relative position, and not at all on absolute standard of living as determined by incomes (Bourguignon, 2003).

Once it is accepted that the reduction of absolute income poverty is a meaningful development goal, then a direct link may be established between development, growth and distribution. An arithmetic *identity* links the growth of the mean income in a given population with the change in distribution – or in 'relative' incomes - and the reduction of absolute poverty. In other words, poverty reduction in a given country and at a given point of time is fully determined by the rate of growth of the mean income of the population and the change in the distribution of income. As illustrated in Figure 2.1 with the "Poverty-Growth-Inequality (PGI) Triangle", a development strategy is thus fully determined by the rate of growth and distributional changes in the population. Formally, the relationships implicit behind the PGI triangle are less simple. For instance, the elasticity of poverty with respect to

growth for a constant distribution turns out not to be constant across countries with different development levels and distribution and across the various ways of measuring poverty. This also applies to the elasticity of poverty with respect to inequality indicators (Bourguignon, 2003).

The real challenge to establishing a development strategy for reducing poverty lies in the interactions between distribution and growth, and not in the relationship between poverty and growth on one hand and poverty and inequality on the other, which are essentially arithmetic. There is little controversy among economists that growth is essential for (income) poverty reduction under the assumption that the distribution of income remains more or less constant. In fact, much evidence points to this direction (Deininger-Squire 1996, Dollar and Kraay 2001, Ravallion 2001, Bourguignon 2003). Likewise, much evidence suggests that a worsening of the distribution tends to increase poverty. Yet, the real issue in establishing a development strategy is whether growth and distribution are independent of each other or are strongly inter-related. Is it the case for instance that faster growth tends to reduce inequality or on the contrary, to increase it? Could too much inequality in a given country act to slow or, to accelerate growth? On the distributional consequences of growth, several recently published microeconomic based case studies indicate clearly that the relationship is at once strong and complex.

The simple arithmetic of poverty, inequality and growth

According to Bourguignon (2003), change in the distribution of income can be decomposed into two effects. First, there is the effect of a proportional change in all incomes that leaves the distribution of relative income unchanged known as a *growth* effect. Second, there is the effect of a change in the distribution of relative incomes which, by definition, is independent of the mean known as a *distributional* effect.

He states further that the following definitions help to clarify these linkages:

- "Poverty" is measured by the absolute poverty headcount index that is the proportion of the population below a particular *poverty line* (1$ a day) as derived from household survey data.
- "Inequality" (or "distribution") refers to disparities in *relative income* across the whole population, that is, disparities in income after normalizing all observations by the population mean so as to make them independent of the scale of incomes.

- "Growth" is the percentage change in mean welfare level (for example income or consumption) in the household survey.

A change in poverty can then be shown to be a function of growth, distribution and the change in distribution. For sufficiently small changes in mean income and in the distribution, the preceding decomposition corresponds to an identity which expresses the change in poverty as a function of the growth in mean income and changes in the distribution of relative income.

Change in Poverty α F(growth, distribution, change in distribution)

A formal statement of that identity - the expression of function F( ) - is offered in Bourguignon (2003), under the assumption that the distribution function is log-normal—which is a standard approximation of empirical distributions in the applied literature. It is shown there that both the growth and the inequality elasticity of poverty are increasing functions of the level of development and decreasing functions of the degree of relative income inequality. It also shows how the decomposition identity may be applied to observed growth periods for which distribution data are available at the beginning and end of the period. This discussion shows clearly that both growth and inequality changes play a major role in generating changes in poverty. However, the impact of these phenomena will depend on the initial level of income and inequality.

2.2 Redistributive Reforms, Income Redistribution and Poverty Reduction

More egalitarian distribution of income and assets has been seen to have two conflicting effects on poverty. For any given level of average income, a more egalitarian distribution would generally mean less poverty—this is the positive effect. On the other hand, greater equality is believed to be detrimental to the growth of average income for such reasons as reduced savings and reduced incentive for wealth creation. Slow growth, in turn, would mean slow reduction of poverty operating through the growth-poverty nexus—this is the negative effect. The positive effect ensures less poverty today while the negative effect implies more poverty in future compared to what might have been if distribution had been less egalitarian today, consequently, pro-poor redistributive policies are seen to entail an inter temporal tradeoff of poverty in favour of the present at the expense of future. By and large, mainstream economic thinking has tended to frown at this tradeoff, implicitly making the judgment that the future loss in terms of slow reduction of poverty is often too high to

justify striving for less poverty today through redistribution of income and assets (Osmani, 2000).

Economic growth is largely determined by the accumulation of capital, human capital and knowledge usable in production (Adamu, 2004, Olaniyan and Bankole 2005). The incentives for such productive accumulation, hinge on the ability of individuals to appropriate privately the fruits of their efforts, which in turn crucially hinges on what tax and regulatory policies are adopted. In a society where distributional conflict is important, political decisions are likely to result in policies that allow less private appropriation and therefore less accumulation and less growth. But the growth rate also depends on political institutions, for it is through the political process that conflicting interests ultimately are aggregated into public policy decisions. Scarce resources are controlled or owned by personal interests and allocating them in one way or another modifies individual benefits. The allocation of scarce resources may thus reflect the way conflicts of interests are resolved at the pursuit of efficiency. It is difficult to think of economic issues without distributive consequences and it is equally difficult to imagine distributive problems without some allocational dimension. At a time of full employment and rapid growth, people may have justified the argument that those at the bottom would gain more from employment policies and the promotion of economic growth than from redistribution. Policy choices about privatisation, monetary union and the future of the Welfare State, all impinge on the distribution of income. It is difficult to think of an issue ranking high in the public economic debate without some strong distributive implications. Monetary policy, fiscal policy, taxes, prices, competition and regulation are all issues now often perceived as conflictual because of their strong redistributive content (Atkinson and Bourguignon, 2000).

With recent advances in understanding of the links between distribution and growth (Bourguignon, 2002) first, for any given rate of growth, the rate of poverty reduction may be faster in economies with higher initial level of equality. Second, contrary to conventional view, greater equality may actually be beneficial for growth. The two propositions together suggest that redistributive policies will ensure not only less poverty today but also a faster reduction of poverty in the future, because on one hand, average income would grow faster and on the other, the power of growth to reduce poverty will also improve. Redistributive policies need not, therefore, involve any inter-temporal tradeoff; they may in fact be regarded as growth strategies *par excellence*. The first proposition is in the nature of an empirical regularity, first noted by Ravallion (1997). Using high-quality distributional data for 23 developing countries at two points in time, he estimates what he calls the growth-elasticity of

poverty—the rate at which poverty declines in response to an increase in the rate of growth—and finds this elasticity to vary considerably with the initial distribution of income.

The virtue of equality is further strengthened by the second proposition which states that the rate of growth may itself be higher with higher initial equality. Over the last decade, a growing number of theoretical studies have explored the various channels through which greater equality in the distribution of income and assets could lead to a faster rate of growth. Four main channels have been identified, namely endogenous fiscal policy, capital formation under credit constraint, endogenous schooling and fertility decisions, as well as socio political instability (Alesina and Rodrick, 1994; Perotti, 1996; and Benabou, 1997). According to the endogenous fiscal policy theories, distribution of income determines government's choice of fiscal policy which in turn affects the rate of growth. Assuming the government wants to pursue a redistributive fiscal policy by imposing tax on capital income and redistributing the proceeds uniformly across the population. The government wants to choose as high a tax rate as possible in order to maximise the scope for redistribution but at the same time it wants to ensure that the chosen rate is not considered too high by majority of the people. Such a tax rate is found by applying the "median voter theorem". Since redistribution will take place at the expense of the rich, the richer a person is, the lower will be his/her preferred rate of tax. In general, an individual's preferred tax rate will vary negatively with his/her income. Given this pattern of preferences, the tax rate preferred by the person located in the middle of the income distribution—the so called median voter—will play a crucial role. The government will choose a tax rate that is marginally lower than the one preferred by the median voter, because that is the highest possible rate that will not be considered too high by the majority. The chosen tax rate will be lower for a more equal distribution of income, because for any given level of per capita income, a more equal distribution will imply higher income for the poorer half of the population and thus a lower tax rate preferred by the median voter. The lower tax rate in turn will entail less damage to incentives and hence faster growth.

The second group of theories also links equality with growth through capital accumulation (Caselli, 2006) but unlike the endogenous fiscal policy theories they focus on capital accumulation by the poor faced with a credit constraint. These theories have dealt with both human and physical capital. The underlying idea is simply that credit constraint prevents poor people from either acquiring physical capital or educating their children as much as they would have liked. A more equal distribution of income will then enable more of them to finance capital acquisition out of their own resources and hence promote faster accumulation of capital. On the whole, then, a more equal society will be able to accumulate

more capital and grow faster, other things remaining the same. The third group of theories draws the link between distribution and growth via people's decision to have children and to educate them. An equal distribution of income is supposed to affect the schooling and fertility decisions in a manner that would help to promote economic growth. To see how this link works, we first note that schooling and fertility decisions are usually intertwined. The decision to give more education to children usually goes with the decision to have fewer of them. This is known in the literature as the "quantity versus quality" tradeoff where people who want to improve the "quality" of children tend to reduce their quantity (Osmani, 2000).

Factors identified as having affected income distribution include the level of economic development attained, regional factors, size of government budget and the amount of it devoted to subsidies and transfers, phase of economic cycle, share of agricultural sector in total labour force as well as human and land resources endowment. Some evidence that high inequality reduces growth is also found. The channels through which inequality affect growth are found to be through reduction in secondary and tertiary education investment, reduction in political stability and increase in fertility rate. There is, however, no evidence that it affects private savings and investment or the size of government expenditure and taxation, contrary to what is contended in the theoretical literature (Odedokun and Round, 2004).

The relationship between growth, inequalities and poverty is a recurrent theme of investigation in development economics. The debate has historically turned around the famous Kuznets hypothesis the possibility of growth inducing inequalities at the early stage of development as there is another strand of growth – or development – theory in the 1950s in which distribution played an important role. This was based on the path-breaking works of Arthur Lewis (1954) and Simon Kuznets (1955). Lewis's model of growth "with unlimited supplies of labour" is fundamentally different from Kaldor's (or Solow's), in that it is driven by the movement of a factor of production (labour) from a low productivity sector to a high productivity one. Kuznets's seminal 1955 contribution owed much to the observation that, if inequality between these two sectors is rather more substantial than that within each sector, then inequality would first rise – as people moved across sectors - and then fall, as most of them found themselves in the new sector, or the economy reached a point where factor movement is equalising returns across sectors. Whence the stylised Kuznets "inverted-U" curve– but the recent focus on poverty reduction strategies has added poverty to the terms of the debate. Nowadays the question is to determine how to accelerate the pace of poverty reduction (Bourguignon, 2004).

Generally, it must be realised that there is a paradox in the theoretical arguments which show that wealth but not income redistribution, enhances economic efficiency and growth. This is because redistributing wealth generally involves some non-lump sum income transfers which may have negative effects on efficiency and growth. In the long run, the positive wealth effect may be stronger than the negative income effect. This is likely to depend mostly on the relative importance of the wealth accumulation part of the redistribution policy being considered. In fact, even pure income transfers generally have some spillover effects on wealth accumulation (Bourguignon, 2004).

2.3 The Concept of Economic Growth, Income Inequality/Redistribution and Poverty

2.3.1 Economic Growth

Long run economic growth is one of the best ways to bring people out of poverty. Some formerly poor countries, like South Korea, have had impressive growth performance, and consequently a significant increase in itS citizen's living standards. Other countries, notably many in Sub-Saharan Africa (SSA) including Nigeria, have had much less success in advancing the material welfare of their citizens. There is the need for growth targets to be sustainable and equitable (HDR, 2009) It must be sustainable because sound environmental policies can protect the productive capacity of Africa's natural resources. Equitable in the sense that long term political stability is impossible without sustainability. For equitable growth to be realised, measures are to be taken to reduce poverty, especially by improving the access of the poor to productive assets.

A growth strategy may be defined as a set of policies designed to promote economic growth by allocating resources, either by indirectly moulding the structure of incentives or by directly redistributing resources between different sectors of production as well as between different owners of factors of production. Depending on the allocation of resources induced, any given growth strategy will lead to a certain rate of growth and a certain distribution of income among individuals. These effects on the rate of growth and the distribution of income—which together can be described as the "pattern of growth" induced by a growth strategy—will determine the impact the strategy will have on the rate of poverty reduction. Different growth strategies will differ in their impact on poverty because they will induce different patterns of growth as defined above (Osmani 2000). Depending on the allocation of resources induced, any given growth strategy will lead to a certain rate of growth and a certain distribution of income among individuals. Economic growth accompanied by declining real wages among low –wage workers or reduced employment of unskilled labour

or reduction in public assistance are likely causes of relatively small effect of growth on poverty. Economic growth may not result in even growth in all subsectors of the economy, and the growth in each subsector may not be equally effective in reducing poverty.

2.3.2 Income Inequality

Income inequality refers to the distribution of income among households or persons. All analysts of income inequality need to answer the questions: The distribution of what, when and amongst whom? Most analysts of inequality use a measure of disposable money income. For most households, the primary income source is market income which includes earned income from wages, salaries, self-employment and other cash income from private sources such as property, pensions, alimony or child support. To reach disposable income, governments add public transfer payments (e.g., retirement, family allowances, unemployment compensation, welfare benefits) and deduct income tax and social security contributions from market income (Jesuit and Smeeding, 2002). The answer to the question "distribution among whom?" is "among individuals." As stated by Ahluwala and Chenery (1974), the principal element that is missing from the existing theories is an explicit treatment of the distribution of the various forms of assets. A more general statement would recognise that the income of any household is derived from a variety of assets: land, privately owned capital, access to public capital goods and human capital embodying varying degrees of skills. A grouping of households according to the type and productivity of their assets provide more insight into the nature of income determination among the lower income groups than does a narrower focus on the determinants of wages for different types of labour.

Much of the variations in income at the lower levels can be attributed to lack of human skills as well as lack of ownership of physical capital, complementary assets and other inputs. Whatever the shares of labour and capital as determined in the factor markets, greater equality of personal incomes could be achieved if ownership of private and access to public facilities were more equally distributed.

2.3.3. Income Redistribution

Authors have submitted that "no unified theory of income distribution actually exists". According to Bourguignon (2000), though several titles of books and articles announce quite ambitiously the statement of such a "theory of income distribution", they typically refer to only one part of what should actually be covered by such a theory: the determination of wages in the labour market, factor shares, the accumulation of wealth, etc. Distribution of income and wealth can be referred to as another meaning of inequality.

According to Mckay (2002), inequality concerns variations in the living standards across a whole population. Inequality is also viewed as different people having different degrees of something, often considered in terms of income or consumption but equally applicable to other dimensions of living standards that show a continous pattern of variation such as the level of education or the degree of malnutrition (Mckay 2002). Despite the reliance of growth theory on "representative" agents, societies are patently not homogenous whether in incomes, wealth or any other dimension. In fact, when we say that income in a certain population grew by X%, we are referring to the growth rate of the mean of the distribution of income across that population (Ferreira 1999).

Much of what government do is mainly redistribution of one kind or another. One of the ideas most deeply ingrained in thinking about economic policy is the notion of an inherent trade-off between equity and efficiency. Efficiency- enhancing policies increase the size of an economic pie; redistribution, on the other hand, cuts the pie more fairly but in the process causes it to shrink (Okun, 1975). In recent years, however, there has been increasing interest in the possibility that redistribution and efficiency might not always conflict but that in some circumstances , it might be possible to have both: to make the pie larger by cutting it more fairly. At a policy level, this new view of redistribution was lent special force by the observation –at least until recently –of economic success going hand in hand with improved distributional equity in some of the tiger economies (Kanbul, 2000).

Sharing the pie

The development strategies of certain Third World countries have been attacked because according to their critics, they would not lead to the satisfaction of the basic needs of the people. They have also been contested because they allegedly neglect, even impoverish, certain social categories. An improvement in average living conditions could in fact be accompanied by a deterioration, absolute or relative, in the situation of certain social minority groups. In order to examine the latter criticism in the light of the facts, we must study the changes in income distribution that have taken place in these countries during recent decades. While the relation between growth and income distribution is one of the oldest themes of economic theories, its statistical analysis is much more recent (Loup, 1980).

2.3.4 Poverty

It is estimated that more than one billion people in the developing world (including Africa) continue to live in absolute poverty (Obadan, 1997). Poverty is a multidimensional problem that goes beyond economics to include, among other things, social, political and

cultural issues. Therefore, solutions to poverty cannot be based exclusively on economic policies but require a comprehensive set of well-coordinated measures. Indeed, this is the foundation for the rationale underlying comprehensive poverty reduction strategies. The World Bank's 2000 *World Development Report* defines poverty as an unacceptable deprivation in human well-being that comprises both physiological and social deprivation. Physiological deprivation involves the non-fulfillment of basic materials or biological needs, including inadequate nutrition, health, education and shelter. A person can be considered poor if he or she is unable to secure the goods and services to meet these basic materials needs. The concept of physiological deprivation is thus closely related to but can extend beyond, low monetary income and consumption levels. Social deprivation widens the concept of deprivation to include risk, vulnerability, lack of autonomy, powerlessness and lack of self-respect. Given that countries' definitions of deprivation often go beyond physiological deprivation and sometimes give greater weight to social deprivation, local populations (including poor communities) should be engaged in the dialogue that leads to the most appropriate definition of poverty in a country.

According to Boadway and Keen (2000), poverty has been referred to not just as inadequacy of income; it is a lack of basic capabilities to function as a human being. It also denotes the inability of an individual or a family to command sufficient resources to satisfy basic needs. Functioning involves being able to take part in activities such as clothing, feeding and housing oneself, participating in community activities, appearing in public without shame and avoiding morbidity. Poverty has also been described as a significant and persistent global problem, afflicting people all over the world especially in developing countries. It is almost never defined in itself as it has no unanimously accepted definition. The concept can however be well-captured through the use of common indices such as consumption, income, growth prospects, basic needs perspective, well-being and poverty exclusion or equity. Poverty has therefore been described as not a state but the result of a process (Mbaya, Luc-Joel, Hugues and Harouna, 2000). While the phenomenon of poverty is pervasive in Africa, it has been a source of concern for the government of Nigeria. Every individual is expected to have access to basic education, good health and social services as well as protection from shock and adequate reward for their labour. Whether measured in absolute or relative terms, poverty is generally more prevalent in the rural communities of Nigeria. This explains why initial attention is on rural development. The sluggish growth and the low level of income coupled with inequality in income distribution – as well as lack of access to basic social amenities— have accentuated poverty levels across economic

groupings and geo-political divisions. In most urban centres, poor wage incomes and high unemployment rates, in the absence of social security benefits, have reduced the capacity of most people to provide the basic needs of human existence. Similarly, the intensity of poverty among the rural dwellers is manifested not only in very low incomes (which provide barely half the nutritional requirements for healthy living) but also in poor living conditions with little or no access to potable water, electricity and modern health care facilities.

Indeed, in terms of quality of life, deterioration in income, unemployment and poor social infrastructure, the poor have become poorer between 1985 and 1997 (Obi, 2007). Alleviating poverty then involves generating minimally acceptable capabilities which in turn requires that resources be tied to personal circumstances (such as age, gender, health status) and social circumstances (physical and social environments, epidemiological factors, public health characteristics). The poor in Nigeria can be found among several social/occupational groups and can be distinguished by the nature of their poverty. For example, evidence from the World Bank poverty assessment on Nigeria using 1992/93 household survey data, shows that the nature of those in poverty can be distinguished by the following characteristics: sector, education, age, gender and employment status of the head of household (FOS, 1995). Other characteristics include household size and the share of food in total expenditure. Thus, about 65per cent of the poor live in the rural areas, indicating that poverty in Nigeria is largely a rural phenomenon. For example, in 1992, 46.4 million Nigerians were said to be living in absolute poverty, out of which 80.2 per cent or 37.7 million are in the rural areas (Ogwumike, 1996). The marginalisation of the rural areas through urban-biased development policies is largely responsible for the high poverty incidence in the rural areas.

As stated by Mckay (2002), inequality concerns variations in living standards across a whole population while poverty focuses only on those whose standard of living falls below an appropriate threshold level (such as poverty line). This threshold may be set in absolute terms (based on an externally determined norm, such as calorie requirements) or in relative terms (for example, a fraction of the average standard of living). However, in practice, the most common and preferred definition in determining a country's level of poverty is derived from the economists' concept of "income poverty", which assesses the poor as people living in "absolute" or "relative" poverty. A person is in a state of "absolute" poverty when his or her level of income is insufficient to provide the basic necessities of life. Someone is considered to be in "relative" poverty when he or she appears to have more than someone who is in absolute poverty, yet has less than others have in terms of income, property and other basic pertinent resources. For statistical analysis and formulation of policy, the most common and

universal measurement defines a person as poor if he or she is living below the "poverty line".

Economic growth can be an effective anti-poverty tool. The extent to which growth benefits the poor however depends upon a number of factors that has to do with channels through which the fruits of growth are distributed in the economy. Economic growth accompanied by declining real wages among low wage workers or reduced employment of skilled labour or reduction in public assistance are likely causes of relatively small impact of growth on poverty. Economic growth may not result in even growth in all sub sectors of the economy, and the growth in each subsector may not be equally effective in reducing poverty. Growth in the sector that employs larger proportion of low wage unskilled workers is likely to reduce poverty than growth in the others that utilise skilled labour or are more capital-intensive (Ali and Tahir 1999). Likewise, differential impact on poverty in rural and urban areas is possible due to the difference of the rural or urban –based inputs used by the various sectors as well as differences in the nature of economic shocks suffered in the two areas.

A slight reduction in the share of national income that goes to the poorest categories may well be comparable with the stagnation or even with growth, of their absolute income, provided the total national income increases sufficiently. Like South Asia, SSA is one of the regions of the world where poverty is the most widespread. The region-wide extreme poverty in sub-sahel Africa reflects foremost a structural problem. Relative to other regions, African states lack the capacity to provide basic education and health care services, physical infrastructure required for sustainable development. The absolute level of resources is inadequate to combat widespread poverty. The problem is exacerbated by a lopsided distribution of resources to few elite under often inept and corrupt governments. Poverty in Africa is predominantly a rural phenomenon, with most of the poor (about 60 per cent of the continent's population) depending on agriculture for jobs and income. The rural poor have very limited access to credit, land and extension services. Lack of genuine political commitment to land reform or public sector support for rural development is the major factor exacerbating poverty (Kim 1997).

In Ghana, poverty is primarily a rural phenomenon, where over 43 per cent of Ghananians live below the poverty line (Boateng, Ewusi, Kanbur and Mckay, 1992). In Sudan, the civil war which began in 1956 has driven thousands of inhabitants into refugee status (Ibrahim, 1994). In Malawi, poverty is concentrated in the rural areas with only one per cent of the poor located in urban centres (Sahn, 1994; Sahn and Sarris, 1991). In Lesotho, poverty is also a rural phenomenon and is widespread among subsistent households where 50

per cent of the poverty can be attributed to families with heads aged 55 years and above headed by females (Gustafon and Makonnen, 1993). In Nigeria, a large percentage of people both urban and rural are still in poverty despite the fact that the country earned over $200 billion from the exploration of oil resources from 1970 to 1996 (World Bank, 1996a).

Since 1990, Nigeria has been classified as a poor nation and poverty has been persistent (Ajakaiye and Adeyeye, 2001). The incidence was 15per cent in 1974 (ILO, 1976), rose to 35 per cent in urban areas and 40 per cent in the mid 1980s. The situation in Nigeria is an evidence that living standards have declined and poverty increased.

Rural poverty which stood at 29.3 per cent in 1980 rose to 51.4 per cent in 1985, fell to 46 per cent in 1992 but increased sharply to 69.8 per cent in 1996. On the other hand, urban poverty, at 17.2 per cent in 1980 rose to 58.2 per cent in 1996 (FOS, 1999). A review of poverty situation in Nigeria shows that it has been a long-standing issue. Real per capita income and per capita private consumption rose sharply between 1973 and 1974, and there was a dramatic increase in real wage particularly in the non-significant sector. Poverty declined during this period (World Bank, 1996b). The period between 1975 and 1980 were characterised by mixed picture and mild progress in welfare and poverty improvement. Real wages in agriculture continued to rise until 1976, after which it remained relatively constant until 1980. There was a sharp fall in real wages in the non –agricultural sector however and the proportion of people in poverty did not decline over this period.

Poverty in Nigeria started with the onset of oil boom when agricultural production began to decline leading to rural-urban migration. This was followed by downward trend in oil prices, continued reduction of subsidy on petroleum products and other subsidies on agricultural inputs, high level of unemployment, low capital investment as well as low share of public expenditure on economic and social services (Olowononi, 1997). Some of the causes of poverty as identified by World Bank (1996a) include inadequate access of the poor to credit, even on small scale, also inadequate access to markets where the poor can sell goods and services.

Poverty is also caused by the failure of government to draw the people into the design of development programmes while destruction of natural resources leading to environmental degradation and reduced productivity is another factor that cannot be overlooked. Others as identified by Odusola (1997) include inadequate social services, high population growth, low income growth as well as social and political instability. Other causes are poor management, wastage of resources and misallocation of resources (World Bank, 1996b). Bad leadership,

corruption, low individual motivation and abilities and lack of revolutionary consciousness on the part of the followers are other causes (Tella, 1997).

Empirical evidence provided by the National Bureau of Statistics (NBS) indicates that the majority of the poor are located in the rural areas where over 70 per cent of Nigerians live. In the urban sector, poverty incidence of moderately poor in 1980, 1985, 1992 and 1996 were 14.2, 30.2, 26.8 and 33 per cent respectively. Similarly, figures for the rural sector for the respective years were 21.8, 36.6, 30.2 and 38.2. Poverty incidence for the urban core poor figures were respectively 6.5, 14.8, 15.8 and 37.6 per cent (FOS, several publications). Three attributes of the Nigerian economy can be inferred from these reports. First, that poverty is mainly a rural phenomenon. Second, the realisation that the past rural development policies and programmes have largely failed even though the programmes are hinged on improving the living standards of the rural majority (Onibokun, Kumuyi, Olokesusi and Adeyeye, 1988). Third, is the developmental defect and negation of theory in which in Nigeria, the urban growth did not result in resource transfer to the rural majority.

The Poverty Line: In any country, poverty analysis requires the construction of a poverty line which distinguishes the poor from the non-poor. This is then used in relation to welfare indicators. There are two major approaches to the construction of poverty threshold : The relative and absolute poverty.

Relative poverty line: This is determined by the distribution of expenditure from which it is calculated. A poverty threshold is considered as being an arbitrary and pre-selected percentage of the population making these expenditures (Duclos and Araar, 2008). The poverty line constructed based on relative poverty approach may however have several possible values, and may be unable to provide a set of coherent comparisons for measuring poverty under these conditions.

Absolute Poverty Line: Absolute poverty is defined in reference to a poverty line that has a fixed purchasing power determined so as to cover needs that are physically and socially essential. Setting absolute poverty reduction as the prime development goal is thus simply saying that a fundamental objective of development is to ensure that everybody satisfies his/her basic needs. The poverty line may be multi-dimensional, incorporating both an income poverty line for needs that can be met monetarily, and non-monetary lines for other needs (Bourguignon, 2004).

The *Absolute Poverty Line* is often based on a minimum nutritional requirement to be satisfied. This is converted into minimal food expenditures to which is added a non-food goods basket judged to constitute a basic minimum (Mukherjee and Benson, 2003). The

poverty threshold established on the basis of absolute poverty has a fixed value. The approach is widely accepted, easy to understand, and requires the presentation or classification of households according to income or consumption. Recently, there are two commonly used methods to estimate the absolute poverty line. These are: the methods based on the satisfaction of nutritional needs (calories) or Food Energy Intake (FEI) and Cost of Basic Needs (CBN), (Fambon, 2006, Duclos and Araar, 2008).

The Food Energy Intake (FEI): The method consists of first finding out the cost of a balanced diet and then adding to this a minimum non-food poverty component. Balanced diets are recommended by nutritional scientists, taking account of the nutritional requirements and food habits of people but there is no well-defined nonfood component of poverty. Ideally, we should use the ratio of non-food expenditure to food expenditure of those who are marginally poor but how can we know who the poor are before the poverty line is drawn (Paul, 1989). To overcome this problem, the non-food component is calculated using the ratio of non-food to food expenditure at the average level. To the extent that this ratio is higher than the one at the poverty threshold level, the estimated poverty line is likely to be biased upwards but there is no way to find out the extent of this bias because of the circularity problem.The FEI method is applied by looking for the level of consumption expenditures or income for which a person's typical consumption of food energy is just adequate to satisfy a predetermined food energy need. This method has been largely used in literature (Greer and Thorbecke; Deutsch and Silber, 2005).

Cost of Basic Need (CBN): This approach consists of defining a basket of goods and services an individual should be able to get in order to be considered as being poor. Such a basket encompasses not only food and basic nutrition but also clothing and housing (Mukhergee and Benson, 2003). This would amount to calculating the minimum amount of expenditures necessary to purchase the consumer goods indispensable on the calorific level of survival.

Poverty Indices

Once the poverty line is determined, next is to aggregate the information gathered to determine the poverty measure. To this end, the incidence of poverty within a population or sub-group related to it is usually evaluated by indicating the percentage of individuals involved. Recent analysis gives three principal measures of monetary (income) poverty or poverty in terms of consumption, generally used to evaluate poverty. They are: the incidence of poverty (or headcount ratio), the depth of poverty (or the poverty gap index), and (the

inequality of poverty). These three indices refer to a certain amount of income (expenditure), taken as a threshold separating the poor from the non-poor.

The first and the simplest poverty measure is the ratio or incidence of poverty (P_0). This is the ratio between the number of poor households or individuals (q) and the total number of households or individuals (n). This poverty index yields the proportion of the population which lies below the poverty threshold. The interpretation of this index is straightforward and poses no problem. For example, if P_0 =0.60, it means that 60 per cent of that population is poor. Certain specification must however be made when constructing poverty profile. This ratio, though widely used, has the problem of not capturing the extent of poverty, and it fails to satisfy Sen's monotonicity and transfer axioms (Fambon, 2006).

The second poverty measure is the poverty gap (P_1) which measures the magnitude of poverty. Unlike poverty incidence, the poverty gap allows the estimation of the proportional deficit of poverty, that is the average distance between the income (expenditure) of the poor and poverty threshold. Thus, this is a poverty gap index which measures the depth of poverty. Unlike the poverty incidence, it takes into account not only the number of the poor but also the extent of poverty. With P_0, if a household or individual is very poor, this will not be taken into account. Poverty gap index is sensitive only to the situation of the average poor and does not take into consideration the situation of the poorest among the poor. In designing policy actions for poverty reduction, it is important to note that it is not only the number of the poor that matters, but also the degree of their poverty. The poverty gap is a very useful tool in this respect and allows us to measure simultaneously the incidence and the degree of poverty. The P_1 is also a valuable instrument for comparing the relative poverty of various groups or geographical regions and thus permit to target towards the population most affected by poverty. The expression nzP_1 provides an estimation of the transfer of resources from the non-poor to the poor to eradicate poverty if there are no negative incentive effects associated with money transfers and if targeting is perfect. Under such conditions, P_1 represents the minimum financial commitments required to eliminate poverty for a given poverty line. Although P_1 takes into account the number of poor persons and the depth of poverty, it is not sensitive to income distribution among the poor. If there is a transfer from a poor person to another less poor person who lies below the poverty threshold, the value of P_1 is not affected. Thus, P_1 does not satisfy Sen's transfer axiom (Fambon, 2006).

The third poverty measure is the severity index of poverty (P_2). This index is not only sensitive to the incidence and depth of poverty but also to the distribution of resources among the poor. If income is redistributed from the poorest person to the less poor (without any of

them emerging from below the poverty threshold) neither the poverty ratio nor the poverty gap index will change. The poverty severity index is more sensitive to changes in the incomes of the poorest, and less sensitive to changes in the incomes of those who live close to the poverty threshold.

The above mentioned poverty measures are additive and decomposable into sub-groups. If the population is divided into j=1,2,…,m mutually exclusive and exhaustive sub-groups, and $P_{\alpha j}$ is the measure calculated for the group j, and $f_{j,}$ the proportion of the national population lying in group j such that (f_1+f_2 +f_3+…+f_m), the nation measure P_α is simply the sum of sectorial $P_{\alpha j}$ measures:

$$P_\alpha = \sum_{i=1}^{m} f_j p_m \quad \text{……..2.1}$$

From the above equation, we can further derive the contribution of c_1 of each sector or sub-group of national poverty:

$$C_j = \frac{f_j p_m}{p_\alpha} \quad \text{.....2.2}$$

These contributions give us a rich idea of where pockets of poverty are located in the country (i.e which region, professional groups, sectorial groups etc.) and this can influence the steps to be taken in reducing poverty. Comparisons of poverty measures over time or between different groups require a test of robustness in the changes observed in poverty indices (Duclos, Sahn and Younger, 2006).

2.4 Theoretical Models Relating Economic Growth, Development and Productivity

From the 1950s into the 1970s analytical emphasis was on probable tradeoffs between growth and income distribution. This derived in part from the famous "inverted-U hypothesis" (Kuznets, 1955) which postulated that inequality would rise in the initial phases of development, then decline after some crucial level was reached. Related studies involved estimation of the so-called turning point (Fields, 1980), to test the hypothesis that this might lie at roughly the same *per capita* income across countries. Growth theories could be cited in support of the hypothesis, such as the Lewis model of "economic development with unlimited supplies of labour". However, theoretical inconsistencies in Lewis make it a weak basis for the "inverted U" (Weeks, 1971). Kaldor's well-known growth model, in which capitalists have higher marginal propensity to save than workers, also implies that redistribution to

profits raises the growth rate. This model is most appropriate for developed countries, in which the functional distribution of income largely consists of wages and profits, and of less relevance to developing countries. A concern with the importance of distribution was central to the thinking of classical economists such as David Ricardo and Karl Marx. Atkinson (1997) cites Ricardo as arguing that Political Economy should be "an enquiry into the laws which determine the division of the produce of industry, amongst the classes who concur in its formation." Later, one strand of nascent growth theory in the 1950s had distribution playing a crucial role: the capital-labour ratio in Kaldor (1956, 1957) is driven to its steady-state equilibrium value by the different savings rates of "capitalists" and workers. Lewis's model of growth "with unlimited supplies of labour" is fundamentally different from Kaldor's (or Solow's), in that it is driven by a movement of a factor of production (labour) from a low productivity sector to a higher-productivity one. Kuznets's seminal (1955) contribution owed much to the observation that, if inequality between these two sectors is rather more substantial than that within each sector, then inequality would first rise – as people moved across sectors - and then fall, as most of them found themselves in the new sector, or the economy reached a point where factor movement was equalising returns across sectors. Whence the stylised Kuznets "inverted-U" curve. This hypothesis assumes that the economy consists of a low mean income and inequality in the rural agricultural sector and a high mean income with high inequality in the urban industrial sector. It also assumes that migration occurs from the rural sector to the urban sector which increases aggregate inequality. The Kuznets hypothesis largely explains the relationship between inequality and economic growth for the industrialised countries until the 1970s. Notwithstanding that Kuznets himself was inconclusive on the hypothesis, numerous studies that support the hypothesis have been produced. These studies began with Kravis (1960), followed by, among many others, Oshima (1962) who "fully confirmed" the Kuznets finding, Adelman and Morris (1971), Paukert (1973), Ahluwalia (1974, 1976) who deemed the hypothesis as a "stylised fact", Robinson (1976) who contends that the hypothesis was an inequality first increasing then decreasing when economic development hypothesis had acquired the status of modern paradigm (Saith, 1983). The curve has important implications for formulating poverty reduction strategies. If inequality rises at the early stage of development, it is possible that growth alone will not be sufficient to alleviate poverty at least in the foreseeable future, or growth may completely bypass the poor. The emphasis then should be placed on direct poverty reduction policies even if they amount to sacrificing some growth. In the 1980s, the paradigm began to be questioned. More recently, Oshima (1994) concludes that the Kuznets

relationship "is all, but absent in present-day Asian countries". Recently, compiled data set on international inequality by Deininger and Squire (1996) has provided an opportunity to make a deeper enquiry into this subject. This data set is much larger and of higher quality containing 682 observations on the Gini index for 108 countries. Analyzing this high-class data set, Deininger and Squire (1998) conclude that there exists no support for the Kuznets hypothesis of inverted U-shaped curve. When tested on a country-by-country basis, they find that 90 percent of the countries investigated did not validate the Kuznets hypothesis. There is also a slightly modified "dynamic version" of the Kuznets hypothesis which postulates that inequality increases as the rate of growth of income goes up. It means that under faster growth rates, the poor will receive proportionally lower benefits of growth than the rich. Fields (1989) did not find any systematic relationship between changes in inequality and the rate of growth of income. Using their higher-quality data, Deininger and Squire (1998) also investigated the relationship between changes in inequality and rate of economic growth. They conclude that there appears to be little systematic relationship between growth and changes in aggregate inequality. Periods of growth were just as often associated with increases in inequality as they were with declines. The paradigm seems to have evaporated. There exists no solid evidence of increase in inequality with economic growth. Ravallion and Chen (1997) have in fact provided an evidence of declining inequality with economic growth. Looking at a sample of 64 changes in inequality and economic growth between 1981 and 1994, they find a negative correlation between economic growth and changes in inequality. This correlation disappears, however, when they exclude the transition economies of Eastern Europe and Central Asia. Most recent studies seem to suggest that inequality as measured by the Gini index has remained stable over time in a large number of countries (Li and Zou, 1998). It means that economic growth tends to neither increase inequality nor decrease it. This result clearly has important implications for poverty reduction. It implies that rapid economic growth will generally be accompanied by a rapid reduction in poverty (Kakwani et al, 2000).

2.4.1 The Theory of Economic Development

This revolves around the works of economists like Kuznets (1955), Smith (1776), Marx (1887) and Ricardo (1817). According to Meier (1989), it is difficult to give one precise meaning of the term "Economic Development". It is not equivalent to the total development of a society; it is only a part-or one dimension –of general development. We

usually focus on the state or the nation as the unit of development but, the "national development" is a term that encompasses, at a minimum, social and political development as well as economic development in the building of national identity. It is also necessary to caution against equating economic development with either "Economic Independence or "industrialisation". Rich countries are believed to be rich because they are industrialised, and poor countries are believed to be poor because they are primary producing.

2.4.2 Economic Development and Distribution of Resources

Economic Development is not to be equated simply with industrialisation for several reasons; first, the concentration of a large percentage of production in the primary sector is in itself not a cause for poverty: the cause is in the productivity of agriculture. A poor country's high ratio of agricultural population to total population is more appropriately viewed as a consequence, rather than a cause of poverty. Whenever the agricultural population is poor, the non-agricultural population serving the agricultural population tends to be relatively small and also at a low standard of living.

When the rural sector is prosperous, the non rural sector tends to be large and also prosperous. Second, progress in industrialization is highly dependent on agricultural development (as reflected in Kuznets (1955) Hypothesis). Economic development is much more than the simple acquisition of industries. It may be defined as "Upward movement of the entire social system" or it may be interpreted as the attainment of a number of "ideas of modernization," such as rise in productivity, social and economic equalization, modern knowledge, improved institutions and attitudes, and a rationally coordinated system of policy measures that can remove the host of undesirable conditions in the social system that have perpetuated a state of underdevelopment. These views also simply imply that economic development involves something more than economic growth.

Development is taken to mean "growth plus change"; there are essential qualitative dimensions in the development process that extends beyond the growth or expansion of an economy through a simple widening process. This qualitative difference is especially likely to appear in the improved performance of the factors of production and improved techniques of production in our growing control over nature. Perhaps the definition that would now gain widest approval is one that defines economic development as- The process whereby the real per capita income of a country increases over a long period of time – subject to the stipulations that the number of people below an "absolute poverty line" does not increase, and that the distribution of income does not become more unequal. We stress a long period of

time because what is significant from the standpoint of development is a sustained increase in real income-not simply a short period rise-such as occurs during the upswing of the business cycle. The underlying upward trend over decades –at least two to three decades – is the stronger indication of development.

To understand clearly the nature of this debate, we must understand the position of the orthodox "classical" political economists of the late eighteenth and nineteenth centuries; men such as Adam Smith, David Ricardo and indeed Karl Marx. For these thinkers, economic progress occurred in society if the volume of output or production in that society rose quickly and continuously. Each of them was obsessed with the question of how a society based on private property in land and in other goods (including factories and machines), and utilizing a 'free market' principle to distribute land, money, machinery and labour among the different types of production, could succeed in raising the volume and value of production continually (or to 'grow' in modern economic parlance). Each of them gave different answers to this question, answers with very different political implications. But for all of them, the issue of production and it's increase, was the primary one. They were interested in how production or 'output' was distributed among different individuals and social groups in society only in so far as this 'distributional' issue impinged on production, i.e in so far as some aspects of distribution might threaten the capacity of a 'capitalist' economist(according to Marx) to grow. Thus for example, Adam Smith thought that the most important condition for continued growth was savings and investment, and he was anxious that a large part of the output and income produced should get into the hands of those who would save and invest as much of that income as possible (Smith, 1776).

Ricardo, on the other hand, thought for a number of rather complex reasons, there was a tendency for an increased proportion of the output in a growing economy to fall into the hands of the owners of land as rent, and that this tendency would starve both commercial farmers and manufacturers of capital and thus lower the incentive they needed to go on investing and producing (Ricardo, 1817). For Marx, one 'contradiction' facing capitalism was the tendency of the workers in factories to become more and more impoverished and miserable at the same time as the capacity to produce was growing. He sometimes suggested that this might result in economic crisis of 'over production' i.e the production of output for which there were no buyers (Marx 1887).

2.5 The Link between Economic Growth and Inequality

Kuznets (1956) suggests that the link between economic growth, represented by the growth in GDP per capita, and inequality takes an inverted U shape during the development period of a country. This postulate is based on the steps of development that he posits: I: The primary sector (agriculture) represents the main part in the structure of the economic activity. This phase is characterised by a quasi uniform distribution of income and a low level of inequality. II: The emergence of the secondary sector (industry) with higher level of productivity compared to the primary sector. This implies an increase in between group inequality as well as in total inequality. III: Introduction of new technologies in the primary sector partly eliminates the difference in productivity and incomes. Therefore, total inequality is reduced. The experience during the last few decades shows that the tertiary sector represents an important part of a country's economy. In the last two decades, many researchers have found little signs of a systematic relationship between growth and inequality (Fields, 1989; Ravallion and Chen, 1997; Deininger and Squire, 1998). Much of the work on the relationship between growth and income distribution in the 1990s is basically empirical, with unclear theoretical foundation. Janvry and Sadoulet (1995) conclude that during recessions, inequality rises while positive growth rates are distribution-neutral. Bruno and Ravallion (1998), using data from forty-five countries each with at least four or more distributional surveys over at least two decades, found that the effect of growth on inequality to be indeterminate. They further submit that lower initial inequality raises the likelihood that growth will reduce poverty. However, the main aim of Kuznets theory on the link between disparities in the productivity of economic sectors and inequality continues to be relevant even if the complete U shape cannot be observed empirically for many countries. The ambiguity concerning the link between growth and inequality can be explained by the lower correlation between them. Inequality is linked to the disparity in the productivity of economic sectors rather than economic growth (Araar and Awoyemi, 2006). This disparity can be higher in economic crisis or economic expansion periods. During recession periods, some sectors are more affected by economic shocks than others. This can explain the increase in inequality in developing countries even if the economic growth rate decreases. During expansion periods however, some economic sectors perform better than others. This boosts economic growth but worsens the income distribution. Datt and Ravallion (1992) decompose the observed variation in poverty into growth and redistribution. This method was improved by Kakwani (1997) and Shorrocks (1999) to deal with the non-attributed residue. While the Datt and Ravallion (1992) approach explores how the growth in average income affects total

poverty, earlier work on pro-poor growth focuses more on the nature of this impact at different segments of the distribution (Ravallion and Datt, 2002; Ravallion and Chen, 2003). As pointed out by Dagdeviren *et al* (2000), productivity-raising redistribution ensures that distribution does not reduce poverty at the expense of growth, and produces sustainable poverty reduction. Enhancing asset ownership for the poor is the clearest way to accomplish this. Investment in infrastructure, credit targeted to the poor, land redistribution and education can all be important mechanisms to make growth "pro-poor". In the 1990s considerable stress was placed on education, perhaps because it was viewed as relatively non-controversial. Typically, education is treated within a "human capital" framework which apparently allows the acquisition of skills to be treated at par with ownership of physical assets.

Most of the land redistribution programmes in Latin America, even those that radically changed ownership patterns (as in Peru), proved in practice to be poverty-generating rather than poverty-reducing (Thiesenhusen, 1989). Land redistribution that generates sustainable poverty reduction may require substantial current expenditure which in the medium-term could equal or exceed the cost of administering a progressive tax system and pro-poor distribution of expenditures. Perhaps more importantly, the more equitable land distribution may prove to be unsustainable in the absence of permanent administrative restrictions on accumulation of land (ownership "ceilings"). Like land redistribution, progressive taxation would appear to be an obvious vehicle for redistribution. However, studies of tax incidence and impact reach mixed conclusions. Some indicate that progressive taxation is a limited tool for reducing inequalities in income distribution, usually as a result of evasion by the rich. A study of Latin America concludes that tax systems did not contribute significantly to the reduction of inequality (Alesina, 1998). A cross-country study of 36 developing countries shows that in the 13 cases, total taxation was progressive, proportional in 7, and regressive in 6. Income tax systems were progressive in 12 cases out of 14 (Chu, *et. al.* 1999). A survey by the ILO reached similar conclusions (ILO, 1992).

Studies of public education typically show that expenditure on primary and secondary education reduces inequality, and expenditure on tertiary education has a regressive impact. In this context, Alesina and Rodrick, 1994) maintained that subsidising higher education *at the expense of* primary and secondary education reduces the re-distributive impact of public spending, because these subsidies will accrue to the middle or high-income groups. It takes no great insight to point out that the middle and upper classes in almost every country take advantage of tertiary education, and the poor do not. This is not an argument against public funding of tertiary education, for the scientists, technicians, even

entrepreneurs who will be crucial to growth typically require university education; that is, there are positive externalities to tertiary education. Further, a university system that is privately funded may reinforce the power rigidities that are the basic cause of inequality.

2.5.1 Empirical Studies on Inequality and Growth

The earlier studies found a strong negative correlation between inequality and growth (for example Alesina and Rodrik, (1994) and Clarke (1995). Birdsall, Ross, Sabot (1995) suggest that these facts offer a possible explanation of the difference in growth performance between egalitarian East Asia and unequal Africa and Latin America. Using an improved dataset on inequality measurement, Deininger and Squire (1998) find no significant impact of income inequality on growth. Time series of five-year average growth rates have been regressed on initial inequality and a standard set of explanatory variables included in growth regressions; these studies have found a zero, non-linear, or even positive relationship between income inequality and growth (Barro, 2000; Forbes 1998; and Banerjee and Duflo, 2000). A positive example of an empirical study that has explicitly tested the transmission channel implied by the theory is Perotti (1994) that estimated the impact of inequality on growth in the presence of credit market imperfections. He finds a significant growth-reducing effect of income inequality that increases in the presence of inefficient financial markets. Binelli (2003) has tested the relationship between inequality and growth through credit market imperfections in the context of a gender-sensitive model of human capital investment, confirming the results obtained by Perotti (1994) of a significant growth-reducing impact of income inequality in the presence of credit constraints. Easterly (2000) takes a step forward and tests the relevance of different competing mechanisms that justify a positive relationship between equality in the distribution of income and growth. He finds that inequality has a significant negative impact on three important determinants of successful economic performance: institutions' quality, investment in education and degree of openness. He concludes that an unequal income distribution represents a significant obstacle to economic prosperity.

2.5.2: Poverty and Inequality in Nigeria

As the drivers of Change Summary Report suggests, economic growth is "pro-poor" when it creates job opportunities for unskilled workers. Oil and gas industries are not themselves pro-poor, since they typically employ few unskilled workers. Manufacturing and agriculture, by contrast, are more "pro-poor" since they tend to produce more low-skill jobs

than the petroleum industry (Ravallion and Datt, 1996; Bourguignon and Morrisson, 1998). This would matter little if growth in the petroleum sector had a significant multiplier effect, producing growth in other sectors of the economy. Although this issue has not been well-studied, petroleum industries are usually seen as failing to produce growth in other economic sectors (DeRosa, 1992; Mayer, 1997; Owens and Wood, 1997). A large petroleum industry can also reduce the number of jobs for the poor by causing the Dutch Disease (Corden and Neary, 1982; Neary and van Wijnbergen, 1986; Sachs and Warner, 2001). The Dutch Disease occurs when a booming minerals sector raises both the real exchange rate and the cost of inputs for the manufacturing and agricultural sectors. Both of these effects will raise the price – and hence, reduce the international competitiveness – of exports from the manufacturing and agricultural sectors. The net result may be an absolute decline in opportunities for the poor. Inequality tends to hurt the poor by reducing the poverty alleviating effects of subsequent economic growth. According to the World Bank (2001) "when initial inequality is low, growth reduces poverty nearly twice as much as when inequality is high."

Several studies have found that resource-abundant countries tend to have higher income inequality (Leamer *et al.*1999; and Spilimbergo *et al.* 1999). The reasons are straightforward: typically resource industries generate substantial rents for governments or investors, but employ relatively few workers. The result is greater inequality. When governments are democratic, they are more likely to maintain pro-poor policies. Sen (1981) suggests that democracy helps governments avoid famine. According to Przeworski *et al.* (2000), democracy also tends to reduce infant mortality and improve social welfare by producing greater policy stability. Baum and Lake (2003) find that democracy increases life expectancy in poor states.

Several studies have found that oil wealth tends to make states less democratic (Ross, 2001a; Lam and Wantchekon, 1999). This effect works through three mechanisms. First, when a government has abundant oil revenues, it is less likely to impose taxes on the general population; yet the taxation process typically forces governments to become more accountable to their citizens. Conversely, when they are able to keep taxes low, governments find it easier to elude the scrutiny of their citizens.

Second, governments with abundant oil revenues tend to spend heavily on their military forces; by developing a more effective repressive apparatus, they are better able to undermine movements that challenge their authority.

Finally, democracy typically evolves from societies undergoing industrialisation. The industrialisation process gives rise to a larger and more influential urban working class which

tends to make for a more stable and democratic government. Oil development generally does not lead to industrialisation; it can even retard industrialisation by causing the Dutch Disease. This tends to weaken democracy which in turn harms the interests of the poor. Data on Nigeria's poverty record over the last several decades is scarce; however, there are strong indications that improvements have been modest at best. Since independence, Nigeria has experienced alternating cycles of democracy and military rule. There may be several ways that the nation's oil wealth has discouraged democracy. It is important to note, however, that other factors may have played an even greater role: democracy tends to be weak and unstable in countries with incomes as low as Nigeria's; and democracy has been uncommon in Africa generally.

One way that Nigeria's oil sector has undermined democracy is by contributing to the weakness of the manufacturing sector. Industrialisation tends to strengthen democracy by creating an urban middle class, which in turn offers a stable basis for democratic institutions. The oil sector has presented obstacles – obstacles that the government has so far failed to surmount – to growth in the manufacturing sector. Without a stronger middle class, Nigerian society has remained both culturally and economically polarised, a less-than-ideal foundation for democracy.

A second way has been through patronage and tax reductions. Oil-rich governments are commonly able to maintain low tax rates and use their abundant revenues for patronage while maintaining low tax rates. These patterns also weaken the basis for democracy by reducing the public demand for accountable government.

2.6 Fiscal Policy, Economic Growth and Poverty Reduction Efforts in Nigeria

The formulation and proper implementation of appropriate macroeconomic policies and programmes targeted for economic growth, along with improved access to social services and infrastructure, are essential ingredients in any strategy of poverty alleviation in Nigeria. Such macroeconomic policies should involve the deliberate manipulation of policy instruments such as public expenditure to achieve basic macroeconomic objectives. Fiscal policy is still widely recognised as a potent tool for enhancing growth, redistributing income and reducing poverty (though the Nigerian experience is tending to suggest otherwise). One could then ask, what is the role of fiscal policy in inducing growth, redistributing income and reducing poverty in Nigeria? Further, could fiscal policy be designed so as to ensure growth and reduce poverty while maintaining macroeconomic stability? These are crucial questions to ask given the renewed interest of the current democratic structure in Nigeria in poverty

alleviation and given that fiscal policy is the arrowhead of the policy package of the current policy framework in Nigeria. Growth and poverty alleviation have received attention in Nigeria (Aigbokhan, 1985, 1998; Obadan, 1997; Ogwumike and Ekpenyong, 1995; among several of such studies).

According to World Bank (1996a) report, countries with inflation rates of over 30per cent tend to have low *per capita* growth, whereas those with inflation rates above 70per cent tend to show negative growth. In addition, the economic performance of the higher per capita growth rate countries has been enhanced by stable exchange rates and moderate to low inflation. It follows that the achievement of price stability is a valuable poverty reduction goal by itself. The report further emphasises that if there is to be a reduction of the number of people in poverty, there must be a growth rate of at least five to seven per cent per annum, growth that is employment generating and with an export base. The use of public expenditure policy to encourage import oriented production and consumption patterns, with few incentives for the expansion of non-oil exports, adversely affected–agricultural production — in which over 60per cent of the population are engaged – and deprived the sector of necessary resources for the needed growth and expansion of activities that would have redistributed income. The nature of excessive government intervention in the economy led to the setting up of many parastatals and government owned companies, apart from colossal public sector investment undertakings in huge and expensive social, physical and economic infrastructure and industrial projects. Given the set up in these government establishments, the operations of many resulted in financial losses. Thus, rather than become avenues for equitable distribution of income these public enterprises degenerated into avenues for political compensation. It is quite obvious that previous and current development planning efforts have not successfully addressed the problem of poverty alleviation because the strategies adopted for economic growth have not been strong and well- focused on income redistribution. Second, the massive effort to provide social services and infrastructure was not well-implemented and not accessible to the generality of the populace. Third, there have been no well-targeted transfers and safety net mechanisms for the poor. Hence, to tackle the problem of poverty alleviation, a critical review and streamlining of fiscal policy for growth and income distribution needs to be undertaken. Of course, the relevance of considering the growth effects of fiscal policy must be predicated on the basic proposition that policy matters for long run growth. However, a clear and direct link between budget policy and growth has traditionally been associated with tax policy. One link is built on the idea that taxes are non-neutral (in terms of private economic agents' allocative decisions). Hence, distortions are

introduced into the economy. A second link is via the impact of taxation on factor accumulation, particularly capital. It relates to the excess burden of taxation in a dynamic sense. Another channel usually suggested in the literature is the provision of tax incentives for promoting investment and research and development activities (Tanzi and Zee, 1997). The basic idea is that the structure of taxation could have important implications for growth. This consideration is actually not limited to simply the area of capital income taxation, or even to income taxation in general; it has, in fact, broad significance for the overall structure of the entire tax system.

On the expenditure side, it is usually suggested that the net impact on growth (as measured by aggregate output) of the crowding-out effect of public expenditure clearly depends on the relative marginal productivity of the public and private sectors. The externality effect of public expenditure enhances growth by raising private sector productivity. Here, a higher level of such expenditure could achieve a high growth rate. The opposing natures of the crowding-out and externality effects rest on the proposition that the structure of public expenditure, rather than merely its level, would be of considerable importance. In analysing the composition of public expenditure, the traditional approach has been to divide it broadly into the categories of public consumption and public investment. This classification is important in a dynamic framework because it focuses attention on the impact of public expenditure on private savings and investment and, hence, capital accumulation. Another area of interest in the literature has to do with the complementarity or substitution between public and private expenditure as they affect private savings. Like the case of taxation, the empirical evidence of the growth effects of public expenditure (as a share of GDP) is inconclusive (Ram, 1986; Levine and Renelt, 1992; Barro and Sala-i-Martin, 1995). One reason for this inconclusive evidence is that the direction of causation is usually difficult to ascertain. It is sometimes suggested that another reason for this inconclusive evidence is that the relationship between growth and fiscal variables may not be particularly monotonic over the levels of these variables or income or both. In fact, it can be argued that that increasing levels of public expenditure would first raise and then reduce growth (Tanzi and Zee, 1997).

The combined effect of taxation and expenditure (budget balance) is usually referred to as budget policy. It is usually argued that budget policy may have growth effects that are separate from those related to the absolute level of either taxation or public expenditure, as discussed above. On the income distribution side, it is generally agreed that there seems to be a tradeoff between the allocative and distributional roles of budget policy. The tradeoff is

seen from the disincentive effects of distortive taxes that are required to finance direct or indirect transfer payments from the rich to the poor. Studies have demonstrated that under fairly general assumptions about (heterogeneous) individual preferences regarding income and work effort, the efficiency cost of pursuing an egalitarian policy could be prohibitively high (Sinn, 1996). In this traditional view, policies effecting a redistribution of income toward equality would exact an increase in the price of (aggregate) output loss that is likely to be larger than the reduction in income inequality achieved by such policies. Hence, in a dynamic framework, such a view leads to the conclusion that there is an increasing marginal cost, in terms of growth forgone, of income redistribution, on account of the saving-depression effect of taxation. This view has been challenged by some strand of researches which argue that redistributive taxation and the expenditure that it finances are a form of social insurance over an economic agent's lifetime against certain types of risk for which private insurance may not be available. Consequently, redistribution policies could stimulate productive risk taking and output growth, although such behaviour does not necessarily result in greater equality in the after-tax distribution of income (Sinn, 1995 and 1996). The point here is that the potential productivity of the poor cannot be fully realized unless they are given the opportunity to participate in financial markets. If financial markets were perfect, the poor would be able to borrow against their future earnings to acquire, for example, basic needs and human capital. In the absence of such markets, however, redistribution policies are needed to raise the standard of living of the poor at least beyond some threshold so that they can become productive members of the society and, consequently, contribute to growth. An implication for budget policy from this strand of literature is clearly that redistribution budget polices that results in less income inequality could well promote growth. There is also the political economy approach to redistributive budget policy in the literature (Tanzi and Zee, 1997). Monetary and exchange rate policies can affect the poor primarily through three channels: inflation, output, and the real exchange rate. As mentioned earlier, inflation hurts the poor because it acts as a regressive tax and curbs growth. Fluctuations in output clearly have a direct impact upon the incomes of the poor, and monetary and exchange rate policies affect these fluctuations in two ways: first, changes in the money supply can have a short run effect on real variables such as the real interest rate which in turn affect output; and second, a country's chosen exchange rate regime can buffer or amplify exogenous shocks. Finally, the real exchange rate can affect the poor in two ways. First, it influences a country's external competitiveness and hence its growth rate. Second, a change in the real exchange rate (through, for example, a devaluation of the nominal rate) can have a direct impact on the

poor. Nigerian government distributes a large fraction of its budget in the form of patronage; it has also eliminated the personal income tax (at the federal level). Although state and local governments have the legal authority to cut patronage and raise taxes on their own, they have insufficient incentives to do so, given the large transfers they receive from the federal government (Forrest 1993; and Watts, 1997).

A careful analysis by Ngwafon, Thomas and Canagarajah (1997) found that between 1985-1992, the extremely poor became poorer but the standard of living for other groups improved. It is important to note, however, that the period covered by the study (1985 to 92) was one of rising incomes in Nigeria; between 1992 and 2000, however, incomes generally fell. Bevan, Collier, and Gunning (1999), conclude that per capita consumption was lower, and the incidence of poverty was "probably higher," in 1992 than it was in 1950.

Other poverty measures are ambiguous. According to the UNDP, infant mortality dropped by eight per cent between 1970 and 2000 (UNDP, 2003); according to the European Commission and the World Bank, it rose by about seven per cent between 1965 and 1993 (Wright, 1998). In constant dollars, Nigeria's per capita income rose about 13 per cent between 1960 and 2000. Yet all of these gains occurred between 1960 and 1970, when the oil sector was still relatively small. Since 1970, Nigeria's per capita income has fallen by about four per cent.

2.6.1 Empirical Evidences on Economic Growth, Income Redistribution and Poverty Reduction

As discussed in Foster and Székely (2001), empirical evidence on whether the benefits of economic growth are shared by the poor started to be produced systematically around the 1970s, when compilations of income distribution statistics for several countries started to become available. The first studies on the subject focused on the relationship between growth and inequality since they were mainly concerned with verifying the Kuznets hypothesis that inequality increases during the initial phases of development, and declines after a turning point. The earlier studies were also specifically concerned with the effects of growth on the standard of living of the poor. For instance, Adelman and Morris (1973), Ahluwalia (1976), and Ahluwalia *et al.* (1979) asked whether there is a systematic relationship between economic growth and the income share of the bottom quintile. They conclude that this share tends to decline in the early stages of development but increases in the long run. The growth-inequality relationship took centre stage during the 1980s, and only

recently has there been renewed interest on the question of whether the poor specifically, rather than all sectors of society share the benefits of growth proportionally. Recent studies follow two different approaches for classifying the population into poor and non poor. The first uses a relative concept of poverty by estimating the growth elasticity of the per capita income of individuals in the first quintile of the distribution. There are two opposing views on the relation. While Roemer and Gugerty (1997), Gallup *et al.* (1999), and Dollar and Kraay (2000) argue that the elasticity is practically one, Timmer (1997) obtains an elasticity of around 0.8. Although these four studies use the same data and similar econometric techniques, they disagree on whether growth in average income leads to a one-to-one improvement in the incomes of the poor, or to considerable smaller gains for this group.

A view held widely in development economics is that the benefits of rapid economic growth rates diffuse automatically across all segments of society. This view is based on the trickle-down theory that was the dominant development thinking in the 1950s and 1960s. It implies a vertical flow from the rich to the poor that happens in the ordinary course of economic functioning. The benefits of economic growth go to the rich first, and then in the second round the poor begin to benefit when the rich start spending their gains. Thus, the poor benefit from economic growth only indirectly through a vertical flow from the rich. This implies that the proportional benefits of growth going to the poor will always be less. Still it was believed that growth will rapidly reduce poverty. Thus, the main concern of economists in the 1950s and 1960s was to enhance growth by means of increasing savings and investments. By the early 1970s, the trickle-down theory lost some of its shine. The basic needs approach became the dominant thinking among economists and the international organisations, particularly the World Bank and the International Labour Organisation. Recent cross-country analyses show that growth and poverty reduction are strongly positively correlated, or in other words, growth and poverty reduction go hand in hand. The countries that have experienced high growth over a sustained period have made a greater reduction in poverty. Ravallion and Chen (1997) show that a 10 per cent increase in the mean standard of living leads to an average reduction of 31 per cent in the proportion of the population below the poverty line. This result indicates that growth can reduce poverty incidence very rapidly. Why then has there been so much skepticism of the "trickle-down" phenomenon in the post-1970 period? A simple answer to this question is that the cross-country analysis is indicative of average trends while individual country experiences can vary quite significantly. In many countries, the high incidence of poverty persisted despite having decent growth rates. It is the slower rate of poverty reduction in many countries that has generated keen interest in the

concept of pro-poor growth. The degree of poverty depends on two factors: average income and income inequality. An increase in average income reduces poverty and an increase in inequality increases it. Economic growth increases average income (or consumption) but at the same time it may be accompanied by increasing or decreasing inequality. The increase (decrease) in inequality implies that the proportional benefits received by the poor are less (more) than those of the non-poor. Thus, in strict terms, growth is pro-poor when it is accompanied by a reduction in inequality.

The theoretical models that identify a negative relationship between inequality and economic performance due to the existence of markets' imperfections predict, in principle, a growth enhancing impact of redistribution policies since they promote a reallocation of resources that maximises marginal returns. In addition, redistribution has been identified as an effective tool for poverty eradication, the overarching objective of economic development. On one hand, higher GDP growth rates due to lower inequality contribute to a faster reduction in absolute poverty; on the other, redistribution increase the poor's share of total income and its increments through growth (Ravallion, 1997 and Cornia, 1999). Even if initial distribution is irrelevant to growth, if all income levels evolve at approximately the same rate, the poor benefit less from the growth process when they control a lower share of aggregate income; therefore, in the presence of higher income inequality, the rate of poverty reduction decreases. Ravallion (1997) performs an empirical test with data for 23 developing countries and finds evidence of lower rates of poverty reduction for higher inequality levels at given growth rates of GPD; he concludes that inequality can result in rising poverty despite good underlying growth prospects. Adelman (2000) underlines how equitable development paths can be achieved if a prior equalisation of access to the main production factor is promoted. The equality-enhancing growth performance of East Asian countries is an example; redistributive land reforms were implemented before promoting rural development so that the benefits from subsequent improved agricultural productivity were widely distributed. What is crucial for the desirability and the design of redistribution policies however, is how they can correct existing market imperfections and how they interact with existing markets and change private incentives. Given these considerations and the possible complementarity between equity and economic prosperity, it is important to identify the conditions under which the negative impact of inequality on growth can efficiently be reduced and the most effective redistribution policy be implemented. It turns out that a relevant distinction has to be made between short and long run interventions.

Recent empirical studies have found that the rate of poverty reduction with growth also depends on initial inequalities in income and assets. Using cross-country regressions, Ravallion (1997) finds that when poverty elasticity, which measures the responsiveness of poverty with respect to growth, is lower, the higher is the initial level of inequality. A country with a Gini index of 0.25 is likely to have a poverty elasticity of –3.3 which implies that a growth rate of one per cent will reduce the incidence of poverty measured by the percentage poor by 3.3 per cent, while one with a Gini index of 0.6 is likely to have a poverty reduction of 1.8 per cent. These results clearly show that the initial inequality of income is very important in explaining differences in rate of poverty reduction in different countries. Deininger and Squire (1998) also reach a similar conclusion that "initial inequality hurts mainly the poor, but not the rich." They argue that this finding is consistent with the theoretical literature that emphasises credit rationing and the inability of the poor to undertake productive investments as mechanisms through which the effects of initial inequality and growth may be transmitted.

2.6.2 Relevance of Economic growth to the Poor

A recent study at the World Bank by Dollar and Kraay (2000) concluded that the income of the poor rises one-for-one with overall growth. This general relationship between the income of the poor and *per capita* GDP growth holds in a sample of 80 countries over four decades. Economic growth over a period of four decades has not changed the relative inequality; the proportional benefits of growth going to the poor are the same as those enjoyed by the non-poor. Thus, the authors make a strong case for growth-maximising policies concluding that "growth generally does benefit the poor and that anyone who cares about the poor should favour the growth-enhancing policies of good rule of law, fiscal discipline, and openness to international trade" (Dollar and Kraay, 2000). They used a lognormal approximation to estimate the per capita income of the bottom quintile for those countries for which income shares of quintiles were not available. Eastwood and Lipton (2000) examine closely the methods and results of the main measurements studies. They illustrate problems of definitions and measurements and how these hamper a more useful interpretation of the statistical findings. They begin by commenting on the choice of poverty line whether national, dollar a day, or measuring relative poverty. They also point out the issues that arise out of unreconciled sources of growth and poverty data, for example, household surveys, national accounts, consumption expenditure and income. Eastwood and Lipton (2000) also assess the effect of different degrees and types of initial inequalities in

determining the relationship between the rate of growth and the pace of poverty reduction. In conclusion they suggest that a less aggregated and more micro-based and causal structural analysis of pro-poor growth might help policymakers in delineating the policies favoring growth, equality, and poverty reduction.

Foster and Székely (2000) conclude that the incomes of the poor do not grow one-for-one with increases in average income. Their study is based on 144 household surveys from 20 countries over the last quarter century. They followed a somewhat different methodology from that of Dollar and Kraay (2000). They tracked low incomes based on Atkinson's (1970) class of "equally distributed equivalent income" function, which they call "general means", whereas Dollar and Kraay (2000) use the mean income of the bottom quintile to measure the standard living of the poor. Foster and Székely (2000) raise an important methodological issue of tracking down the income of the poor; in other words, how can the standard of living of the poor be measured? In the poverty literature, the traditional method is to first specify a poverty line below which a person is identified as poor, and then measure the aggregate deprivation suffered by those who are identified as the poor. Thus, the measurement of poverty involves two distinct issues, namely, identification and aggregation. It is the aggregation issue that has attracted most attention in the literature. The percentage of the population falling below the poverty line, or the headcount ratio, is the most widely used measure of poverty. This ratio does not reflect the intensity of poverty suffered by the poor. It was Sen's (1976) seminal paper that pointed out that all the poor below the poverty line cannot be treated alike. Some poor are poorer than others, so the poor should be given different weights depending on the degree of deprivation suffered by them. This paper led to a large literature on poverty measurement (Kakwani 1980; Clark, Hemming, and Ulph 1981; and Foster, Greer, and Thorbecke, 1984). The traditional poverty measures are estimated on the basis of a pre-specified poverty threshold. For instance, in the cross-country studies, Ravallion (2000) employs absolute standards of $1 and $2 a day to identify the poor and then aggregates using the most common poverty measures. So some degree of arbitrariness is always involved in specifying the poverty thresholds. Foster and Székely (2000), therefore, question this approach by asking "why should an income slightly higher be ignored, just because it is above the arbitrary cutoff that is employed?" Dollar and Kraay (2000), measured poverty by the mean income of the bottom 20 per cent of the population. This is a relative approach to measuring poverty and can hardly be justified as a coherent line of separation between the poor and non-poor. Foster and Székely (2000) employ a social welfare approach to measuring poverty, wherein different individuals in the society receive different weights

depending on the objectives of the society. If the objective is to reduce poverty, then the poorer persons receive greater weight than the richer persons. An aggregate poverty measure is basically a social welfare function, in which the poor receive all the weight and non-poor do not receive any weight. But in such a function, one needs to identify exactly who is poor and who is non-poor. Foster and Székely (2000) argue that there is no need to arbitrarily partition the population into poor and non-poor groups. The weighting scheme can be continuous, in which the non-poor also receive positive weight which may be made as small as one wishes. The general means are derived from the Atkinson's (1970) idea of equally distributed equivalent level of income, the level which, if received by every individual, would result in the same level of social welfare as the actual income distribution. Using a cross-country regressions methodology, Foster and Székely (2000) concluded that the greater the weight attached to the incomes of the poorest individuals, the smaller the gain from growth.

2.6.3 Distributional Effect of Growth

The empirical literature on the distributional effects of growth has always centred on the Kuznets hypothesis that inequality rises in the early stages of economic development and falls progressively at its later stages (Kuznets, 1955, 1963) The rising inequality is explained by the transfer of labour from subsistence rural to high wage and more unequal urban areas as well as by a growing disparity between urban capitalists and new workers. Inequality eventually diminishes as rural labour migrates in sufficient numbers to the urban economy. There have been cases of empirical studies that contradicts the hypothesis. It can thus be judged as inconclusive (Fields, 1980; Anand and Kanbur,1993; World Bank, 1993). A recent survey based on more complete and reliable data (World Bank 1996b) confirms that positive economic growth is necessary for reduction in inequality, although its impact on inequality is not transparent. The impact of growth however, is shown as reducing the incidence of poverty but it remains marginal in terms of reducing the absolute numbers of the poor in the Third World. In many countries of Sub –Sahara Africa, including Nigeria, the number of poor has continued to rise despite positive economic growth in many of the countries. A number of countries' experiences show that growth is not a sufficient condition for reduction in poverty or inequality. For example, experiences from the supply side policies in the United States and the United Kingdom during the 1980s indicate that growth alone does not automatically reduce poverty. In Thailand for example, despite impressive growth, its fruits have not filtered down to the poor. Its rapid growth has in recent times been accompanied by increases in poverty, particularly in the rural areas (Goodno and Miller, 1996). China has had

a similar experience in which impressive growth has been concomitant with uneven distribution between cities and countryside, coastal regions and hinterland, as well as skilled and unskilled workers.

For fast growing countries that have reduced poverty or inequality, the state has been involved. This example can be found in East Asian experiences. In post war Japan, the land reform initiated by the allied occupation forces and subsequent improvements in the agricultural terms of trade gradually eliminated rural poverty. Japanese governments quickly enforced a universal education system at the basic and secondary levels, at the same time implementing comprehensive social security and national health programmes. Japan, where over 90 per cent of its population consider themselves as belonging the middle class , is now considered as among the most developed in these fields. In some Asian countries, spontaneous and often violent social movements were involved to bring about a redistribution in the fruits of growth. A recent experience in the Phillipines demonstrates a case of the success in poverty reduction despite years of slow economic growth. Innovative grassroots social movements and labours efforts at collective bargaining had positive effects on incomes of the working poor. In South Korea, the authoritarian regime of the mid 1970s and the 1980s departed from the pro-rural policies of the earlier 1970s, concentrating on the support of large businesses and suppressing labour interests. Thus, despite the country's impressive economic growth, its income distribution worsened considerably. This period was also marked by a series of frequently violent labour movements. The noticeable gains in real wages during the period can be largely attributed to these active social and labour movements. The distribution could even have been worse without such a social mobilisation (Kim, 1997).

2.6.4 Growth and Inequality Reduction Strategies

How sensitive is the incidence of poverty to economic growth? This issue has been the subject of extensive research in recent years. A large amount of cross-country evidence suggests that growth and poverty reduction are strongly positively correlated. This result is consistent with the "trickle-down" theory that some benefits of growth will always trickle down to the poor. Thus, the incidence of poverty can diminish with growth even if the poor receive only a small fraction of total benefits. A recent World Bank study by Dollar and Kraay (2000) has come out with a much stronger result that the income of the poor rises one-for-one with overall growth. It means that the proportional benefits of growth enjoyed by the poor are the same as those by the non-poor. An important implication of this research is that growth is good for the poor irrespective of the nature of growth. Thus, governments need not

follow pro-poor polices with a focus on poverty reduction. To achieve a rapid reduction in poverty, they should focus on maximising economic growth while maintaining macroeconomic stability. It is obvious that if the growth component dominates over the inequality component, then growth-maximising policies may be adequate in achieving a rapid reduction in poverty. If the inequality component dominates, then the policies that are pro-poor and thus reduce inequality should be adopted. Findings by Kakwani (2000) suggest that rising *per capita* income will generally lead to lower poverty, especially if the rate of growth is sustained at a reasonably high rate, which on current evidence would mean not less than two to three per cent per annum.

Kakwani (2000) has a simple message that all countries cannot have the same policies. For some countries, growth-maximising policies may be adequate but for others, there may be a need to have pro-poor growth policies with a focus on reducing inequality. His study addresses the issue of ex-ante choice of development strategy for a specific country. As pointed out earlier, the degree of poverty depends upon two factors: average income and income inequality. The increase in average income reduces poverty and the increase in inequality increases it. Thus, the change in poverty can be decomposed into two components: one is the growth component relating to change in mean income, and the other is the inequality component relating to change in inequality. The magnitudes of the two components provide the relative sensitivity of poverty reduction to growth and inequality. It is obvious that if the growth component dominates over the inequality component, then growth-maximising policies may be adequate in achieving a rapid reduction in poverty. If the inequality component dominates, then the policies that are pro-poor and thus reduce inequality should be adopted. Kakwani (op. cit) develops a methodology to measure the tradeoff between inequality and growth, which shows how much growth is needed in order to offset the adverse impact of an increase in inequality on poverty. He derives the inequality-growth tradeoff index (IGTI), which is equal to the negative of the ratio of inequality to growth elasticity of poverty. If, for example, IGTI is equal to 3.0, it means that a 1 per cent increase in the Gini index will require a growth rate of 3 per cent in order to offset the adverse impact of increase in inequality. It also means that by following a pro-poor strategy, if we can reduce the Gini index by 1 per cent, then this strategy is equivalent to having an additional three per cent growth rate. This suggests that the larger the IGTI, the greater will be the benefits of following pro-poor strategy that would reduce inequality. Thus, the magnitude of the IGTI can give an indication of what development strategy a country should follow. In addition to the methodological aspect, the study also provides empirical analyses

based on four nations that face different stages of economic development: Korea, Lao PDR, Philippines, and Thailand. These countries provide an interesting comparative study as to which economy is more effective in reducing poverty by choosing between growth-enhancing strategy and pro-poor growth strategy that takes into account inequality. To begin with, IGTI computed for Thailand indicates that pro-poor policies may be prescribed as a remedy to reduce poverty. In general, Thailand is said to be a country with high inequality and rapid economic growth. On average, the economy has exceeded its growth in GDP per capita over an annual rate of 6 per cent for the last two decades. However, the inequality of income (or consumption) has been extremely high at the same time, surpassing the Gini index of 48 per cent. Large regional disparity within the country is frequently blamed for its high aggregate inequality. Uneven distribution of income in Thailand seems to have offset the benefits of fast economic growth in terms of poverty reduction. Consequently, the rate of poverty reduction has been much slower than expected. Growth-maximising policies alone will not be sufficient to achieve a rapid reduction in poverty. Unlike Thailand, Korea is known to be a nation with high economic growth and low inequality. Similarly, Lao PDR is often cited as an egalitarian society (World Bank 1995, Kakwani 2000). Although Korea and Lao PDR exhibit different stages of economic development today, they have one common aspect that their society is relatively equal. As IGTI shows, these countries with low inequality have much lower payoff for choosing a pro-poor strategy in reducing poverty. In fact, the payoff is far outweighed by that derived from a growth-enhancing policy. To reduce poverty rapidly, thus, Korea and Lao PDR may be advised to follow a growth enhancing policy instead of a pro-poor growth policy. The Philippines's performance in both growth and poverty reduction has not been as good as that of Korea and Thailand. While its growth rate has been much lower, the Philippines has maintained a high level of inequality and also high incidence of poverty. Kakwani (op cit) suggests that a mixture of growth and pro-poor policies may be deemed appropriate. The study also investigates a hypothesis as to whether the initial level of inequality matters in choosing an appropriate policy option in reducing poverty. After carrying out simulations on the data from the four countries, he arrives at a general conclusion that countries with low initial inequality will have a greater poverty reduction payoff from growth, whereas countries with high initial inequality will have a greater poverty reduction payoff from pro-poor growth policies. In addition, Kakwani (2000) makes a point that pro-poor policies are in particular effective in reducing ultra poverty. Thus, if the focus of policymakers is on reducing ultra poverty, then pro-poor policies that reduce inequality combined with better access to social services should be of greater benefit.

It does not follow that growth raises the income of the poor "by about as much as it raises the incomes of everybody else". Finding that the share of income going to the poor does not change on average with growth does not mean that growth raises the incomes of the poor as much as for the rich. Given existing inequality, the income gains to the rich from distribution –neutral growth will of course be greater than gains to the poor. For example, the income gains to the richest decile in India will be about four times higher than the gains to the poorest quantile. It will be 19 times higher in Brazil. The fact that on average, the rich will tend to capture a much larger share of the increment to national income from growth than the poor is directly implied by the empirical results in the literature such as Dollar and Kraay (2000).

The proportion of the population of the developing world living in households with consumption *per capita* less than about $1/day in 1998 (at 1993 purchasing power parity) is estimated to be 23per cent and this was only five percentage points lower than in 1987 (Chen and Ravallion 2001). The total number of poor by this standard was about the same in 1998 as in 1987, with roughly 1.2 billion people living below $1 a day. The authors try to assess what role worsening distribution played in aggregate poverty reduction during the 1990s. It was found out that the actual distributional changes were slightly pro-poor, since the measured poverty rate in 1998 is slightly lower than the simulated rate without any change in distribution. Income and asset redistribution are not necessary conditions for poverty reduction. Aggregate growth can also reduce poverty; and, equally, redistribution can achieve poverty reduction without growth (assuming that a portion of the population has incomes above the poverty line). To develop a poverty reduction strategy, the central issue is the relative effectiveness of growth and redistribution, and whether the one enhances the other. It would seem clear, even on the most superficial analysis, that growth combined with redistribution would be more effective than either on its own. This truism gives no insight into the appropriate balance between the two for a concrete poverty target. In order to determine an appropriate balance, "growth" and "redistribution" must be specified rigorously (Dagdeviren, Rolph Van der Hoeven and Weeks, 2000).

2.6.5 Initial Inequality and Long-term Growth

Wealth constraints prevent the poor from accessing credit markets, this is important in determining the poor's ability to invest in physical and human capital and to substitute for insurance. The relationship between the level of income and its distribution (Kuznets, 1955) and the forces shaping the latter (Kaldor, 1956) have long been discussed in the economic

literature. A negative relationship between inequality and growth could emerge if investments in human or physical capital are lumpy and have to be financed through credit. In a situation where information is costly and imperfect, equilibrium credit rationing (Stiglitz and Weiss, 1981) will arise –that is agents will be able to obtain credit only if they own assets that can be used as collateral. A more unequal distribution of assets would then imply that, for any given level of *per capita* income, the greater number of people will be credit constrained. In an economy where individuals make indivisible investments-in schooling and education, for example- that have to be financed through borrowing, this would imply lower aggregate growth (Chatterjee, 1991, Tsiddon, 1992). Investment possibilities may be limited not only by individuals' stock of collateralisable assets, but also by neighbourhood effects and social capital with even more pronounced effects in an intertemporal context through the possible impact on societies ability to take advantage of exogenous technological possibilities (Galor and Zeira, 1993). Another way by which inequality could affect future growth is through political channels. The degree of inequality could affect desired pattern of policies or it could determine individuals' ability to access political markets and participate in costly lobbying. Empirical models that have utilised this argument generally rely on some version of the median voter theorem (Persson and Tabellani, 1994; Bertola, 1993) which in its simplest (and most widespread) version, relied on democratic determination of tax rates. As the median voter's distance from the average capital endowments in the economy increases with the aggregate inequality of wealth, individuals will be led to approve a higher tax rate. This could reduce incentives for productive investment resulting in lower growth. If this is correct, democratic societies with a more unequal distribution of wealth should be characterised by "exploitation of the rich by the poor- that is, high taxes and, consequently, low investment and growth, whereas undemocratic ones with similar characteristics would not (Deininger and Squire, 1998).

The evidence for the Kuznets (1955) hypothesis for developing countries has been described as ambiguous. Looking at long-term trends, it has been concluded that the Kuznets relationship is all but absent in present-day Asian countries (Oshima, 1994). This is attributed to large indivisibilities in late 19th century technology (steam engine) which prevented all but the richest part of the population from accumulating capital, thus facilitating industrialisation only at the cost of growing inequality over time. By contrast, it is argued, almost perfect divisibility of current technology, together with greater international capital mobility allows a much broader part of the population to invest in the industrial sector, thus eliminating the historical link between growth and inequality.

2.6.6 Inequality and Income Distribution in Rural Nigeria

As in most developing countries, discussion of policies for poverty alleviation tends to focus almost exclusively on income growth, neglecting the potential role of redistribution. This for long has been one of the concerns of UNU/WIDER (2001) who asserted that in order to meet the global targets for reducing poverty, it will be essential to make pro-growth policies more distributional favourable. It is further argued that structural inequalities especially in income and input distributions are manifestations as well as strong causes of poverty. The higher the level of inequality, the less impact economic growth has in reducing poverty – for any rate of economic growth (WIDER, 2000). Ali (1997) noted that if poverty reduction is adopted as an overarching objective of development then a policy which would result in a one per cent reduction in the Gini coefficient would lead to an equal per cent reduction in the head-count ratio, twice the percentage reduction in the poverty-gap ratio and to three times the percentage reduction in the squared poverty-gap ratio. On the other hand, a policy that leads to a one per cent income would be expected to lead to a half a percentage reduction in all poverty. Poverty in the second half of the 1990s was due more to the rise in inequality than to the reduction in average incomes. Related to this was the remark of Kimalu *et al.,* (2001) that as economic growth increases, poverty decreases, and as inequality in income increases, the incidence of poverty increases. Poverty and inequality are therefore often measured to assess impact of economic and social policies as well as programmes on standard of living of the people (Okunmadewa, 1999). But not until in the recent past, approaches to income distribution are mostly descriptive rather than prescriptive. Since the pioneer work of Glewwe (1991) on determinants of poverty and well-being, regressions of household expenditures are now widely used in empirical development economics. Uses of expenditure equations such as ethnic discrimination in living standards (van de Walle and Gunawardana, 2001); evaluation of land distribution (Ravallion and van de Walle, 2001); and the determinants of inequality (Morduch and Sicular, 2002; Fields and Yoo, 2000; and spatial inequality (Hertsberg, 2003) are not uncommon.

Pigou (1912) and Dalton (1920) proposed the Pigou-Dalton transfer principle which states that inequality increases when there is transfer of income from a poorer to a richer person (Atkinson, 1970). Most measures of inequality in literature (for example Generalised Entropy, Atkinson and Gini coefficients) satisfy this principle. Also, Dalton (1920) proposes the population principle of income inequality measurement, which states that inequality measures are invariant to replications of the population. The anonymity principle (symmetry),

proposed that inequality measures are independent of any characteristic of individuals other than their income (Litchfield, 1999). The work of Kuznets (1955, 1963) on the relationship that exists between development and income inequality inspired development economists to find the major sources of income inequality. The regression analytical approach to inequality decomposition was pioneered by Blinder and Oaxaca (1973). This effort was set to determine the contributions of some socio-economic variables to income inequality. Fei, Ranis and Kuo (1978) also proposed a statistical approach that decomposed income in a way that pinpointed the contributions of each income source to overall inequality. The perceived linkage between income inequality and poverty motivated Datt and Ravallion (1992) to propose a method that decomposed poverty change into the income redistribution, income growth, and residual components, otherwise known as the black box. Kakwani (1997) used an axiomatic approach to decompose poverty change into their growth and redistribution components. This was confirmed by the Shorrocks (1999) method that applied the Shapley (1953) theory to poverty decomposition. This took care of the problematic residual component that was left in the Datt and Ravallion (1992) method. The relevance of income inequality to economic development efforts can be judged by the spread of researchers that have kept close focus on it over the past few decades. In Nigeria, Adelman and Morris (1971) estimated a Gini coefficient of 0.51. Aboyade (1974) used the 1966/67 household data and estimated a Gini coefficient of 0.58. Etukodo (1978) finds income inequality to be higher in urban Lagos than a rural area in Cross Rivers State. In 1996/97, Gini index for Nigeria was 0.506 while it was 0.613 in 1998 (World Bank, 2003). Matlon (1979) found non-farm income had a negative impact on the distribution of rural income in Nigeria because it was mainly concentrated among large land owners. In Zimbabwe, Piesse *et al* (1998) used Gini decomposition and observe that non-farm income decreased income inequality in Chiweshe. In rural Egypt, Adams (1999) analysed the impact of non-farm income on income inequality. The results showed that although non-farm income represented the most important inequality-decreasing source of income, agricultural income represented the most important inequality-increasing source of income.

2.7 Sources of Income Among Rural Population in Nigeria

Occupational diversification is defined broadly as non-agricultural income-generating activities undertaken by rural residents and farming by urban residents.

2.7.1 Agricultural Employment

The Nigerian economy is characterised by a large rural, mostly agriculture based, traditional sector, which is home to about three-fourths of the poor, and by a smaller urban capital-intensive sector, which has benefited most from the exploitation of the country's resources and from the provision of services that successive governments have provided. Most of the poor rural income poor are small subsistence farmers. Such farmers accounted for 73 per cent of the rural African population and in some countries for as much as 90 per cent of the poor (FOS, 1999).

In Nigeria, It was reported that even though poverty is more prevalent in the rural areas, the proportion of farmers in the population of those who live below poverty line has declined progressively from 86.6per cent in 1985 to 67.4per cent and 33.3per cent in 1992 and 1997, respectively (FOS, 2009). The occupational dimension of the poverty incidence as reported by FOS (1999) shows that the agricultural sector is most affected by poverty. The rise in poverty in the agricultural sector in 1996 is explained by the abandonment of rural agricultural policies of the 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 sector. Thus, 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 (public expenditure, revenue and investment – budget) that will enable all its inhabitants to improve their welfare (Obi, 2007).

2.7.2 Non- Farm Employment

Even though agriculture remains the main source of income and employment in most rural areas in developing countries, the rural non-farm sector has gained increasing importance over the past decades. Many small and landless farmers undertake non-farm work in the slack season. Construction and irrigation works are common examples but repair and maintenance jobs which can be postponed to the slack season are important as are a number of processing, service and commercial activities that expand after the harvest while the products of a number of manufacturing activities can be stocked. Within manufacturing, most rural employment is accounted for by four broad group of activities which are: food processing, textiles and weaving apparel; wood including sawmilling, furniture making and general carpentry; and metal entailing blacksmithing, welding, fabrication and the making of

tools and equipment. A particular noticeable feature of manufacturing activities in rural areas (as elsewhere) is their diversity, both with regard to manufacturing technique used and with regard to the type and quality of the final product. In Africa, for example, the rural metal working sector is largely confined to blacksmithing and welding. In irrigated regions of the Pakistan Punjab and some Indian states, the sector is much more advanced and includes small scale manufacturing of diesel and electrical tubewell pumpsets, an activity that has quickly become an important source of rural employment. At the start of the new millennium, roughly 25 per cent of rural full-time employment and 35 to 40 per cent of rural incomes was attributed to the rural non-farm economy in developing countries (Haggblade *et al*., 2002). Many smallholder farm households complement their farm income with income from non-farm sources. This strategy has several advantages, especially for poorer households. Their agricultural resources are often too limited to allow the productive use of all household labour, and non-farm activities offer an alternative remunerative allocation, especially during the lean agricultural season. Moreover, income from agriculture is subject to high risk due to climatic factors, price fluctuations, pests and diseases. Earnings from non-farm employment may help to buffer the resulting income fluctuations and improve livelihood security (Lanjouw and Lanjouw, 2001). These potential advantages for the rural poor do not necessarily imply that this group benefits most from a growing non-farm economy. In much of Africa, the share of non-farm income in total income is higher for wealthy households than for the poor due to entry barriers (Barrett et al., 2001; Ellis and Freeman, 2004; Reardon *et al.*, 2000). As a result, the non-farm economy does not reduce poverty but increases inequality instead. Evidence for Ethiopia is, however, mixed: using a sample of rural households spread over the country, Jayne *et al*. (2003) finds that the share of non-farm income is highest for the poor whereas Woldehanna (2000) and Block and Webb (2001) note that non-farm employment worsened income distribution in a case study of Tigray in northern Ethiopia. These contradictory results are not inconceivable, as the determining factors, such as the development of markets and institutions and the biophysical environment, can vary strongly within a single country. Reardon and Taylor (1996), for example,observe that non-farm income had an unequalising effect in northern Burkina Faso (a poor and risky agricultural zone) and an equalising effect in southern Burkina Faso (a favorable agro-climatic zone with dynamic agriculture). The present article analyzes the relation between poverty, inequality, and participation in the non-farm economy in Oromia, the largest state of Ethiopia both in terms of area and population size. The traditional development approach of providing technology and infrastructure to increase agricultural production has not succeeded

in curbing the trend of increasing poverty, and alternative sources of productive employment must be sought in order to support the additional workforce created by population growth. The question is whether the policy focus should be on improving access of the poor to existing non-farm activities or on improving the profitability of these activities.

In most rural areas, agriculture cannot provide sufficient livelihood opportunities. Rural non-farm employment can therefore play a potentially significant pole in reducing rural poverty. Several studies point out the importance of non-farm enterprises to rural income. For example, Reardon (1997) documented small enterprise studies that show that the typical rural household in Africa has more than one member employed in a non-farm enterprise. He also finds rural non-farm income shares in Africa as ranging from 22 per cent to 93 per cent. Newman and Canagarajah *(*2000) pointed to a large body of recent research that shows that Rural Non-farm (RNF) sector is now thought to be more dynamic and important that earlier thought.

Rural non-farm income is usually reinvested in improved agricultural technology. Empirical evidence shows that non-farm income is indeed the main source of investment for raising farm productivity (Abdullai and Huffman, 2000; Ellis and Freeman, 2004). The contribution of non-agricultural activities to household income in the developing world in general and Sub-Sahara Africa (SSA) in particular is substantial. Huggblade *et al* (2005) observe that local non-farm income contributes between 30 to 40 per cent of rural household incomes in developing world. In Nigeria, recent studies have shown that non-farm activities account for over 50 per cent of rural income (Awoyemi, 2004; Babatunde and Qaim, 2008).

Berg and Kumbi (2006) on Ethiopia report that majority of the people in the Oromia region are subsistence-oriented smallholder households. Labour markets are virtually absent and most households depend on self-employment on or off their farm using own labour resources. The proportion of farmers with access to credit facilities is very small. The productivity of agriculture is low and risky and the lion's share of produce is used for consumption. These circumstances imply that market prices alone do not govern the allocation of household resources to the different productive activities in the absence of insurance markets. That is, the household does not simply maximise profits, and production and consumption decisions are non-separable. What does this imply for the relation between poverty, inequality, and non-farm income? That is, who will engage more in the non-farm economy? Poor households are those with low asset endowments. Most of the capital in the study region is agricultural capital, as this is the dominant productive sector and most non-farm activities are capital intensive. This farm capital plays a dual role for participation in the

non-farm sector. First, more agricultural capital implies a higher liquidity which facilitates engagement in the non-farm sector. Second, more agricultural capital implies a higher productivity of labour and liquid capital in agriculture and thus a lower use of these resources in the non-farm sector. Hence, there are two opposing factors at work (Reardon *et al*., 2006). On one hand, liquidity constraints resulting from low asset levels may inhibit the poor from participating in the non-farm sector whereas the rich have sufficient access to liquidity to satisfy not only the requirements of agriculture but also of non-farm production. On the other hand, poverty may push households into the low-wage non-farm sector, as they cannot profitably employ all family labour in agricultural production. The presence of income risk in agriculture strengthens this push effect because the poor generally display more risk-averse behaviour than the rich. If farm and non-farm income are not perfectly positively correlated which is likely to be the case, diversification to non-farm activities will decrease income variability and thus, be most attractive to the poor. Depending on which factor is more important—the liquidity constraint or the labour surplus or the combination with risk aversion—either the poor or the rich will engage more in the non-farm sector. If it is the poor who participates more because they are pushed out of agriculture, non-farm income will decrease inequality. If it is the rich who participates more because they have the means to do so, non-farm income will increase inequality. In Nigeria, even among people in regular or self-employment, those living below the poverty line account for about 30.0per cent and 25.0per cent, respectively (Obi, 2007).

2.7.3 Wage Employment

Wage income includes all activities undertaken by persons in which the income received is in the form of a wage paid out by an employer; in other words, it includes earnings from dependent activities. Wage employment consists of employment compensation in cash, kind and bonuses.

Although skill acquisition is a prerequisite for gainful employment but the civil service, corporate establishment and trading (or informal) sector which accounted for 11.1 per cent and 26.3 per cent of the poor in 1985 and 1992, respectively, now harbour about 52.5 per cent. This reflects the impact of falling real wages and inaccessibility of social services on the living standard of the people. With an adult literacy rate of 57 per cent in 1997, education indexes show that about 43 per cent of Nigerians are illiterates. The consequences are poor income, inadequate skilled manpower and low productivity – and hence the persisting high level of poverty in the country. The high incidence of poverty among educated Nigerians

reflects problems of unemployment and low wage levels (Obi, 2007). A defining characteristic of both the urban and rural middle class in developing countries is permanent, well-paying wage employment (Banerjee & Duflo (2008). Despite this, in rural areas the labour market, at least agricultural wage employment, has often been negatively perceived as a refuge sector for the rural poor (Lanjouw, 2007). Further, the rural labour force typically grows at a faster rate than the agricultural labour force limiting the ability of the agricultural sector to absorb rural labour (World Bank, 2008). This raises questions about the potential for agricultural labour as a pathway out of poverty. One alternative to looking for work in rural areas is migration to cities with greater potential for steady employment. There is evidence that the poor have indeed been migrating to urban centres at a rate faster than the rest of the population, although the number of poor in rural areas remains substantially higher than in urban areas (Ravallion, Chen and Sangraula, 2007). Another alternative to agricultural wage employment is the rural non-agricultural labour market. Recent studies show that the rural non-agricultural economy has increased in importance around the developing world in terms of the share of rural household income it provides. This is somewhat less true in African countries, and more generally in countries with lower levels of economic development (FAO, 1998; Reardon, Berdegue and Escobal, 2001; Winters *et al.*, 2008). What is less clear is the role that rural non-agricultural wage activities play in providing a clear exit out of poverty for rural households and whether non agricultural wage employment is truly so distinguishable from agricultural wage activities or at what point in the development process this occurs. The key to participating in high value wage employment activities appears to be education. Along with influencing overall participation, education is closely linked to high wage employment.

2.7.4 Remittances

Remittances are the funds that migrants transfer from their destination country to their country of origin. They constitute a crucial component of rural households' incomes and a key element of the continued links between migrants and their home. Such transfers may be made on a regular basis and/or sporadically in the event of emergencies or special events by using both formal channels-such as banks and remittance agencies and informal channels such as the personal transport of items by the migrants themselves or migrating friends and relatives. In recent times, workers remittances have become a major source of external development finance. It is estimated that migrant remittance flows to developing countries now surpass official development aid receipts in many developing countries (Rutha, 2005). Migrant remittances are currently ranked as the second largest source of external inflows to

developing countries after foreign direct investment (FDI). Over the last decade, Nigeria has been recorded as the single largest recipient of remittance in SSA (Maibo and Rutha, 2005). Nigeria receives between 30 and 60 per cent of remittance to the region (Orozco, 2003). Remittance to Nigeria from various parts of the world was USD 2.8 billion in 2004 (World Bank, 2004), ranking second only to oil exports as a source of foreign exchange earnings. The majority of remittances in Nigeria are person to person flows mainly from the United States, The United Kingdom, Italy and other Western European countries. Some economists believe that inflows from abroad have been a key factor to the stability of Nigerian naira against other international currencies in the past two years. Estimate of remittances to rural as opposed to urban has not been given but increase in rural-urban migration presupposes that a substantial remittance flows to the rural area.

Remittances include current transfers from other households and an imputation of rent-free or subsidised accommodation by another household. Finally, the "other income" category includes a mixture of transfer payments (social security, pension receipts, private retirement benefits, educational scholarships) and factor incomes including dividends and interest on savings.

2.7.5 Poverty measures and income sources

Disaggregated household income data, including farm income, off-farm income, and monetary and in-kind transfer income were used to set relative poverty lines for each agro-ecological zone following World Bank (1996a) where two-third of the mean per capita income was used to set the poverty line for Nigeria. Poverty is pervasive among rural Nigerians, with poverty most pronounced in the dry savannah agro-ecological zone (69.6%) and relatively less pervasive in the moist savannah (54%) and the humid forest zone (53.8%). FOS (2004) also reports a poverty incidence of 57.8% for all Nigeria. The important determinant of the impact of agricultural research on poverty reduction is the share of farm income in total household income. In their study of poverty in relation to agricultural research in Nigeria, Alene, Mauyong and Tollens (2006), find that clearly, poor rural households derive more than two-thirds of their incomes from farming, with little variation across agro-ecological zones. In-kind and monetary transfers (for example remittances) are the second important sources of rural livelihoods, especially in the dry savannah. This is partly due to growing urbanisation and increased rural–urban migration. Their study also shows that off-farm incomes represent an insignificant source of rural income. Farm incomes being the

single most important sources of rural household incomes, agricultural research holds considerable promise to contribute to poverty reduction in Nigeria.

In Nigeria, Awoyemi and Adeoti (2004) used the standard Gini decomposition approach to examine the sources of income inequality in rural Nigeria. The results show that agricultural income contributed the most to total income, but found to increase income inequality. Non-farm income was found to decrease income inequality. It was recommended that to reduce income inequality, development efforts should be channeled towards improvement of rural human capital. Ssewanyana et al (2004) contend that in Uganda, non-farm income increased inequality, although not all sources of non-farm income have unfavorable effect on income distribution among the rural population.

Fields and Yoo (2000) proposed a regression-based method for analysing the contributions of socio-economic characteristics to change in labour income in Korea. It was found that between 1986 and 1993, the job tenure, gender, years of education and occupation explained the level of income inequality while education, industry, occupation and potential experience accounted for change in income inequality. Morduch and Sicular (2002) also propose a regression-based approach for decomposing income inequality. The approach provided an efficient and flexible way to quantify the roles of variables like education, age, infrastructure, and social status in a multivariate context. Using data from China, the results illustrated the sharp differences that can result when using decomposition methods with varying properties. Alayande (2003) decomposes income inequality in Nigeria with the Morduch and Sicular (2002) method. With 1996/1997 data, the Gini decomposition method reveals that primary and post-secondary educational attainments are important in reducing income inequality, while the number of unemployed persons in the households contributed positively to income inequality. Wan and Zhou (2005) applied a regression-based approach using a combined Box-Cox and Box-Tidwell income generating function to decompose income inequality in rural China. The results show that capital input and farming structure are the most significant factors explaining income inequality. Baye (2005) used the Shapley value for assigning entitlements in distributive analysis and assessed the within- and between-sector contributions to changes in poverty levels in Cameroon between 1984 and 1996. He finds that the within sector effects disproportionately accounted for an increase in poverty, but the between-sector contributions in both rural and semi-urban areas increased poverty. Araar (2006) used the Shapley value to decompose the Gini coefficient and generalize it to other inequality indices. It was concluded that, if well-interpreted, the analytical approach can give convincing results on the contribution of each component factor. Using data from

Cameroon, it was found that rural areas contribute less than the urban areas to total inequality while about two-thirds of the total inequality was explained by the non-food in the expenditure components decomposition. Kakwani (1990) explored the relation between economic growth and poverty, and developed the methodology to measure separately the impact of changes in average income and income inequality on poverty. This decomposition provides a link between macroeconomic adjustment policies and poverty, discussed in the context of the adjustment experience of Cote d'Ivoire. Son (2003) proposed a poverty decomposition approach that can be used to analyse changes in poverty over time into the following components: as the overall growth effect while assuming that inequality in the distribution does not change, the impact of differences in growth rates between the groups, the effect of the change in inequality within the different groups, and the impact of changes in the population shares of the various groups. Ravallion and Chen (2003) introduced the growth incidence curve (GIC) to measure the rate of growth over the relevant time period at each percentile of the distribution (ranked by income or consumption per person). Their rate of pro-poor growth is the mean growth rate of the poor, which gives the change in the Watts index per unit time divided by the headcount index. Ravallion (2004) submitted that the measure of the rate of pro-poor growth proposed by Ravallion and Chen (2003) is the ordinary rate of growth times a "distributional correction" given by the ratio of the actual change in poverty over time to the change that would have been observed under distribution neutrality. If growth is pro-poor, the rate of pro-poor growth will exceed the ordinary rate of growth. If the distributional shifts go against the poor, then it is lower than the ordinary rate of growth. Son (2004) also proposed a 'poverty growth curve' that measures whether economic growth is pro-poor or not pro-poor. The methodology was developed based on Atkinson's theorem linking the generalized Lorenz curve and changes in poverty. The approach seemed to give satisfactory results in some statistical investigation and testing with data from Thailand and some other cross-country data. Duclos and Wodon (2004) also proposed simple graphical methods to test whether distributional changes are pro-poor or not. Based on the definition of some terminologies, it was noted that the issue of whether pro-poor growth should be absolute or relative is of paramount importance and whether more emphasis should be placed on the impact of growth on the poorest population. Kalwij1 and Verschoor (2007) analysed the impact of globalisation on poverty by explicitly quantifying the responsiveness of poverty to aggregate changes in income in six developing regions between 1980 and 98 using the Shapley method. It was found that differential income growth accounts for most of the diversity in poverty trends, both across regions and over time but leaves a

substantial amount of variation unexplained. The impact of changes on inequality is relatively small, except in Eastern Europe and Central Asia.

2.8 Growth and Inequality Elasticities of Poverty

The *growth elasticity of poverty* is the rate of reduction in poverty resulting from a 1% increase in average income. If, for example, the growth elasticity of poverty is 2, then we would expect an increase in average income of 2% per year to yield a reduction of 4% per year in poverty. Previous research has shown that the value of the growth elasticity is lower in countries with higher inequality, as measured by the Gini coefficient (Ravallion 2001, Hanmer and Naschold 2000). This means that policies which reduce inequality will increase the amount of poverty reduction associated with economic growth. (By economic growth we mean the increase in average income). This is not to say such policies will necessarily increase the amount of poverty reduction however, as they may also lower the rate of economic growth. This is the well-known trade-off between growth policies and redistribution (Anderson, 2005).

The rate of economic growth required to reduce poverty to a certain extent depends on the elasticity of poverty with respect to economic growth. This elasticity depends on the level of the poverty line, the mean income, and income distribution (Kakwani, 1991, Datt and Ravallion, 1992 and Bourguignon, 2002; 2004). Most studies choose to use a constant value of the elasticity of poverty with respect to growth, for the sake of simplicity, although the elasticity of poverty with respect to economic growth varies with level of economic development and income distribution.

Some recent studies have gone one step further and attempted to quantify the responsiveness of poverty to income growth by estimating the "growth elasticity" of poverty, that is, the percentage change in poverty due to a 1 per cent change in *per capita* income. For instance, Ravallion and Chen (1997) find that the headcount index of poverty has a growth elasticity of -3.1, that is, a one per cent increase in per capita income was associated with a 3.1 per cent reduction in poverty. The same authors also find that when alternative poverty lines were used to measure the incidence of poverty, the estimated growth elasticity is higher for lower poverty lines. The implication is that the incidence of extreme poverty is even more responsive to growth in average living standards than the incidence of moderate poverty. In other words, not only does growth help the poor, it apparently helps the poorest of the poor more than the moderately poor.

In a straightforward statistical sense, economic growth can be expected to reduce poverty more if inequality falls, than if it does not. This expectation is confirmed by the previously cited study of Bruno *et al.*, (1998). For the same 20 developing countries, these authors regressed the rate of change in poverty on both the change in growth (change in the survey mean) and the change in inequality (as measured by change in the Gini coefficient). They obtain statistically significant coefficients of -2.28 for the growth variable and 3.86 for the inequality variable. In other words, even small changes in the overall distribution of inequality can lead to sizeable changes in the incidence of poverty. Kalwij and Verschoor (2007) present new and detailed empirical evidence on the role of the distribution of income in the responsiveness of poverty to income growth and changes in income inequality. For this purpose they employed panel data of 58 developing countries for 1980 to 1998. They examined in detail, first, the role of the distribution of income in determining both the income and Gini elasticities of poverty and second, the extent to which differential distribution of income explains the large cross-regional variation in the income elasticity, and differences in regional experiences in poverty reduction. Their empirical analysis shows that the large cross-regional variation in the income elasticity of poverty can largely be explained by differences in the initial distribution of income. Based on this finding, they present region and time specific estimates of income and Gini elasticities of poverty. The analysis further shows that while differing income growth rates account for most of the regional diversity in poverty trends, the additional impact of differences across regions in rates of inequality change and income as well as inequality elasticities of poverty is almost always significant and far too large to be ignored. Some influential recent studies are remarkably unreserved about giving primacy to the role of growth, on the grounds that, on average, the incomes of the poor tend to grow at the same rate as those of the rest of society (Roemer and Gugerty, 1997; Timmer, 1997; Gallup *et al*., 1999; Dollar and Kraay, 2002); the elasticity of mean income of the poor with respect to the all-sample mean income is in all these studies found to be remarkably close to unity. Moreover, studies that make use of a poverty headcount measure generally find an income elasticity of poverty reduction well in excess of two (Ravallion, 1995;Ravallion and Chen, 1997; Bruno *et al*., 1998; Ravallion, 2001; Adams, 2004). With 10 per cent income growth appearing to increase the incomes of the poor by 10 per cent and reduce the proportion of the population in poverty by at least 20 per cent, its elevated status as the "royal avenue" for eradicating material hardship should come as no surprise.

To test these relationships, and to pinpoint more accurately the impact of economic growth on poverty and inequality, it is necessary to construct a new empirical data set. This

data set should do three things: first, it should focus on the developing countries of the world; second, it should utilise the results of household budget surveys, since these surveys represent the best source of poverty information in most developing countries, and third, it should include complete growth, poverty and inequality for as many countries and time periods as possible. Other observers have built such datasets to examine the impact of growth on poverty. Deininger and Squire (1996), for example, constructed a comprehensive data base on income distribution for some countries. During the 1990s the growth elasticity of poverty was usually estimated to be between -2.0 and -3.0 (Adams, 2003; Bruno, Ravallion, and Squire, 1998; Ravallion and Chen, 1997).This means that a 10 per cent increase in economic growth (however measured) will lead to a 20 to 30 per cent decrease in poverty (however measured). In other words, in a large enough selection of developing countries in which exactly half of the population lives in poverty, a 10 per cent increase in economic growth will reduce the proportion of the poor population to between 35per cent and 40per cent. New estimates made by Bhalla (2002) suggest, however, that these growth elasticities of poverty are too low, and that the ‘‘correct’’ growth elasticity of poverty should be about -5.0. In other words, in a large selection of developing countries, the same 10 per cent increase in economic growth will reduce the percentage of the poor to about 25 per cent, rather than to between 35per cent and 40 per cent. The difference between these ‘‘traditional’’ and ‘‘new’’ estimates of the growth elasticity of poverty is neither trivial nor academic. Many international agencies—such as the World Bank—and governmental organisations—such as the United States Agency for International Development (USAID)—spend much time and energy trying to calculate the number of poor people in the developing world. When projected into the future, all of these calculations hinge on the central question: how much does the number of poor people decline with a given rate of economic growth? Thus, using the lower, ‘‘traditional’’ growth elasticities of poverty, the World Bank (1999) recently estimated that there were 1.15 billion people living under the international poverty standard of $1.00 per person per day, while Bhalla (2002, p.202), using the ‘‘new,’’ higher growth elasticities of poverty found that less than one-third that number of people—450 million—were living under that poverty standard. Ravallion (2000), Ravallion and Chen (1997), and Bruno (1998) found that the elasticity of the headcount ratio is typically higher than two, or in other words, when average income increases by ten per cent, the proportion of poor declines by more than 20 per cent. Other authors, such as Morley (2000), De Janvry and Sadoulet (2000), and Smolensky *et al*. (1994) reported a smaller elasticity of around one per cent, but these are obtained from a smaller sample of countries. Ravallion and Chen (1997) also used poverty

lines that combine an absolute and a relative component. Their elasticities are highly sensitive to where the poverty line is located. The elasticity of poverty to growth ranges from -2.59 to -.69 depending on whether the threshold is established at 50 or 100 per cent of the average income observed at the initial period of observation. Kalwij and Verschoor (2007) examined the role of the distribution of income in determining the responsiveness of poverty to income growth and changes in income inequality using panel data of 58 developing countries for 1980 to 1998. They show that large cross-regional variation in the capacity of income growth reduce poverty, that is, the income elasticity, is largely explained by differences in the initial distribution of income and present region and time specific estimates of the income and Gini elasticities of poverty. The study also reveals that income elasticity of poverty in the mid-1990s equals -1.31 on average and ranges from -0.71 for Sub-Saharan Africa to -2.27 for the Middle East and North Africa, and that the Gini elasticity of poverty equals 0.80 on average and ranges from 0.01 in South Asia to 1.73 in Latin America. Further, they show that while differing income growth rates account for most of the regional diversity in poverty trends, the additional impact of differences across regions in rates of inequality change and income and inequality elasticities of poverty are almost always significant and far too large to be ignored, most notably so in Eastern Europe and Central Asia. Indeed, policies recommended or pursued in the name of poverty reduction in developing countries are often exclusively targeted at promoting average income growth. For example, the opening of a country's borders to international trade is said to be a powerful engine of poverty reduction because it promotes approximately distribution-neutral income growth: the incomes of the poor grow by the same proportion as the incomes of the non-poor as a result of trade liberalisation (Dollar and Kraay, 2004). Their analysis identifies considerable regional variation in the responsiveness of poverty to income growth; they also presented variation over time. Besley and Burgess (2003) estimated the income elasticity of poverty by region and find substantial and significant differences: for example, poverty appears to be twice as responsive to growth in East Asia as it is in Sub-Saharan Africa. Kalwij and Verschoor (2007) analysis provides an explanation for this finding of Besley and Burgess (2003) by showing that the variation in the income elasticity of poverty across regions is largely accounted for by regional differences in the initial distribution of income. The second major reason to remain concerned about inequality, even when it does not move systematically with growth (Deininger and Squire, 1998), is that changes in its value may nonetheless have a large impact on poverty. Whereas in the past, monitoring the evolution of inequality may have been ''like watching the grass grow'' (Atkinson and Bourguignon, 2000), in Eastern Europe and Central Asia the Gini

coefficient of inequality skyrocketed during the 1990s. It must therefore be important to explicitly quantify the contribution of changes in inequality to the region's equally unprecedented increase in levels of poverty. Time and region specific Gini elasticities of poverty were presented. The analysis by Kalwij and Verschoor (2007) also shows that the responsiveness of poverty to changes in Gini varies considerably across regions, again due to regional differences in the initial income distribution. The Gini elasticity of poverty is especially high in Eastern Europe and Central Asia, mainly because of its initially relatively low levels of inequality, and together with the observed strong increase in Gini explains a considerable part of the increase in poverty in this region.

Until recently the conventional wisdom has been that the elasticity of poverty with respect to growth would be high for low income countries because a large number of people are clustered around the poverty line. It was found that African countries with low initial levels of per capita income and high income inequality need very high growth rates and/or reduction in income inequality to achieve the MDGs. The relative contributions of economic growth and income distribution to the poverty reduction depend mainly on the relationship between growth and income inequality. A high elasticity of the trade-off means that a small reduction in inequality can lead to substantial decline in poverty, or conversely, maintaining this level of inequality requires higher rate of growth to achieve a small decline in poverty. A low elasticity implies that what matters for poverty reduction is mainly accelerated economic growth. The attainment of MDG1 is thus very much dependent on the specific circumstances prevailing in each country (Bigsten and Shimeles, 2005). Africa suffers from deep-seated, structural problems that propagate poverty. There is an abundance of empirical research trying to explain Africa's poor economic performance, mainly based on information on macroeconomic aggregates.

A wide range of factors have been identified ranging from macroeconomic instability (caused by several external and domestic shocks) to a set of initial conditions, such as geography (Sachs and Warner; 1997), ethnic fractionalisation and conflict (Collier and Hoffeler, 1998), "bad" policies (Sachs and Warner, 1997; Collier and Dollar, 1999; Easterly, 2000); poor governance (Barro,1997), weak institutions (Acemalogu, Johnson, and Robinson, 2002; Rodrik *et al*, 2002), and low level of human capital. Recently, Sachs *et al* (2004) argued that there are three forms of poverty traps in Africa: the saving, the demographic and the low capital-threshold.

2.8.1 Growth Strategies and Poverty Reduction

A change in poverty over time contains components attributable to the rate of economic growth, the response of poverty to that growth and changes in income distribution. This decomposition of changes in headcount poverty has proved to be very informative about the reasons for variations in the rate of poverty reduction across countries. A method proposed by Datt and Ravallion (1992) allows a decomposition of country –level poverty changes into a growth component and an inequality component. The growth component reflects the rate of growth and poverty response to it (the elasticity of poverty with respect to growth) whereas the inequality component reflects changes in distribution. Kraay, (2005, 2006) presents a variance decomposition method that further attributes the variation in the Datt- Ravallion growth component to variation in the growth rate and the elasticity. These two components can then be combined with the inequality component to produce three part decomposition of changes in poverty.

At shorter horizons, variations in inequality and poverty elasticity can matter, but on average, the effect is small. Moreover, as emphasised by Kraay (2005, 2006), the source of variation in the income distribution and elasticity component is poorly understood. Nonetheless, the elasticity of poverty (which is presumed to be negative) is larger in absolute value when inequality is lower and mean income is higher. The intuition, as explained by Heltberg (2004) turns on the fact that the elasticity refers to the percentage change in poverty and not the change in headcount poverty itself. Thus, when income distribution is more equal, more households fall below any given poverty line and the percentage income changes are thus smaller when the distribution shifts. Similarly, the higher mean income is above the poverty line, the fewer households there are in poverty, generating bigger percentage changes in poverty from a change in mean.

Gallup *et al*. (1998) have come to the same conclusion using somewhat different methodologies. The growth-inequality relationship took centre stage during the 1980s, and only recently has there been renewed interest on the question of whether the poor specifically rather than all sectors of society share the benefits of growth proportionally. Recent studies follow two different approaches for classifying the population into poor and non-poor. The first uses a relative concept of poverty by estimating the growth elasticity of the per capita income of individuals in the first quintile of the distribution. There are two opposing views on the relation. While Roemer and Gugerty (1997), Gallup *et al*. (1999), and Dollar and Kraay (2000) argue that the elasticity is practically one, Timmer (1997) obtains an elasticity of around 0.8. Although these four studies use the same data and similar econometric

techniques, they disagree on whether growth in average income leads to a one-to-one improvement in the incomes of the poor, or to considerable smaller gains for this group. The second approach has been to examine the growth elasticity of poverty defined in absolute terms. Ravallion (2000), Ravallion and Chen (1997), and Bruno *et al*. (1998) found that the elasticity of the headcount ratio is typically higher than two, or in other words, when average income increases by ten per cent, the proportion of poor declines by more than twenty per cent. Other authors, such as Morley (2000), De Janvry and Sadoulet (2000), and Smolensky *et al.* (1994) reported a smaller elasticity of around one per cent, but these are obtained from a smaller sample of countries. Ravallion and Chen (1997) also used poverty lines that combine absolute and relative components. Their elasticities are highly sensitive to where the poverty line is located. The elasticity of poverty to growth ranges from -2.59 to -0.69 depending on whether the threshold is established at 50 or 100 per cent of the average income observed at the initial period of observation.

Based on cross-country African data, Ali and Thorbecke (2000) found that poverty responds more to income distribution than to growth. More recent studies have focused on the role of initial inequality in the impact of growth on poverty. For example, Ravallion (1997) and Easterly (2000) estimated the income–growth elasticity of poverty as a decreasing function of inequality. Ali and Thorbecke (2000) and Fosu (2008) arrived at a similar conclusion about the inequality impact on the income elasticity of poverty. Adams (2004) also found that a sub-sample of countries with a higher level of inequality exhibits a smaller growth elasticity of poverty. On the assumption of a log-normal distribution of income, Bourguignon (2003) and Epaulard (2003) estimated equations that assume that the income–growth elasticity, for instance, depends on the ratio of the poverty line to mean income as well as on initial inequality. Based on similar specifications as in Bourguignon (2003), Kalwij and Verschoor (2007) reached similar conclusions as in Bourguignon (2003) and Epaulard (2003), and emphasized regional diversity in poverty responsiveness to growth and inequality. There is thus a pay-off in poverty reduction from growth but also of lower initial inequality and reductions in inequality during the growth process.

Fosu (2009) explored the extent to which inequality influences the impact of growth on poverty reduction, based on a global sample of 1977 to 2004 unbalanced panel data for SSA and non-SSA countries. Several models are estimated, with growths of the headcount, gap and squared gap poverty ratios as respective dependent variables, and growths of the Gini and PPP-adjusted incomes as explanatory variables. For both SSA and non-SSA samples and for all three poverty measures – headcount, gap and squared gap – the paper finds the impact

of GDP growth on poverty reduction as a decreasing function of initial inequality. The study additionally observed that higher rates of increases in inequality tend to exacerbate poverty, with the magnitude of this effect rising with initial income. The income-growth elasticity, moreover, tends to increase with mean income relative to the poverty line. It has been estimated that for any appreciable reduction in poverty to be achieved in SSA, an annual growth rate of 6.5 per cent is required (World Bank, 1996). For Nigeria, whose growth has been described as less pro-poor, it is estimated that, given a population growth rate of 2.9 per cent, the country's growth elasticity with respect to poverty is –1.45 (World Bank, 1996, HDR 1996), which implies that a one per cent increase in income reduces poverty by 1.45 per cent.

2.9 A General Framework for Decomposition Analysis

A general overview of the decomposition issue is presented by Shorrocks (1999). Let I be a statistical indicator representing a poverty or inequality measure, and let Xk, k = 1, 2,…,m be a set of contributory factors to the value of I. we can write:

$I = f(X_1, X_2,\ldots Xm),\ldots\ldots\ldots$ 2.3

The goal of all decomposition technique is to attribute contributions, Ck, to each factor, Xk, so that, ideally, the value of I will be equal to the sum of the m contributions.

Using Shapley Solution to Decompose Poverty Measures

As an illustration of Shapley solution, let N=(1,2,3,…, n) represents a set of players who must share a surplus or loss among themselves. To achieve this, the players may form coalitions, that is, subsets, S, of N. The worth of a coalition represents the maximum payoff that the coalition can generate and divide among its members and is expressed as a characteristics function, v. The theory is concerned with finding a solution concept that is one-point solution for every game. The payoff to a given coalition S, v (S) measures the share of the surplus that S is able to appropriate without resorting to agreements with players belonging to other coalitions.

A Shapley solution concept that yields a unique outcome in a large class of game is the Shapley (1953) value. It is defined by several conditions, called the Shapley axioms, and is characterised by a specific function that gives the payoff to each player as a function of the characteristic function of the game. The axioms are linearity, symmetry and the dummy player axiom.

The only function that satisfies shapely axioms is given by the Shapley values of a player computationally given by

$$\phi_i = \sum_{S \subset N} \frac{(s-1)!(n-s)!}{n!} \left(v(S) - v(S\{i\})\right) \quad \ldots\ldots\ldots\ldots\ldots \quad 2.4$$

Where: N is the grand coalition, n is the number of players in N, s is the number of players in S, and V(s) is the value of coalition S.

Consider a poverty measure I defined in equation (2.3), the value which is completely determined by a set of m contributing factors X_k, where $k \in K = (1,2,\ldots,m)$. I may be a static measure of poverty or it may represent their variation over time. As earlier mentioned, the value of the contribution assigned to any given factor depends on the order in which the factors appear in the elimination sequence (Shorrocks, 1999). In other words, the m factors are ranked in some order of elimination and are not treated symmetrically. Now, consider F (S) the value assumed by I when the factors X_k, $k \in S$ are eliminated, that is, when only the subset of factors S is considered. The model structure will be characterised by (K,F), that is, set of K factors of "factor indices" and a function F: $[S/S \subseteq K) \rightarrow R$. It is convenient to assume that I will equal to zero when all the variables are eliminated, since the value of I is entirely determined by the variables that is, F(Ø) = 0. The decomposition of (K,F) yields the set of real values Ck, $k \in K$, Ck measure the contribution of each factor, k, and can be written as:

Ck = Ck (K,F), $k \in K$, for any possible model (K,F).

Two properties are required of this decomposition. First, the symmetry ensures that the value does not depend on the labelling of players. Symmetry is a property of anonymity, in other words the payoff of an agent should not depend on his/ her name. Second is the property of exactness and additivity so that:

$$\sum_{k \in k} C_k (K,F) = F(K), \quad \forall (K,F) \ldots\ldots\ldots \quad 2.5$$

If additivity condition holds, C_k (K,F) can be interpreted as the proportion of observed inequality or poverty in I attributable to factor k. In addition, it should be possible to interpret the contributions of the factors in an intuitively appealing way. In this respect, we could interpret the contribution of each factor k as its marginal impact, yielding:

M_k (K,F) = F(K) – F(K) – F(K – [k]), $k \in K$…… 2.6

When the condition or rule expressed in 2.6 holds, the decomposition is symmetric but will not normally yield an exact decomposition. The marginal impact of each of the factors when they are eliminated in sequence may also be considered. Let σ = (σ_1, σ_2, …. σm) be the order in which factors are eliminated, and let S (σ_1, σ) = [σ_1,1i>r) be a set of all factors remaining after factor σ1 has been eliminated. The marginal effects are given by:

$$C^{\sigma}{}_{k} = F(S(k,\sigma)\cup\{k\} - F(S(k,\sigma)) = \Delta_k F(S(k,\sigma)), k \in K \quad \ldots\ldots\ldots\ldots \quad 2.7$$

Where: Δk F(S) = F(S U [k]) – F(S), S ≤ K – (k), is the marginal impact of adding factor k to set S. Using the fact that S(σr, σ) = S(σr+1, σ) U (σr+1) for r=1,2,…m - 1

We deduce that:

$$\sum_{k\in K} C^{\sigma}{}_{\sigma_r} = \sum_{r=1}^{m} C^{\sigma}{}_{\sigma_r} = \sum_{r=1}^{m}\left[F(S(\sigma_r,\sigma)\cup\{(\sigma_r,\sigma)\}\right]$$

= F(S(σ_1, σ) ∪ (σ_1]) – F(S(σ_m, σ)) = F (K) – F(θ)=F(K)……. 2.8

Equation (2.8) yields the exact value of F(K), since F(θ) = 0. However, each factor's contribution depends upon its rank in the list, that is, elimination path. So, the factors are not treated symmetrically. However, the global value F(K) is the same regardless of the permutation of the factors. Thus, the "path dependence" problem may be remedied by considering the m! possible elimination sequences, denoted here by the set Ω, ($\sigma \in \Omega$) and by computing the expected value of $C^{\sigma}{}_{k}$ when the sequence in Ω are chosen at random (Shorrocks, 1999). This yields the decomposition rule Cs given by:

$$Csk(K,F) = \frac{1}{m!}\sum_{\sigma\in\Omega} C^{\sigma}{}_{k} = \frac{1}{m!}\sum_{\sigma\in\Omega}\Delta_k F(S(k,\sigma))$$

$$= \sum_{s=0}^{m-1}\sum_{\substack{s\subset K-\{k\}\\ /S/=s}}\Delta_k F(S) = \sum_{s=0}^{m-1}\sum_{\substack{s\subset K-\{k\}\\ /S/=s}}\frac{(m-1-s)!s!}{m!}\Delta_k F(S) \quad \ldots\ldots\ldots\ldots\ldots \quad 2.9$$

The decomposition Cs (in equation 2.9) is exact, additive, symmetric, economically relevant and analytically meaningful. The last term corresponds to the Shapely value defined in equation (2.4). We shall refer to this relationship as the Shapely decomposition rule (Shorrocks, 1999). The contribution of each factor, k, may be interpreted as its expected marginal impact when all possible elimination paths are considered. The factorial [(m – 1 – s)!s!m!] is also denoted π(s,m-1) by Shorrocks (1999), is a weight. It gives the probability of

choosing the subset S, of size s, in a large set M with m-1 elements when each subset whose size is between 0 and m-1 has the same likelihood.

In the light of the above, when assigning contributions to subgroups of the population, like rural and urban sectors, such indices enable the overall degree of poverty, P, to be written as:

$$P\sum_{k=1}^{m} v_k P_k \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 2.10$$

Where: V_k and P_k respectively indicate the population share and poverty level associated with subgroup $k \in [1.2]$. If our population is partitioned into m sectors, then factor k is the level of poverty within these two sectors, and the question of interest is the contribution which this factor makes to the level of poverty in Nigeria. Using the notions above, the model structure (K,F) is defined by:

$$F(S) = \sum_{k \in s} Vk \; Pk$$

so $\Delta_k F(S) = V_k P_k$ for all $S \subseteq K \{k\}$ …… 2.11

Since eliminating poverty in a sector k reduces aggregate poverty by the Vk Pk regardless of the order in which the sector are considered, it follows that these values yield both the first round marginal effects and the terms in the Shapely decomposition.

2.9.1 Measurement of Poverty

Foster and Székely (2000) raised an important methodological issue of tracking down the income of the poor; by probing how can the standard of living of the poor be measured? In the poverty literature, the traditional method is to first specify a poverty line below which a person is identified as poor, and then measure the aggregate deprivation suffered by those who are identified as the poor. Thus, the measurement of poverty involves two distinct issues, namely, identification and aggregation. It is the aggregation issue that has attracted most attention in the literature. The percentage of the population falling below the poverty line, or the headcount ratio, is the most widely used measure of poverty. This ratio does not reflect the intensity of poverty suffered by the poor. It was Sen's (1976) seminal paper that pointed out that all the poor below the poverty cannot be treated alike. Some poor are poorer than others, so the poor should be given different weights depending on the degree of deprivation

suffered. This view was supported by Kakwani (2000.) According to him, the headcount ratio is a crude measure of poverty. The percentage of the population that is poor does not reflect the intensity of poverty suffered by them. A suitable measure of poverty should take into account the following three indicators of poverty: (i) percentage of poor; (ii) aggregate poverty gap; and (iii) distribution of income among the poor. Suppose income x of an individual is a random variable with distribution function given by F(x). Let z denote the poverty line, then H = F(z) is the proportion of individuals whose income falls below the poverty line or H is the proportion of poor in the society. H is the most popularly used poverty measure and is called the headcount ratio.

Following Greeley (1994), Foday-Lamin (1996), Gibson (2001) as well as Mukherjee and Benson (2003) general class of a poverty measure which combines these three characteristics of poverty can be written as:

$$P_{\alpha}(y,z) = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z-y_i}{z}\right)^{\alpha} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2.12$$

Where: n = total number of households in population

q= the number of poor households

Z= the poverty line

y_i=household per capita expenditure

α =poverty aversion parameter and takes on values 0, 1, 2.

$\left(\frac{z-y_i}{z}\right)$= proportionate shortfall in income below the poverty line.

α takes on value value 0, 1, 2 to determine the type of poverty index.

When: α =0, the expression reduces to

$$P_0 = \left(\frac{1}{n}\right)q = \left(\frac{q}{n}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2.13$$

This is referred to as the Headcount Ratio (Poverty incidence) describing the proportion of the population that falls below the poverty line. This measure gives equal weight to all poor irrespective of the intensity of their poverty. The headcount ratio has been criticised for focusing only on the number of the poor and being insensitive to the severity of poverty and to changes below the poverty line. That is, it treats all the poor equally whereas not all the poor are equally poor. Also, neither a transfer from the less poor to the poorer, nor a poor person becoming poorer would register in the index, since the number of the poor would not have changed.

When α =1, the expression in equation (2.12) reduces to:

$$P_1 = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z-y_i}{z}\right) \quad \text{..... 2.14}$$

And this is called the Poverty Gap (depth of poverty). Each poor is weighed by his or her distance from

the poverty line, relative to z.

When α =2, the expression now becomes

$$P_2 = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z-y_i}{z}\right)^2 \quad \text{..... 2.15}$$

Equation (2.15) is called Poverty Severity Index. In this measure, the weight given to each poor is proportional to the square of his or her income shortfall from the poverty line. This index weighs the poverty of the poorest individual more heavily than those just slightly below the poverty line. This measure satisfies all the three indicators of poverty stated above.

2.9.2 Growth and Redistribution Components of Changes in Poverty Measures

According to Datt and Ravallion (1992), there is often an interest in quantifying the relative contribution of growth versus redistribution to changes in poverty measures. For example one might want to assess whether shifts in income distribution helped or hurt the poor during a period of economic contraction. Several studies in the Indian context have been pursued to assess the impact of economic growth on poverty. For example, Ahluwalia (1978) cited evidence in favour of agricultural growth trickling down to benefit the poor in rural India. Jain and Tendulkar (1990) examined the relative strengths of growth and redistribution in changing the headcount ratio of poverty over the period 1970/71 to 1983. Among such studies is that of Datt and Ravallion (1991). Their study shows how changes in poverty measures can be rigorously decomposed into growth and redistributional effects using recent data for India and Brazil. The recent history of poverty in the two countries is of interest from a number of points of view. In Brazil, the 1980s witnessed much lower income growth rates than the 1970s. The effect on poverty of this aggregate stagnation is of concern in the light of the widely held belief that inequality in Brazil has also worsened in the 1980s. The effects on the poor of the macroeconomic shocks and adjustments of the 1980s in Brazil are of concern. By contrast, reasonable growth rates were sustained in India during the 1980s and unlike many other developing countries, India survived the period without significant macroeconomic disturbances. The mid to the late 1980s however witnessed lower GDP growth rates overall as a result of low or negative growth rates in agriculture. The failures

were accompanied by concerted efforts to protect the poor though no evidence yet as to whether or not those efforts were successful in avoiding an increase in poverty in the late 1980s, and what contribution distributional changes made. In comparing the two countries, the results indicate quite different impacts on the poor of distributional changes over the 1980 though the differences are more marked in some sub-periods than others. A similar study was again conducted in India by Bhanumurthy and Mitra (2004). The study decomposed the change in poverty over two time points in terms of pure growth effect (holding inequality constant), inequality effect (holding growth constant), and population shift effect. The two periods under consideration are 1983 to1993/94 and 1993/94 to 1999/2000, for two regions i.e urban and rural in 15 major Indian states and at all Indian level. Using the decomposition methodology developed by Kakwani (2000) and Majumdar and Son (2002), the study indicates that while the growth /mean effect has been dominant and has resulted in decline in the incidence of poverty in both periods and in most of the states, inequality, which in general rose in the process of growth, raised the poverty ratio at the all-India level. In the rural areas of a large number of states, the inequality effect turned out to be beneficial during the reform period. In the urban areas of several states and all-India level the adverse effect of inequality fell considerably in the reform period compared to the pre-reform period. The population shift effect, which measures the net effect of a rise in (and fall in) the percentage of population residing in urban (and rural) areas on the incidence of poverty, appeared to be beneficial in at least seven of the 15 major Indian states in both periods.

Using the approach proposed by Jain and Tendulkar (1990) Lin (2003) carried out a study on economic growth, income inequality and poverty reduction in China. The decomposition of growth effect served as an important analytical tool in identifying the impact of growth and inequality on poverty reduction. The empirical study yields several important reports. First, poverty impact decomposition using different poverty measures indicates that between 1985 and 2001, growth had led to significant poverty reduction but worsening inequality had a negative impact on poverty reduction. The poverty headcount is estimated to decline by 42.41 per cent between 1985 and 2001, with 17.77 per cent between 1985 and 1990, 14.61 by per cent between 1990 and 1995, and 10.04 per cent between 1995 and 2001. Second, the impact of growth on poverty reduction has declined over time. The impact of growth on poverty reduction in 1985 and 1990 was more effective than that in other periods. The negative impact on poverty reduction from inequality has increased over time. Using the headcount ratio, the inequality component made growth only 6 per cent less effective in poverty reduction in 1985which has increased to about 27 per cent by 2001. In

their study of Iran, Assadzadeh and Paul (2004) examine changes in the extent of poverty in Iran from 1983 to 1993. More specifically, their study investigates the contributions of growth and redistribution factors to changes in poverty over the period. The analysis is based on household-level data relating to three household income and expenditures surveys of 1983, 1988, and 1993. The study reveals that the extent of poverty in the rural sector declined slightly whereas in the urban sector it increased significantly. Decomposition of changes in poverty into growth and redistribution components indicates that in each sector the redistribution component was positive, implying that the deterioration of income inequality contributed to the worsening of poverty. The growth component, however, affected the two sectors differently: it contributed to a reduction in poverty in rural areas and an increase in urban areas.

Kakwani (1993) carried out a study on poverty and economic growth in Cote d'ivoire. The methodology decomposed poverty into growth and redistribution components. In other words, a change in poverty into two components- one relating to a change in average income and the other to income inequality. Change in poverty was decomposed into: The impact of growth when the distribution of income does not change; and the effect of income redistribution when the total income of the society remain unchanged. The study indicated that economic growth may or may not be accompanied by redistribution of income. Generally, economists consider that "trickle down" occurs when there is a reduction in poverty, however small for any positive growth in per capita income. It will be more useful to say that "trickle down" occurs when the poor are receiving benefits at least equal to the growth rate in which case the inequality component will be non-positive. The magnitude of the inequality component thus provides a useful measure of the degree of "trickle down" (Kakwani and Sabbarao, 1992). The analysis provides a link between the growth rates in various sectors of the economy and the total poverty. Poverty was found to be highly sensitive to economic growth and should decrease faster than the economic growth rate provided the growth process does not lead to an increase in income inequality. However, if inequality deteriorates during the course of a country's economic growth, poverty may even increase within economic growth, because poverty measures were found to be considerably more elastic for changes in mean income (Kakwani, 1993).

2.9.3: Measurement of Inequality and its decomposition

In their study of inequality and its trends in Sri Lanka**,** Gunatilaka and Chotikapanich (2005), used Shapley value decomposition methodology to disaggregate total inequality and

its changes into contributory factors. The study shows that income inequality in Sri Lanka rose after economic liberalisation even as all income groups ended the period enjoying higher levels of income than they had at its beginning. The principal determinants of inequality change were access to education, occupation and infrastructure. The finding also suggests a growth-equity trade off: economic liberalisation and economic growth has caused inequality to rise in a stereotypical Kuznets-like phenomenon.

Achieving equitable distribution of income and alleviation of poverty has for some time been a major development objective. Fields (1988) has observed that inequality changes over time in many countries. He arrived at the conclusion that there is no tendency for inequality to increase systematically with economic growth or to decrease either-inequality increases as often as it decreases. In more than 50 per cent of the countries observed by Fields (op.cit), economic growth was accompanied by either decrease in inequality or no change.

According to Ahluwalia et al (1979), concern has been expressed by many economists that the benefits of growth have not reached the world's poor. They stated further that the growth processes underway in most developing countries are such that incomes of the poor groups increase more slowly than the average. The degree of poverty depends upon two factors – the average level of income and the extent of inequality in income distribution. The increase in average income reduces poverty and the increase in inequality increases it. A general impression among economists seems to be that poverty has remained at a higher level largely due to the worsening income inequality (Ahluwalia, 1974). Keeping in view these outcomes in the process of economic growth, his paper makes an attempt to decompose the change in poverty over two time points in terms of pure growth effect (holding inequality constant), inequality effect (holding growth constant), and population shift effect. Such an analysis enables a critical analysis of the policy issues and offers a deeper understanding of the reform process. However, it may be noted that in doing such an exercise only the expenditure inequality has been considered, a gross underestimate of income/asset inequality. Similarly, the growth effect is envisaged in terms of mean effect, the mean of consumption expenditure per capita which is again a gross underestimate of per capita income. As data on income and its distribution is not available, these crude proxies are followed based on the National Sample Survey data on expenditure per capita and its size distribution. In assessing the population shift effect the percentages of population residing in urban and rural areas are considered which in addition to rural−urban migration includes also the differentials in rural−urban natural growth of population, and the rise (fall) in the level of urbanisation (percentage of rural population) due to reclassification of areas. Hence, it may not be justified

to perceive the population shift effect purely in terms of rural−urban migration which can again comprise interstate as well as intrastate streams not deciphered in this study. While interpreting the results, these limitations, therefore, need to be kept in view. Several studies in the Indian context have been pursued to assess the impact of economic growth on poverty. Ahluwalia (1978) cited evidence in favour of agricultural growth trickling down to benefit the poor in rural India. Jain and Tendulkar (1990) examined the relative strengths of growth and redistribution in changing the headcount ratio of poverty over the period 1970/1 to 1983. Mitra (1992) shows that the impact of industrial growth on urban poverty was only nominal, reconfirmed by Ravallion and Datt (1996) in the case of rural as well as urban areas. Overall, the debate around growth and poverty seems to have arrived at a consensus that growth is necessary but not sufficient, for poverty reduction. Growth is said to be pro-poor when it is labour absorbing and accompanied by policies and programmes that mitigate inequalities and facilitate income and employment generation for the poor, particularly women and other traditionally excluded groups (ADB 1999). It is defined as what enables the poor to actively and directly participate in and significantly benefit from economic activity (Kakwani and Pernia 2000). Chen and Ravallion (2000), for instance, have argued that continuing poverty in many countries is the result of persistent inequalities both economic and non-economic that prevented the poor from participating in the growth that did occur. Hence, a strategy that is biased in favour of the poor to enable them to benefit proportionally more than the rich needs to be the basis of pro-poor growth (Kakwani and Pernia 2000).

Decomposing the change in the poverty index into a growth and distribution effect was initiated by Kakwani and Subbarao (1990) and Jain and Tendulkar (1990) while quite a few alternative decomposition methods have been developed subsequently, for example by Datt and Ravallion (1992), Kakwani (2000), and Mazumdar and Son's (2002). This study will employ the Shapley decomposition approach which will decompose poverty into growth and redistributin components without residual which is the gap in knowledge.

In Nigeria, Aigbokhan (2000) also carried out a study on poverty, growth and inequality. He used absolute poverty approach and Gini coefficient to measure the extent of poverty and inequality among rural households. The finding suggests that there is evidence of increased poverty, inequality and polarisation in distribution during the 12 years covered by the study. While polarisation in income distribution increased between 1985 and 1992, it decreased slightly between 1992 and 1996. The study also shows evidence of poverty being more pronounced among male-headed households, in rural areas and the northern

geographical zones. The study also notes that there is positive real growth throughout the period studied, yet poverty and inequality worsened.

As stated by Araar and Awoyemi (2006), based on distributive analysis, two main factors can explain the level of poverty. The first is the average standard of living which reflects the level of development of the country while the second is the shape of the distribution of income. This paper is devoted to explore the link between inequality and poverty. In their study of income inequality in Nigeria, some theoretical developments were provided to estimate the contribution of inequality components to total poverty.

Inequality components can be the between and within group inequalities or inequality in income sources. With theoretical frameworks developed using the Nigerian Living Standard Survey for the year 2004. The main lesson drawn from these results is that redistributive policies cannot be the main tool to fight poverty when the country is very poor. Hence, the best option is to improve the general economic performance.

Awoyemi and Adeoti (2004) used the standard Gini decomposition approach to examine the sources of income inequality in rural Nigeria. Their results show that agricultural income contributed most to total household income but found to increase income inequality. Non- farm income was found to decrease income inequality. Using Gini coefficient as a measure of inequality, Awoyemi (2004) submits that household size has negative and highest impact on the level of household consumption. The study also attributed the highest share of income inequality to household size. Education, age, and productive hours committed to primary occupation were also found to impact positively on the level of income.

Alayande (2003) decomposed income inequality in Nigeria using the Morduch and Sicular (2002) method. With 1996/1997 data, the Gini decomposition method reveals that primary and post secondary educational attainments are important in reducing income inequality while the number of unemployed persons in the household contributed positively to income inequality.

Oyekale *et al* (2006) decomposed income inequality in Nigeria using the Gini decomposition, regression-based and Shapley approaches. His findings show income inequality to be higher in rural areas than in urban areas. The study also notes that employment income increases inequality while agricultural income decreases it.

In Nigeria, given the low labour absorptive capacity of the industrial sector, broad-based economic growth should be encouraged. This should focus on capital formation as it relates to capital stock and human capital. Human capital formation has to do with education, health, nutrition and housing needs of labour. This is obvious from the fact that investment in

these sources of human capital improves the quality of labour and thus its productivity. Hence, to ensure growth that takes care of poverty, the share of human capital as a source of growth in output has to be accorded the rightful place (Ogwumike, 2002).

2.10: Concepts and terms in the Study

Economic Growth

Economic growth in this study refers to change in *per capita* expenditure over years. It refers to growth which enables the largest number of people, especially those less advantaged and poor, to participate in wealth creation and benefit proportionately more from the increased availability of public and private resources. That is, it is aimed at the society which is fairer in the distribution of opportunities and rewards.

Economic Development

According to Scott (1995) economic development has been defined as growth in real per capita income. It can be measured in terms of per capita income. Economic development is also concerned with the whole changes in the economy. It implies changes in income, savings and investments along with progressive changes in socio economic structures of the country (institutional and technological) changes.

Relative Poverty

Relative poverty arises entirely as a consequence of the unequal distribution of income (or expenditure), irrespective of what the income level or the corresponding state of deprivation of the people at the bottom end of the income scale can be. It therefore follows that the inequality referred to as the level of disparity in the income or expenditure distribution, provides some indication of the degree of relative poverty. In fact, inequalities in income have been recognised as one of the manifestations as well as causes of poverty. As far back as 1966, the world bank posited that an understanding of the extent of inequality in distribution of income is very important for reducing poverty. Measures of poverty and inequality form the basis for assessing the impact of economic and social policies and programmes on the standard of living of the people. (Iwunor, 2000)

Poverty and Income Distribution

Poverty is measured by a lack of resources relative to needs. Resources can be measured by consumption, assets, or income, though most prefer income because of both availability and comparability. Needs measures can be either relative or absolute. Relative deprivation is almost always the preferred measure, both nationally and cross-nationally, because it examines deprivation subject to a household's social and economic context. There is no one best measure of absolute poverty for precisely this reason. Depending on the nation, period, and context, the World Bank uses poverty lines of US $1.00, $2.00, or $3.00 per person per day. In contrast, the United States "official" poverty line is set at a level of $10.00 to $15.00 per person per day (depending on the household size). Hence, there is no one "absolute" poverty line or needs standard.

Poverty line

We define the poverty line as the two thirds mean value of per capital consumption in the rural areas. The percentage population living below poverty line captures the prevalence of poverty by measuring the proportion of population for whom consumption (or any other suitable measure of living standard) is below the poverty line. An increase in this indicator implies a worsening of the poverty situation with a greater proportion of the population falling below the poverty line.

The percentage population living below poverty line (H) is the proportion of the population whose economic welfare (y) is less than the poverty line (z). If q people are deemed to be poor in a population of size n then H=q/n. For computing the percentage of population living below poverty line, estimates of individual economic welfare and the poverty line are required.

Income

Income refers to cash earnings of the household plus payment in-kind that can be valued at market prices. The in-kind component of income refers to consumption of own farm produce, payment in-kind, (for example, food) and transfers or exchanges of consumption items that occur between households in rural communities.

Household

The difference between "family and household" is that "family" denotes group of individuals related by blood or marriage whereas "household" includes not only nuclear families but also groups of families or unrelated individuals living together and pooling their

resources for purposes of meals and lodging for example extended families. The most common unit of analysis is the household, defined as all persons sharing the same housing unit, regardless of any familiar relationship. One therefore estimates individual disposable income by aggregating the income of all household members and using an equivalence scale to arrive at each individual person's equivalent income. Equal sharing of incomes within the household is therefore assumed.

Household Income

Household income refers to all receipts (both in cash and in-kind) in exchange for employment, or in return for capital investment or receipts obtained by other sources such as pension.

Non- farm Income

Rural non-farm income is income received or earned from anywhere by rural household outside farm and agricultural wage employment.

Farm Sector

Farm sector refers to all activities involved in crops and livestock production, aquaculture, agro-processing and natural resources collection. Activities involving crops and livestock production are referred to as involvement in farm-based activities.

Non-farm Wage Employment

This refers to full-time/ part- time employment into daily, weekly, or monthly paid jobs in the public or private sector. It is further classified into skilled and unskilled labour activities as follows:

- Unskilled labour employment: This includes activities such as employment as messengers, guards, cleaners and casual works such as transport conducting, loading and offloading.
- Skilled labour employment: This includes activities in health services, construction work (masonry, bricklaying, carpentry), teaching, and other skilled works in public or private sector. The reward of the efforts is payment in wages.

Non-farm Self-employment: This comprises non-wage activities such as trading, transport services in vehicles and motorbikes, artisanship/craftwork, weaving, handicrafts and pottery.

Income Inequality

Income inequality refers to the skewedness in income distribution among households or persons. There exists many different summary measures of inequality, most of them based on the Lorenz Curve or other variants (Atkinson, Rainwater and Smeeding, 1995).

Rural Population There are two main rural characteristics; first rural people usually live in a farmstead or in groups of houses containing 5000 to 10,000 persons, separated by farmland, pasture, trees, or shrubland. Second, most rural people spend most of their working time on farms. In Nigeria, a population is considered sub-urban if it's population is less than 20,000. For the purpose of this study, all communities with population less than 5,000 are regarded as rural areas.

Economic Policy

Policy refers to a plan adopted by an individual or social group such as government. Economic policy is the action-statement of the government pertaining to particular sectors of the economy, describing the intended objectives and how to achieve them. It can also be defined as a programme of action undertaken to control, regulate and manipulate macroeconomic variables. Ordinarily, the object of economic policy is to improve the welfare of the people, either in the short run or the long run. However, there is always a trade-off in the benefits of economic policies, requiring that economic realities dictate policy priorities. Indeed, this is the essence of evidence-based policy formulation and advocacy.

The formulation of an economic policy involves the collection, arrangement, analysis, summary and interpretation of economic data. The quality of data input into policy formulation then becomes critical to evolving policies that will impact the macro economy in the most desired sectors for maximum benefit to the economy – whether national, state or local government, under the federal structure that Nigeria operates.

Economic policies are normally formulated to solve identified and analysed problems that stand between the economy and its goals over a defined period of time. This of course abstracts from the aberration of self-interest motivated economic policies which are common with rogue governments and leaders. Within the context of this topic, economic policy could be looked at from the three planks to macroeconomic policy, that is, fiscal, monetary and

commercial (or trade) policies. Alternatively, policy could be taken as specific economic programmes/policies that were formulated over the course of time.

Marginal Effect

Effect of an infinitesimal change. Marginal analysis is a technique used in microeconomics by which very small changes in specific variables are studied in terms of the effect on related variables and the systems as a whole. This study is concerned with what happens to poverty with a unit change in inequality.

2.11: Policy Relevance of the Study

Other studies on income inequality in Nigeria have attempted various decompositions that generate residuals that could not be explained which cause a loss of a lot of useful information. The method employed in this study generate exact results.

The results of this study will lead to tax regime that will hasten redistribution of resources. It would empower our policymakers on which tax regime to adopt-whether progressive or regressive tax option. This will lead to poverty reduction along with sustained growth. The result can provide basis for comparism of policy effectiveness and efficiency over years.

It will also provide useful information to guide and inspire policy actors to design workable poverty – reducing and equity – motivated policies. This will help policymakers in designing and implementing policies that will mitigate the rise in inequality between sectors, regions and the country at large. The study will also imply that growth would have a significantly positive impact on poverty alleviation with policies that redistribute resources in favour of the rural areas. Such outcomes will reduce massive migration to main cities of the country and would perhaps also reduce the unequal income distribution in the urban areas.

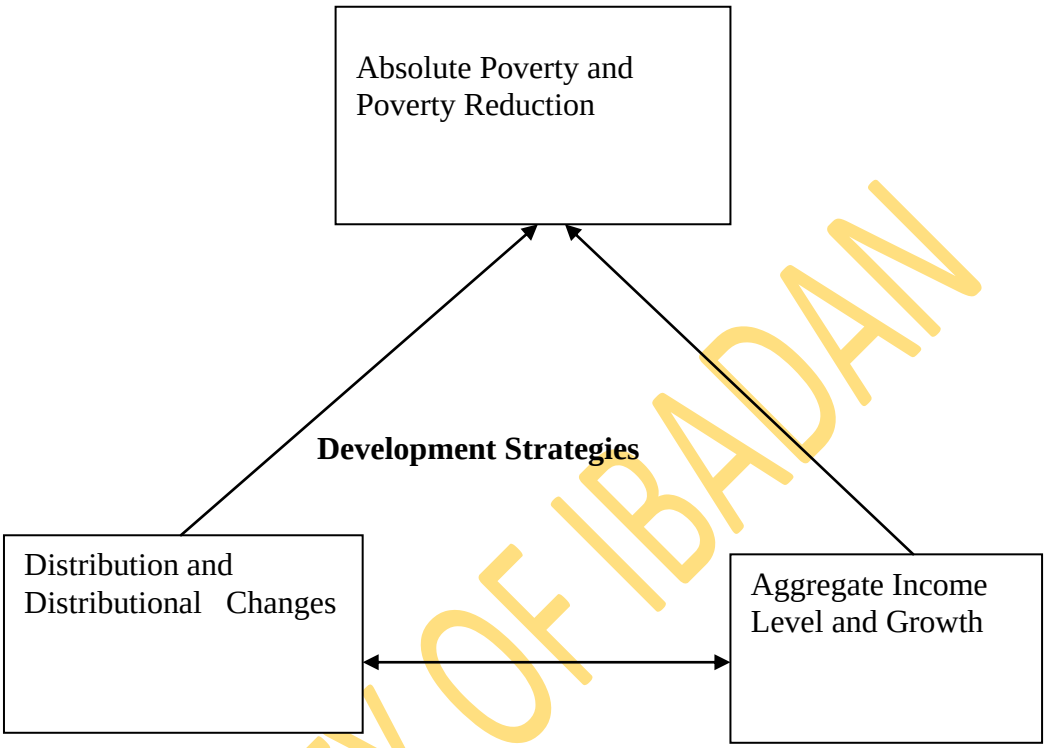


Fig 2.1: Relationship among economic growth, income redistribution and poverty reduction

Adapted:(Bourguignon, 2003)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1: The Scope of Study

Nigeria is located in West Africa on the Gulf of Guinea where it extends from approximately latitude 4°N to 14°N and between 2°40' and 14°41' east longitude with a total land area of 925,000 square kilometers. It is the third largest country by size in the West African sub-region. The climate is tropical with two distinct seasons, the wet season which is characterised by heavy rainfall in the southern parts of the country and the dry season when very low temperatures is experienced in the hills in the northern parts of the country. Moving north from the humid rainforest of the Atlantic coast, the climate becomes progressively drier, reaching semi-arid savanna at the northern border with Niger Republic. Generally, the range of the temperature is between 27° and 32°. February to March, is the hottest period of the year when temperatures range from 33 to 38 degrees centigrade. The extremes of the wet season are felt on the southeastern coast where annual rainfall might reach a high of 330cm; while the extremes of the dry season, in aridity and high temperatures, are felt in the northern part of the country. In line with the rainfall distribution, a wetter south and a drier northern half, there are two broad vegetation types ranging from mangrove forest on the coast to desert in the far north. There is also the mountain vegetation of the isolated high plateau regions on the far eastern extremes of the country (Jos, Mambilla, Obudu). This West African state has diverse farming potential in several distinct agro-ecological zones. The savanna, especially Guinea and Sudan, are the major grains, grasses, tubers, vegetable and cotton growing regions. The tropical evergreen rainforest belt bears timber production and forest development, production of cassava; and plantation growing of fruit trees - citrus, oil palm, cocoa, rubber, among others.

The geopolitical structure consists of 36 states and the Federal Capital Territory located at the heart of the country (Fig 3.1) with Abuja as the nation's capital at it's centre whilst Lagos, the former national capital, remains the country's financial nerve centre. The country comprises six geopolitical zones: North West, North East, North Central, South East, South West and South South. These zones represent not only different ecological features, but also different economic potentials, population densities, levels of development and urbanisation (NISER 1997).

Major minerals in Nigeria are: crude oil, coal, tin, columbite, palm oil, peanuts, cotton, rubber, wood, hides and skins, textiles, cement and other construction materials, food products, footwear, chemicals, fertiliser, printing, ceramics and steel. Natural resources

include: Petroleum, natural gas, tin, columbite, iron ore, coal, limestone, lead and zinc. Export commodities are: petroleum and petroleum products (95 per cent), cocoa, rubber (Moorhead, 2005).

Nigeria, which is the most populous country in the whole of Africa with a total population of about 140 million according to 2006 census, has more than 250 ethno-linguistic groups of diverse culture and traditions which gives the country a rich diversity. The dominant ethnic group in the northern two-thirds of the country is the Hausa-Fulani, most of whom are muslim. Other major ethnic groups of the north are the Nupe, Tiv, and Kanuri. The Yoruba people are predominant in the southwest. Persons of different language backgrounds most commonly communicate in English, although knowledge of two or more Nigerian languages is widespread. Hausa, Yoruba, Igbo, Fulani, and Ijaw are the most widely used Nigerian languages. Endowed with considerable oil resources, it is also a country with very significant level of inequality and where absolute poverty is considerable. This makes Nigeria a natural environment in which to be concerned about the link between poverty and inequality (Araar and Awoyemi 2006).

3.2 Rural Nigeria

Rural population refers to people living in rural areas. Rural areas are identified based on diverse criteria including low population concentration, scattered settlement pattern, predominance of primary production, few basic/social infrastructure among others (Yusuf and Ukoje 2010).

Nigeria is predominantly rural, less than a quarter of Nigerians live in towns and urbanized settings. Acording to statistical offices, the percentage of rural population in Nigeria is 51.6 per cent recently. They engage in either farm or non-farm occupation with a rural base.

Fig.3.1 Map of Nigeria Showing the Thirty-six States and the Federal Capital Territory

Source: World Atlas Travel

http: //worldatlas.com/webimage/countrys/Africa/ng.htm(Retrieved August 12, 2010)

3.3: Source of Data.

The study made use of data collected from the National Consumer Survey (NCS) of 1996 and 2003/2004 National Living Standard Survey (NLSS). 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 components of NCS used in the study were 9377 households. There had been four of such surveys in 1980, 1985, 1992 and 1996. A two- stage sampling design was used for all the surveys. Also, the stratification criteria were based on the state of residence and the locality (urban/rural). The survey contains detailed information on the income, expenditure and consumption of household members. However, there is little information on household expenditure in comparable form. This data is used both for determining poverty status, for estimating poverty status regression and for analysing inequality in the rural sector. This is used for the money-metric measurement of poverty in Nigeria including the regression estimates and the inequality measurements.

The NLSS is based on the National Integrated Survey of Households (NISHs) framework. The NISH is an ongoing programme of household surveys enquiring into various aspects of households. A two-stage stratified design was employed. The population census enumeration areas (EAs) constituted the primary sampling units while the housing units were the secondary sampling units. In each state, a sample of 120 EAs were selected for the survey, while 60EAs were selected for Abuja. At the second stage, a total selection of five housing units from each of the selected EAs were chosen. Thus, a total of 600 households were randomly interviewed in each of the states and the FCT, summing up to 22,200 households across the country. The rural component used for the study totalled 14515 respondents (NBS, 2005).

3.4: Data Requirement

In order to determine temporal growth, the level of income redistribution and rural poverty in Nigeria, various data were required, which are already contained in the NLSS questionnaire. They included socio-economic characteristics of the respondents such as age, household size, gender of household head, years of formal education of household head and occupation status of household head. Others are labour hours per week, *per capita* expenditure (which include expenditure on food, health, education, shelter and clothing). Per capita expenditure was used as against income because of the large proportion of the informal

sector, with highly diversified, seasonal and mainly unrecorded income. Other variables were: types of housing materials, source of energy and dependency ratio.

3.5: Estimation Methods

Lorenz Curves of Income Distribution

Lorenz curves provide a graphical depiction of an income or expenditure distribution, constructed as follows. The population (of size n) is ordered from lowest income or expenditure to highest. The cumulative percentage of population (poorest 1/n, poorest 2/n, etc.) is plotted on the horizontal axis. The cumulative percentage of income or expenditure received by each cumulative percentage of population is plotted on the vertical axis. The graph of cumulative percentage of income or expenditure against cumulative percentage of (ordered) population is the Lorenz curve (Fields, 1998). Because the population of income recipients is ordered from lowest income to highest, the change in the cumulative percentage of income is always (weakly) larger for income recipient i than it is for recipient i-1, and therefore Lorenz curves always have the convex shape shown in Figure 3.2. The two limiting values are of particular interest. If the income distribution were *perfectly equal*, with each income recipient receiving 1/n'th of total income, the poorest l/n'th of the population would receive 1/n'th of the income, the poorest 2/n'ths would receive 2/n'ths of the income, and so on, in which case the Lorenz curve would lie along the 45-degree line. At the other extreme, if the income distribution were *perfectly unequal*, with one person receiving all the income and everyone else receiving nothing, the poorest 1/n'th, 2/n'ths, ... (n-1)/n'ths would receive nothing but the poorest 100% would receive 100% of the income, and therefore the Lorenz curve would lie along the bottom and right-vertical axes. These considerations informed the intuition that the closer the Lorenz curve to the 45-degree line, the more equal (less unequal) the underlying distribution of income. Precisely, the same intuition allows us to use Lorenz curves to make inequality comparisons for two income distributions, X and Y. If the Lorenz curve for distribution X lies somewhere above and not below the Lorenz curve for distribution Y (in which case X is said to Lorenz-dominate Y, denoted L(X) > L(Y)), then X has a more equal distribution than Y (Fields, 1998). This curve is widely used to show income or expenditure inequality. The main feature of the Lorenz curve includes the curve and the line of perfect equality. Figure 3.2 shows the horizontal axis, which measures the proportion of the population while the vertical axis shows the proportion of the national income that they receive. The farther away the Lorenz curve is from the line of perfect equality, the more unequal the distribution of income in that country.

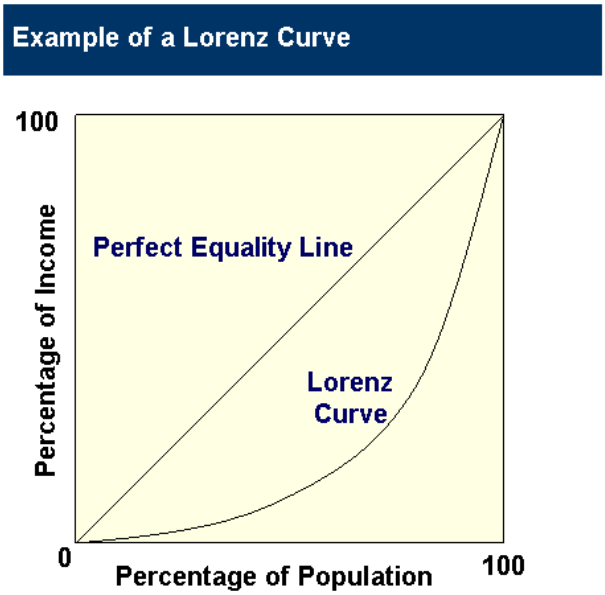


Fig. 3.2: Lorenz Curve of Income Distribution

3.5.1: Gini Coefficient (Measurement of income inequality)

The main measures of inequality in literature are: The Gini, Theil and Atkinson indices. This study however focuses 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. Gini is particularly relevant to the equity component of sustainable development. Income or resource distribution has direct consequences on the poverty rate of a country or region. A country can for example have a high per capita GDP figure, but its income distribution so skewed that the majority of people are poor. Gini is useful both to measure income inequality over time and for international comparisons. The Gini coefficient was used in this study to analyse inequality between different households in a population. Since Fei, Ranis and Kuo (1978), 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.

The income share of the richest m% and the income share of the poorest n% can be read directly from the Lorenz curve. These measures are sometimes criticised because they consider only certain ranges of incomes (those of the richest or the poorest), not all of them. This analysis is meant to examine the pattern of income distribution among the households in

rural Nigeria and also to show the income inequality among households in the study area. If the Lorenz curve is the 45° 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 lesser the inequality and the smaller the Gini coefficient. The Gini coefficient is computed as:

$$I_{gin}(Y) = \frac{2\sum_{i}^{n}=1}{n^2\mu} i\left[\frac{n+1}{2}\right] y_i \ldots\ldots\ldots\ldots \quad 3.1$$

Where n is the number of observations, μ is the mean of distribution, and y_i is the income of the ith household and I_{gin} is the income Gini.

3.5.2: Shapley Growth-redistribution Decompositions

The Shapley decomposition approach proposed by Shorrocks (1999) is used extensively in the decomposition of poverty into growth and redistribution components. The decomposition was derived from the concept introduced by Shapley (1953). The proposed framework is for decomposition analysis, whether static or dynamic, and whether it concerns poverty or inequality in the distribution of living standards. It also has the advantage of eliminating the residual component unexplained in the Datt and Ravallion (1992) approach.

The results are then used to quantify the contribution of any number of factors to total inequality. The Morduch and Sicular (2002) method has been criticised on the basis that although the methodology requires the inclusion of an error term into the original income generating equation, it does not make any contribution towards overall inequality (Wan, 2004). In contrast, Fields' (1998) decomposition methodology accounts for the contribution of the regression error to total inequality but this tends to be large leaving unexplained the major proportion of inequality. Neither method accounted for the contribution of the constant term to total inequality.

In contrast to other regression–based methods, the Shapley value decomposition methodology circumvents the problem of a large residual and decomposes inequality exactly into its contributory factors (Shorrocks, 1999).

Starting with the work of Datt and Ravallion (1992) with a fixed poverty line z written formally as: $p = p(L, \mu, z)$ …… 3.2

$P = P(L, \mu/z)$ …… 3.3

The poverty level at time (t) given as μ_t is normalised average income and the Lorenz curve L_t captures redistribution as measured by Gini. The growth factor in the change of

poverty between period t and t+n can be denoted as $G = \frac{\mu_{t+n}}{\mu_t} - 1$ and the redistribution factor by

$D = L_{t+n} - L_t$. The issue is that of identifying the contribution of growth, G and redistribution D, in the decomposition of changes in any poverty measure that is additively decomposable. The aggregate change in poverty measures is given as:

$$\Delta P = P_{t+n} - P_t = F_{t+n}(z) = F_t(z) = P(\mu_{t+n}, +L_{t+n}, z) - P(\mu_t, L_t, z) \quad \text{3.4}$$

This can be decomposed further to give: $\Delta \mathrm{P} = \mathrm{P}(\mu_{t+n}, L_{t+n}, z) - \mathrm{P}(\mu_t, L_t, z)$ 3.5

This is an expression of the change in poverty, $\Delta \mathrm{P}$, decomposed into the growth (G) and redistribution (D) components, given as:

$$G = P_{t+n} - P_t = P(\mu_{t+n}, L_t, z) - P(\mu_t, L_t, z) \quad \text{3.6}$$

$$D = P_{t+n} - P = P(\mu_{t+n,} L_t, z) - P(\mu_{t+n}, L_t, z) \quad \text{3.7}$$

As stated by Kolenikov and Shorrocks (2003), equation 3.6 expresses the marginal effect of the change in mean income with redistribution held constant while equation 3.7 indicates the marginal effect of redistribution when mean income is held constant. These two types of decomposition generate a residue, such that:

Variation in poverty = Growth effect + Redistribution Effect + Residue which is in line with Datt and Ravallion (1992).

To remove the arbitrariness of the choice of a reference period and the error term, we can use the Shapley value and the two effects can be averaged and further expressed as :

$$G = \frac{1}{2}[\mathrm{P}(\mu_{t+n}, L_t, z) - \mathrm{P}(\mu_t, L_t, z)] + \frac{1}{2}[\mathrm{P}(\mu_{t+n}, L_{t+n}, z) - \mathrm{P}(\mu_t, L_t, z)] \quad \text{3.8}$$

$$D = \frac{1}{2}\left[\mathrm{P}(\mu_t, L_{t+n}, z) - \mathrm{P}(\mu_t, L_t, z) - \frac{1}{2}[\mathrm{P}(\mu_{t+n}, L_{t+n}, z) - \mathrm{P}(\mu_{t+n}, L_{t+n} z)\right] \quad \text{3.9}$$

Equations (3.8) and (3.9) are Shapley values for Growth and Redistribution components respectively.

3.5.3: Household Demographic and Socio-economic Characteristics to be included in the analysis:

Demographic Characteristics

X_1 = age of household head (years);

X_2 = square of age (years);

X_3 = household size;

X_4 = sex of household head (1= male, 0 = otherwise);

X_5 = house unit type; and

X_6 = number of rooms.

Socio- economic Characteristics

X_7 = education status of household head;

X_8 = occupation status of household head (1=farming, 0=otherwise),

X_9 = labour hours per week;

X_{10} =*per capita* expenditure;

X_{11} =source of energy, (1= electricity, 0=otherwise);

X_{12} =dependency ratio; and

X_{13} =weekly hours of work.

The study will rely on facility of DASP software developed by Araar and Duclos (2007a).

3.5.4: Foster – Greer – Thorbecke (FGT) Measures of Poverty.

One of the methods considered in the study is the popular FGT measures of poverty. A number of previous studies have used relative poverty lines, which are proportions (two third) of the average *per capita* expenditure (Canagarajah and Thomas 2001 and FOS (now NBS) 1999). In this study, this same approach was followed using the *per capita* expenditure as a proxy for welfare. This poverty line helps us in classifying the poor and non- poor and then calculate the poverty indices for rural households in Nigeria. We used the Foster-Greer-Thorbecke (FGT) indices to measure the magnitude, depth and severity of rural poverty. The p_α class of poverty according to

Foster *et al* (1984) can be addressed in respect of poverty incidence, (α=0); depth of poverty (α=1); and severity of poverty (α=2). The larger the value of α, the greater the weight given to the severity of poverty. For α=0, FGT reduces to Head Count Ratio (H) and when α=1, it reduces to poverty gap and if α=2, we have poverty severity index.

The equation is given as:

$$FGT\alpha = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z-y_i}{z}\right)^{\alpha} \quad \text{..... 3.10}$$

Where:

n = the total number of households

z = the poverty line

y_i =household *per capita* expenditure

α = a parameter which takes values 0,1 and 2.

In this study, we decided to bring the two time periods (1996 and 2004) together using 1996 as base year. This study observed the poverty focus axioms which are mild assumptions on how a poverty measure should behave. The poverty axioms pioneered by Sen (1976) include:

1. ***Focus Axiom***. The poverty measure should focus entirely on the incomes of the poor.

2. ***Monotonicity Axiom***. A reduction in the income of a poor household should cause the value of the poverty index to rise.

3. ***Weak Transfer Axiom***. Poverty should rise with a regressive transfer of income -and fall with a progressive transfer - between two poor households, provided both continued to be poor after the transfer.

Consumer Price Index (CPI) is not considered due to the following reasons:

-CPI include goods that are not relevant to the poor such as military uniform, and guns. It will be biased as our focus is mainly on the poor. It is against poverty axioms.

- It also sticks to the experiences of people living in the urban area.

- Psychological behavioural patterns of the buyer are not considered.

- CPI may not be applied to all population samples.

- Measures may not be accurate because of the sampling and non-sampling errors such as substitution bias, quality bias and formula bias. Against this background, this study employed the use of an index generated from the ratio of the poverty line from the two periods.

Notationally, if the base year poverty line is denoted by Z_{1996} and 2004 poverty line is denoted by Z_{2004}, an index denoted by Z_{1996}/Z_{2004} is generated. The unit of this index is now used to normalise *per capita* expenditure of individual households in 2004.

For objective two, we make use of the decomposition property of the poverty measures to investigate the relative contributions of different occupations to the aggregate poverty. If we classify the households to m mutually exclusive subgroups, then an aggregate measure of poverty can be written as the weighted sum of subgroup poverty measures. That is, if an

aggregate poverty measure is denoted by *P*, the subgroup specific measures by P_j (j=1,…,m), and the share of the jth group in total population by w_j, then $P = \sum w_j P_j$, where: $w_j P_j$ denotes the contribution of the jth group.

3.5.5: Group Decomposable Poverty Indices

According to Araar and Duclos (2007) additive poverty indices make it unambiguous to estimate the contribution of each group to total poverty. Among the most popular additive indices are the FGT, the Chakravarty and the Watts indices. In general, the decomposition of these indices takes the following form:

$$P_A(z;\alpha) = \sum \varphi(k) P(k;z;\alpha) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ 3.11$$

Where: P (k;z;α) and φ(k) are respectively the poverty and the population share of group k. The contribution of each group to total poverty depends on the poverty of that group and its share in the population. In this study, the groups under consideration are the two periods under study (t_1 and t_2) .

We denote the absolute contribution of group k by E(k) as:

$$E(k) = \varphi(k) P(k;z;\alpha) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ 3.12$$

Between two periods or two distributions t_1 and t_2, the change in total poverty equals the sum of changes in group contributions , such that :

$$P_B(z;\alpha) - P_A(z;\alpha) = \sum E_B(k;z;a) - E_A(k;z;\alpha) \ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ 3.13$$

The change in the contribution of group k is defined as follows:

$$E_B(k;z;\alpha) - E_A(k;z;\alpha) = \varphi_B(k) P_B(k;z;\alpha) - \varphi_A(k) P_A(k;z;\alpha) \quad \ldots\ldots\ldots\ldots\ldots\ 3.14$$

For a given group k, one can use the reference period t_1 to estimate the impact of this group on total change in poverty.

Poverty impact $(k) = \varphi_A(k)(P_B(k;z;\alpha) - P_A(k;z;\alpha)$ ……………………….. 3.15

Group impact $(k) = P_A(k;z;\alpha)(\varphi_B(k) - \varphi_A(k)$ ……………………… 3.16

Differences in poverty are:

$$\overline{P}_B(z;\alpha) = \sum{}^k{}_k\, \varphi_A(k)(\overline{P}_B(k;z;\alpha) - \overline{P}_A(k;z;\alpha)$$

Within group poverty effect

$$+\sum{}^k{}_k\, P_A(k;z;\alpha)(\varphi_B(k) - \varphi_A(k) \qquad +\sum{}^k{}_k\, (P_B(k;z;\alpha) -$$

Between group effect Interaction or

$\bar{P}_A(k;z;\alpha)(\varphi_B(k)-\varphi_A(k))$ 3.17

Error term.

To remove the problem in the choice of the reference period as well as the residue, we can use the Shapley value:

$$\bar{P}_B(z;\alpha)-\bar{P}_A(z;\alpha)=\sum{}^{k}{}_{k}\varphi_A(k)(P_B(k;z;\alpha)-P_A(k;z;\alpha) \quad +\sum{}^{k}{}_{k}P_A(k;z;\alpha)(\varphi_B(k)-\varphi_A(k)$$

Within group poverty effect Between group effect

..... 3.18

The decomposition will be done using Shapely approach and the study will rely on facility of DASP software developed by Araar and Duclos (2007a).

3.5.6: Growth Elasticity of Poverty

We estimated growth and inequality elasticity of poverty during the research period. Growth elasticity of poverty is how per cent poverty changes if growth changes by one per cent. According to Bourguignon (2003), it was shown that both the growth and inequality elasticity of poverty are increasing functions of the level of development and decreasing functions of the degree of relative income inequality. It also shows how the decomposition identity may be applied to observed growth periods for which distribution data are available at the beginning and end of the period. This discussion showed clearly that both growth and inequality changes play a major role in generating changes in poverty. Distribution is also shown to matter for poverty reduction. Over the medium term, distributional changes may be responsible for sizeable changes in poverty. He also asserted that it was important to consider growth and income redistribution simultaneously and to recognise that income redistribution mattered as much as growth for poverty reduction. Growth and inequality elasticity of poverty can be estimated based on the model suggested by Ravallion and Chen (1997) as follows:

$$\log\rho_{it}=\alpha_{i}+\beta\log\mu_{it}+\gamma\log g_{it}+\delta_t+\varepsilon_{it} \quad \text{.....3.19}$$

where ρ is the measure of poverty at time t, α_{it} is a fixed-effect, reflecting time differences in the country, β is the "growth elasticity of poverty" with respect to mean expenditure given by μ_{it}, γ is the elasticity of poverty with respect to income inequality given by the gini coefficient, g, δ is a trend rate of change over time t and ε_{it} is an error term that includes errors in the poverty measure (Adams, 2004).

Taking first differences in equation (3.19), the fixed-effect term, can be eliminated in order to obtain:

$$\Delta \log \rho_{it} = \delta + \beta \Delta \log \mu_{it} + \gamma \Delta \log g_{it} + \Delta \varepsilon_{it} \quad \ldots\ldots\ldots 3.20$$

In equation (3.20), the rate of poverty reduction ρ was regressed on the rate of growth in mean expenditure and the rate of change in income inequality.

Given the two time period of our data however, we adopted a simple but powerful ratio estimates of growth and inequality elasticities of poverty. We used the notation $\boldsymbol{\eta_g}$ for growth elasticity of poverty, Δp as the change in poverty between the two periods t_1 and t_2. p is poverty level in the base year, Δg is income growth between the two periods and g is growth in the base year. Thus, the growth elasticity of poverty is written as:

$$\boldsymbol{\eta_g} = \frac{\Delta p / p}{\Delta g / g} \quad \ldots\ldots\ldots 3.21$$

It is good to note that the expression in the numerator is the relative change in poverty and the expression in the denominator is the relative change in growth.

3.5.7: Inequality Elasticity of Poverty

Similarly, inequality elasticity of poverty can be stated as:

$$\eta_i = \frac{\Delta p / p}{\Delta gini / gini} \quad \ldots\ldots\ldots 3.22$$

Where: η_i is the inequality elasticity of poverty, Δp is the change in poverty between the two periods t_1 and t_2. p is poverty level in the base year while Δ gini and gini are change in inequality between the two periods and gini is the inequality in the base year.

3.5.8: Oaxaca-Blinder Decomposition

The gap in the level of income during the research period reflects a variety of factors, including differences in household characteristics and also in economic environment and policies. The Blinder-Oaxaca (Oaxaca, 1973) decomposition technique was used to identify and quantify the contributions of key measurable characteristics earlier mentioned to total

differential in per capita expenditure. The technique decomposed differences in mean levels of *per capita* into those due to different observable characteristics across the total population and those due to different effects of characteristics or "coefficients".

The Oaxaca –Blinder method is often used to analyse differences in earnings or the returns to labour. Here, we used it to analyse differences in *per capita* income including both labour earnings and other income. The Oaxaca-Blinder decomposition requires two steps: The first step involves estimating expenditure equations separately for inequality and growth effects.

The equation typically takes the form $\ln(\mu_i) = a_{n_i} + \beta_{n_i} X^{n_i} + \varepsilon^{n_i}$ ……3.23

Where n_i indicates the period under consideration. μ_i is a vector of *per capita* expenditure of individuals during the research period n_i. X^{ni} is a matrix of individual characteristics in period n_i, a_n and β_n are the parameters to be estimated while ε is the error term. The next step is to use the regression results to decompose the difference in mean income between the two periods. The difference in mean log *per capita* expenditure between these periods can be written as

$$\ln \bar{\mu} - \ln \bar{\mu}_i = (\bar{a}_\mu - \bar{a}_{\mu i}) + (\hat{\beta}_\mu \bar{X}^\mu - \hat{\beta}_{\mu i} \bar{X}^{\mu i}) = (\hat{a}_\mu - \hat{a}_{\mu i}) + (\hat{\beta}_\mu \bar{X}^\mu - \hat{\beta}_{\mu i} \bar{X}^{\mu i}) + (\hat{\beta}_\mu - \hat{\beta}_{\mu i}) \bar{X}^{\mu i} \quad \text{....3.24}$$

The first term on the right hand side of equation (3.24) is the growth aspect. It gives the difference in growth between the two periods under study. The second part represents variation in the distribution of expenditure (redistribution). The third term is the interactions between the characteristics or factors.

So far the above equations show the traditional method which compares the average of earnings in one period with the average of earnings in another. Dalton and Makepeace (1985) derived a form for the density of the distribution for such comparisons and further showed that robust results could be arrived at, if the method is applied on higher-order moment like variance of the earnings instead of average of earnings. Here, the use of variance will allow us to address differences in dispersions of *per capita* expenditure during the study period. Moreover, the use of expected utility analysis shows that an increase in variance may or may not lead to an increase in welfare depending on the attitude to risk embodied in the utility function which must not be neglected (Dalton and Makepeace, 1985). As in equation (3.24) the difference in the variances is

$$\Delta\sigma_\mu^2 = \sigma_{\mu_i}^2 - \sigma_{\mu_j}^2 + (\beta_{\mu_i} - \beta_{\mu_j})' \Omega_{\mu_j}(X)(\beta_{\mu_i} - \beta_{\mu_j}) \quad \text{……3.25}$$

Where: $\Delta\sigma_{\mu}^{2}$ is the differences in the expected variances and Ω_{μ_i} is the expected means of regressors. So, a similar decomposition can be undertaken for the variance. Thus,

$$\text{var}(\ln \mu_i) - \text{var}(\ln \mu_j) = \Delta\sigma_{\mu}^{2} + \beta'_{\mu_i}\left(\Omega_{\mu_i}(X) - \Omega_{\mu_j}(X)\right)\beta_{\mu_i} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.26$$

The first term is the difference in growth effect and the second the effect of redistribution.

CHAPTER FOUR
RESULTS AND DISCUSSIONS

4.1 Description of Household Characteristics

This section presents the description of the socio-economic characteristics of the sampled farm households across the country.

4.1.1 Distribution of Population by Age of Household Head

From Table 2, average ages of 44.8 years in 1996 and 39.7 years in 2004 are indications of still active working population in rural Nigeria. These are the ages people are expected to be highly productive especially in agricultural production which is energy demanding.

4.1.2 Distribution of Population Share by Household Size

Table 2 also shows the household population share by family size across rural populations. The least family size was one while the largest was 36 in1996. In 2004, the least was one while the largest was 22. Average household sizes are 5.4 in 1996 and 4.9 in 2004 (Table 2). The result showed that household size in rural Nigeria is still relatively big. They constitute household labour which is still very important in rural families especially in the northern part of the country.

4.1.3 Distribution of Population Share by Sex of Household Head

From Table 3, further analysis shows that the percentage of males (87.37 per cent) in 1996, is higher than that of female population (12.63 per cent). The results of 2004 however give a contrary report as 45.9 per cent of the population are males while a higher percentage of 54.01 are females. This shows an improvement in women participation in the labour force especially agriculture, which is the major occupation in rural Nigeria.

4.1.4 Distribution Based on Level of Education

Education has been classified into non-formal, elementary, primary, secondary education and tertiary. Labour productivity is affected by the amount of knowledge, information and skills acquired. Education is thus considered as one of the key income generating characteristics of households. Table 3 shows that the respondents with no formal education constituted 67.25% in 1996 but only 42.57% in 2004. This indicates that a majority of rural dwellers in Nigeria lack formal education. This is followed by those with secondary education with 29.34 per cent. Primary school education is next with 18.15 per cent, elementary education has 2.33 per cent while others constitute 6.12 per cent.

Table 2: Socio-Economic Characteristics of Household Heads

	1996					2004				
Variable	Obs.	Mean	Std. Dev	Min.	Max.	Obs.	Mean	Std. Dev.	Min.	Max.
Age of Household Head	7374	44.83035	13.19176	16	99	13441	39.74328	15.19706	20	99
Household Size	7374	5.438297	3.654097	1	36	14512	4.883751	2.865305	1	22
Sex of Household Head	7374	1.126254	0.332158	1	2	13441	1.585666	0.306655	1	2
Educational Level	7374	1.475726	0.776289	1	4	13441	2.640369	1.344834	1	6
per capita expenditure	7374	1363.69	2003.208	21.1	59079	14512	31764.05	40543.31	850	2198309
Dependency ratio	7210	0.8751681	0.827196	0	8	14512	0.267604	0.234167	0	1
Weekly hours of Work	7368	45.1573	11.88382	0	99	4397	60.54247	163.7158	0	2259

Table 3: Distribution of Household Heads by Sex and Educational Status

	1996		2004	
Sex of Head	Freq	Percent	Freq.	Percent
Male	6443	87.37	30137	45.99
Female	931	12.63	35938	54.01
Total	7374	100	65535	100
Education status of Head	Frequency	Percent	Freq	Percent
No education	4959	67.25	26233	42.57
Primary	1531	20.76	16396	26.6
Secondary	675	9.15	18077	29.34
Tertiary	209	2.83	912	1.48
Total	7374	100	61618	99.99

4.1.5 Distribution Based on Mean Expenditure

From Table 2, during the initial period 1996, the mean *per capita* expenditure based on deflated current prices was ₦1,363.64 per annum while during the final period of research, (2004), it was ₦31,764.05 *per annum*. This is an indication of very poor condition of living as it goes in line with living on an income of less than $1 per day.

4.1.6 Dependency Ratio

The dependency ratio shows the number of household members that do not contribute to household income. The higher the dependency ratio, the lower the expected per capita expenditure. From Table 2, in 1996, the dependency ratio in rural Nigeria was 0.87 while it has reduced by 70.1 per cent to 0.26 in 2004. This shows that in 2004, more people were engaged in economic activities which led to improvement in *per capita* expenditure.

4.1.7 Distribution Based on Weekly Hours Worked

The average number of hours worked per week was 45 in 1996 while it was 60 in 2004 (Table 2). This is an indication of active involvement in economic activities during the second period rather than spend too much time on leisure. This could also be an indication of active involvement in economic activities during the second period as a result of more job opportunities.

4.2 Poverty and Inequality Decompositions

4.2.1 Lorenz Curve and Gini Coefficient Analysis

The Lorenz curve of income distribution which is a product of the graphical representation of the Gini data in Table 4 is as shown in figures 4.1a and 4.1b. Both figures show a deviation from the line of perfect equality. In Figure 4.1a the deviation is more convex than what obtained in Figure 4.1b. This shows that income was more unequally distributed in 1996 than in 2004. The country was then under military rule where distribution policies were not really emphasised. The less convex nature of the curve during the second period (2004) is an indication of less inequality during the latter period. In 1996, Gini coefficient was 48 per cent, meaning there was high level of inequality during this period while in 2004 it was about 46 per cent which is an indication of lower inequality among rural dwellers during this period. The reason for the reduction in inequality during the latter period could be as a result of the advent of the civilian administration which came to power in 1999 with the introduction of economic reform policies which were more distributive than those previously put in place by the military regime prior to 1999. During the second period (2004),

democracy resulted in the involvement of people in governance. Distributive policy was advocated and aggressively pursued.

4.2.2 Estimates of Poverty in Rural Nigeria (1996 to 2004).

Table 4 also gives the estimates of poverty for the two periods. The poverty line for 1996 was ₦843.58 while in 2004 it was ₦17218.35. 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. The figures were 69.2 per cent and 65.1 per cent respectively with the difference of just 4.1%. There is no significant difference in the figures which could explain why poverty reduction efforts in the country seems to be making little impact. The rise in poverty in the agricultural sector in 1996 is explained by the abandonment of rural agricultural policies of the SAP period. 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 was 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 (public expenditure, revenue and investment – budget) that will enable all its inhabitants to improve their welfare. Though there was higher rate of inflation during the latter period (2004), rural households were able to shield themselves against inflation as they were to some extent self-sufficient in producing most of their food items which would have been purchased at high prices. Again the reduction in poverty experienced in 2004 may not be unconnected with the various economic recovery measures put in place by the then Obasanjo administration. This enhanced the *per capita* incomes of both the poor and non-poor households. Poverty gap index for the two periods (34.5%; 27.6%) respectively also follows the same pattern. It was lower during the second period (2004) than in the first period (1996). The poverty severity index, P_2 also shows a similar trend. It was more distribution sensitive than the other two measures. It was 21.2 per cent in 1996 while it reduced to 14.9 per cent in 2004. 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. In all the three poverty indices, transfers to the non-poor are considered equally undesirable regardless of how close or otherwise they are to the poverty line (Coady and Scoufias 2004).

Table 4: Estimates of Poverty in Rural Nigeria (1996 to 2004).

	1996	2004	Change in Poverty	% Change in Poverty
Gini	0.479	0.46		
Poverty Line(Naira)	843.58	17218.35		
P_0 (H)	0.692	0.651	-0.041	-5.9
P_1(Pgap)	0.345	0.276	-0.068	-19.9
P_2 FGT(2)	0.212	0.149	-0.062	-29.3

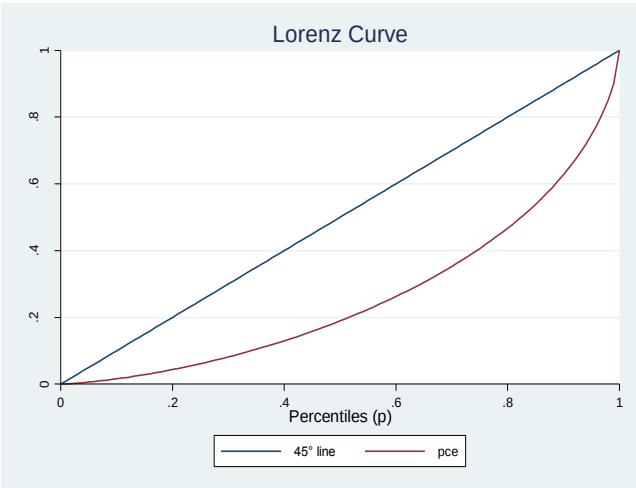


Fig. 4.1a **Fig. 4.1b**

Fig. 4.1 Lorenz Curve of Household Per Capita Expenditure in Rural Nigeria (1996 and 2004)

4.2.3*:* FGT Curve of Household Expenditure in Rural Nigeria (1996 to 2004)

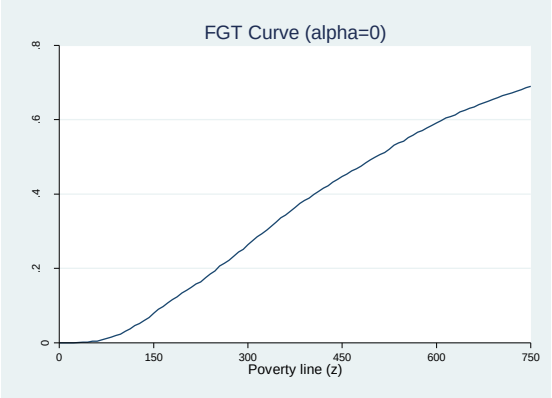
The estimates of headcount ratio, poverty gap ratio and FGT poverty index at α =2 are also presented and are as shown pictorially in figures 4.2a and 4.2b. In 1996, when α= 0, high proportion of people are under poverty line. When α=2 however, there is less proportion of people under poverty. Similarly, this is represented in figures 4.3a and 4.3b for 2004. When α=2, the shape of FGT is more convex as a result of redistribution factor. As can be seen from Table 4, the level of poverty in the rural area was more severe in 1996 than in 2004.

4.2.4: The Difference between FGTs within the Period under Study (1996 to 2004).

Poverty has been one of the critical development problems in Nigeria. It is evident that over 69.2 per cent of the rural population were living below poverty line in 1996. There was a slight decrease in this proportion to 65.1per cent in 2004. There was therefore a slight decrease in poverty levels between the two periods. Figure 4.4 illustrates this in pictorial form**.**

4.2.5: Decomposition of Poverty into Growth and Redistribution Components

Since we are interested in the redistribution effect of poverty, it would be more appropriate to rely on the transfer-sensitive measure, FGT (2). For the sake of comparison however, we present in Table 5 the contributions of growth and redistribution to changes in poverty using all the three measures. The table shows Datt and Ravallion as well as Shapley decomposition values. Using the period t_1 as reference point, the growth component for Datt and Ravallion is negative (-0.030) and the redistribution component also negative (-0.061). For the period t_2 as reference point, the growth component is -0.019 while the redistribution component is -0.049. Reference period t_1 (1996) is the period before the present civilian regime. It was the period whereby the country was just recovering from the effects of SAP and economic recession. During that time, a decline in the *per capita* household income and economic recession contributed to increase in poverty. This was because, in Nigeria, accompanying the rapid economic growth between 1965 and 1975 was a serious income disparity which widened substantially. This showed that though the economy may be performing strongly, the gap between the lower income households and the upper income households was growing which was an indication that the rapid economic growth



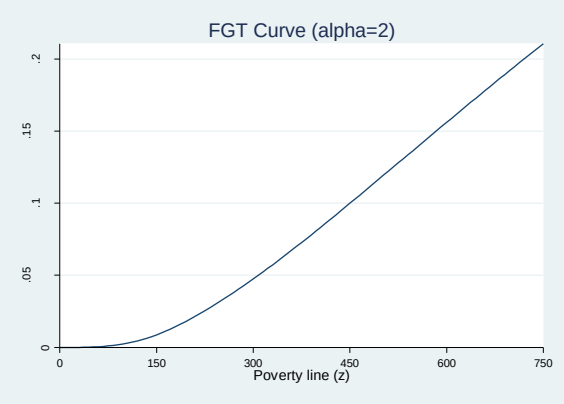
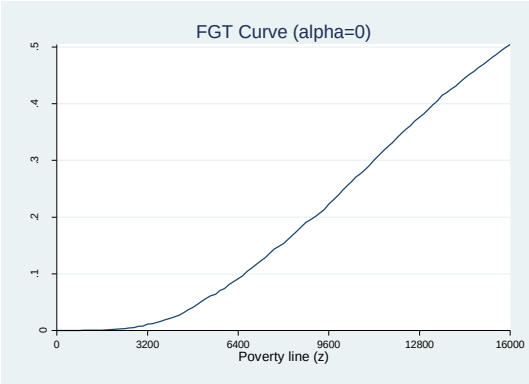


Fig. 4.2a Fig.4.2b

Fig. 4.2 FGT Curve of Household Expenditure in Rural Nigeria (1996)

Fig. 4.3a Fig. 4.3b



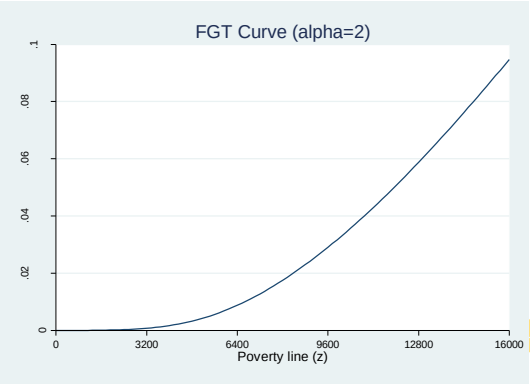


Fig. 4.3a Fig. 4.3b

Fig 4.3 FGT Curve of Household Expenditure in Rural Nigeria (2004)

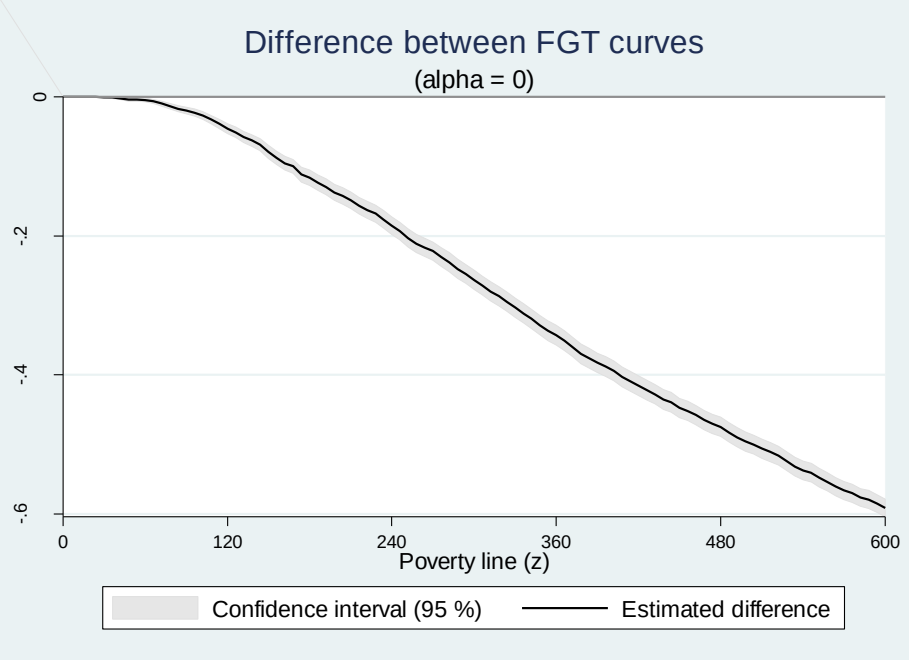


Fig.4.4

experienced has only resulted in further concentration of national income in the hands of a few proportion of the population (Matlon 1979; Ipinnaiye, 2001). This national trend was also reflected at the community or city level, which made income inequality a useful metric in understanding the state of the community. The contribution of growth to poverty was more because of concentration of wealth in the hands of a few elite in the country. This has led to increasing inequalities in inter-personal incomes and a widening gap between urban and rural incomes, especially since 1986. It was therefore evident that the policy environment required for rapid economic growth cannot be provided by policies which resulted in further concentration of national income in the hands of a few proportion of the population.

For the period t_2 as reference point, redistribution contributes less to poverty. This could be as a result of a more egalitarian redistribution of resources. During this period, the new civilian leadership has shown commitment to improving the lives of the people through serious economic and social reforms. Also the government realised that development should be participatory with government spearheading all activities in partnership with the private sector, the civil society and the individual citizens. Under a peaceful and conducive environment, it is expected that every economic agent will have the incentive to concentrate on productive activities and will be able to create and generate wealth thereby contributing to societal well being. Reform programmes put in place during the period seemed to have a close association with the rise in growth effects, indicating that both economic growth and its ability to reduce poverty were achieved in the reform process. It was assumed that as economic reforms are likely to bring in higher growth, the growth or mean effect is expected to go up in Period t_2. Though the extent of fall in the incidence of rural poverty in the 2000s has been only marginally higher than that in the 1990s as noted above, the assumption of a higher growth or mean effect in Period 2 may still be valid. In addition to this, the inequality effect might also have fallen in Period t_2 compared to period t_1 if economic reforms aimed at generating pro-poor growth, that is, employment generation occurring in the process of economic growth has occurred (Kakwani and Pernia, 2000). Further, as the coefficient of variation of the change in the incidence of rural poverty rose in the 2000s over the 1990s it can be assumed that the economic reforms executed at different levels across states have generated different means and/or inequality. A strategy of growth with employment generation would help the poor benefit from economic reforms, enhancing not only the growth effect but also making inequality and population shift effects more beneficial to poverty reduction (Bhanumurphy and Mitra, 2004).

Democracy in Nigeria which has been in place since 1999 came with the introduction of several economic reform measures and these have resulted in the improvement of living standards of the people. For example, with the expansion in the number of private mobile telephone operators, many youths who would have been unemployed are engaged in the sale of recharge cards and operation of telephone kiosks. This means that many were taken from the category who earn less than US$ 1 (₦128) a day and this may explain part of the decline in measured poverty incidence from the level of 50 per cent in 1996 to 42 per cent in 2004. There has also been a significant increase in the number of private and public educational institutions. The number of primary schools (public and private) increased from 49,306 in 2001 to 59,174 in 2003. The number of secondary schools (public and private) rose from 6,292 in 2001 to 10, 964 in 2004 and the number of university increased from 51 in 2001 to 63 in 2004 (NBS, 2006). All these developments provided more employment opportunities for teaching and non-teaching occupations.

Shapley decomposition values for the two periods are -0.025 and -0.056 for growth and redistribution components respectively. Both values carry negative signs implying that there is a decline in poverty as a result of effects of growth and redistributive policies in the country within the two periods. Redistribution component is however more poverty reducing than growth. This is as a result of the economic reforms' policies of the Obasanjo civilian regime which resulted in a more even distribution of resources. It may be added here that economic reforms have a direct influence on productivity as infrastructure supply, concentration of activities, and other factors constituting the external economies of scale are likely to grow with reforms. Therefore, with differences in the level of reforms pursued across the country, productivity and growth differentials are likely to grow, indicating the tendency of divergence rather than convergence. From the result in Table 5, the growth in income during this period of economic reform would have reduced poverty much more than what is observed had the rising inequality not offset some of the potential positive effects of growth on poverty. This is in line with the slightly modified *dynamic version* of the Kuznets hypothesis which postulates that inequality increases as the rate of growth of income goes up. It means that under faster growth rates, the poor will receive proportionally lower benefits of growth than the rich. As recorded by Kakwani and Pernia (2000), the degree of poverty depended on two factors: average income and income inequality. An increase in average income reduces poverty and an increase in inequality increases it. Economic growth increases average income (or consumption) but at the same time it may be accompanied by increasing

or decreasing inequality. The increase in inequality implies that the proportional benefits received by the poor are less than those of the non-poor while a decrease in inequality implies that the proportional benefits received by the poor are more than those of the non-poor. Thus, in strict terms, growth is pro-poor when it is accompanied by a reduction in inequality. To achieve a rapid reduction in poverty, the government should focus on maximising economic growth while maintaining macroeconomic stability. The evidence from the decomposition analysis buttresses the view that equitable distribution of income, and therefore pro-poor growth, is essential for growth to translate into meaningful and rapid poverty reduction.

4.2.6: A Profile of Poverty of Occupational Groups in Rural Nigeria

For the occupational profile, the sampled households are classified (based on the occupation of household head) into five occupational categories, namely: wage income, agricultural income, non-farm income, remittances and others (Table 6).

In the rural sector of Nigeria (2004), the incidence of poverty was highest (65.7%) among Remittances Income Earners (RIEs) followed by Other Sources of Income (about 58.0%). It was lowest (34.1%) among Non-farm Income Earners (NIEs). The poverty gap index followed the same trend. It indicated 63.0 per cent for RIE and 34.2 per cent for NIE respectively. Farming activities are thus a means of reducing the incidence of poverty in rural Nigeria. Similarly, remittances contributed most (61.8%) to rural poverty based on FGT (2) in 2004 and this was followed by others (59.5%). Next is wage income (55.4%) while NIEs contributed the least (32.8%). These differences in values of poverty headcount and poverty severity index (FGT (2)) as noted by Araar and Duclos (2007) is an indication that the usual choice of the headcount index to assess the outcome of anti-poverty policies can very well result in poverty-inequality findings that contrast with those of others which are more distribution-sensitive ways to measure poverty. From the result, non- farm activities can therefore serve as means of reducing the incidence, depth and severity of poverty in rural Nigeria.

Table 5: Decomposition of Poverty in Rural Nigeria into Growth and Redistribution Components

		Decomposition of Poverty into Growth and Redistribution Components				
		Datt and Ravallion			Shapley	
		Growth	Redistribution		Growth	Redistribution
P_0		Component	Component	Residual	Component	Component
	t_1	-0.239	-0.369	0.258	-0.109	-0.240
	t_2	0.088	-0.112	-0.258		
P_1						
	t_1	-0.042	-0.082	0.008	-0.038	-0.079
	t_2	-0.034	-0.075	0.008		
P_2						
	t_1	-0.030	-0.061	0.011	-0.025	-0.056
	t_2	-0.019	-0.049	-0.011		

4.2.7: Occupational Inequality in Rural Nigeria

The Gini coefficient is adopted because it is a useful summary indicator of inequality. Table 6 shows the profile of occupational Gini coefficient in rural Nigeria. The overall Gini index for all the occupational groups is 39.0 per cent meaning that the overall income Gini index in rural Nigeria is low. This means that income disparity is less among them. This could be as a result of the homogenous nature of income received in the rural area. Among the various sources of income, agricultural income has the lowest (45.3%) Gini. This is followed by NIEs with Gini of 55.3%. Highest income variation (67.1%) was recorded among RIEs. This implies that there is high inequality among those with remittances income. The financial sector reforms and exchange rate liberalisation are some of the measures that began in the mid-eighties to attract remittances, especially through official channels. A substantial part of these remittances goes to rural areas as a result of rural-urban migration and even international migration. This finding is in line with those of Portes and Rumbaut (1990) and Lipton (1980) which contended that pioneer migrants tend to come from households at the upper-middle or top of the sending- area's income distribution and the income they send home in form of remittances is therefore likely to widen income inequalities in migrant source areas. Some rural dwellers thus have access to hard currencies which leads to inequality. This finding corroborates that of Oyekale *et al* (2006) that agricultural income had the lowest Gini of 0.6987 while incomes from government transfers recorded the highest inequality (0.9944). Incomes realised from other sources and wage employment constituted 0.92 and 0.91 respectively. This shows that efforts to increase wage employment income will not lead to reduction in income inequality, as more income will be concentrated in the hands of the rich.

Table 6: Poverty Profile of Occupational Groups in Rural Nigeria (2004)

	P_0	P_1	P_2
INCOME SOURCE			
Wage income	0.569	0.558	0.554
Agricultural income	0.369	0.369	0.352
Non -farm income	0.341	0.342	0.328
Remittances	0.657	0.629	0.618
Others	0.579	0.519	0.595
Total	0.323	0.106	0.049

The result implied that promotion of agricultural and non-farm businesses have the potentials of boosting the incomes of the poor and thus reducing inequality. Expanding employment opportunities in agriculture and non-farm self-employment where the poor are concentrated is an obvious growth strategy which should be adopted. Therefore, incentives aimed at increasing agricultural production in the rural areas as well as encouraging NFSE are direct efforts to raise the income of the rural poor. Thorbecke and Jung (1996) used a Social Accounting Matrix (SAM) in Indonesia to address this question and noted that employment effects, both direct and arising from intersectoral linkages, accounted for most differences across sectors in the poverty impact of growth, and that agricultural growth was the most pro-poor of all. Datt and Ravallion (1998a, b), provided an even more striking result for India: over places and times, faster agricultural growth is substantially beneficial for both rural and urban poverty reduction. If growth is concentrated in sectors from which poor people are more likely to get their incomes, such as agricultural growth, surely such growth will have greater impact on poverty reduction. Osmani (2000) thus advocates an agriculture-led growth policy rather than industrial growth policy, which is widely believed to work better for poverty reduction in more equal and labour-intensive countries. However, while increased employment in the areas mentioned (agriculture and non-farm self-employment may have some overall poverty reducing effect) the marginal effects in practical terms may be too small to significantly impact on reducing inequalities.

4.3: Marginal Impact by Groups

4.3.1: Marginal impact on inequality

Table 8 shows the marginal impact of each period on inequality and on poverty. At the margin, income distribution impact on inequality at ten per cent was less in 1996 (0.04) than in 2004 (2.45). The marginal impact shows that 1996 contributed less to inequality than 2004. This meant that at the margin, in 1996 there was more egalitarian distribution of income than in 2004.

Table 7: **Occupation Gini in Rural Nigeria**

INCOME SOURCE	GINI	STD	Confidence	Interval(95%)
Wage income	0.623	0.0019	0.607	0.615
Agricultural income	0.453	0.0038	0.427	0.442
Non -farm income	0.553	0.0023	0.559	0.569
Remittances	0.671	0.0023	0.663	0.672
Others	0.626	0.0033	0.615	0.628
Total	0.390	0.0033	0.384	0.397

4.3.2: Marginal impact on poverty.

From Table 8, the marginal impact of growth on poverty shows that at ten per cent, the distribution of income in 1996 contributed less (0.02) to poverty than the distribution pattern in 2004(0.23). People were more vulnerable to poverty in 2004 than in 1996. The emergence of democratic governance in 1999 brought in a wave of institutional and economic reforms. Coupled with the government's programme of economic reforms, new sources of growth with potentials for employment generation were put in place. Of particular relevance is the privatization programme which broke the public monopoly in the telecommunication sector, and the liberalization policies in other key services sectors such as education. Because of the current structural transformation in Nigeria such as industrialisation and urbanisation, the marginal impact of income distribution on poverty was less in the latter period (2004) than in the former (1996). This conforms with Kuznets' (1955) hypothesis which postulates that inequality in income distribution worsens initially when economic development takes off and then improves in the mature stage of industrialisation. The hypothesis popularly known as "inverted U-shaped pattern of income inequality" is characterized by inequality first increasing then decreasing with economic development. It means that under faster growth rates, the poor will initially receive proportionally lower benefits of growth than the rich.

4.3.3: Between and within group contributions to inequality and poverty.

As presented in Table 8, the disparity in income distribution within the two periods contributed less (0.248) to inequality than the variation between the two periods (0.362). In like manner, the disparity in income distribution within the two periods contributed less (0.245) to poverty than the variation between the two periods (2.934).

4.4: Growth and Inequality Elasticities of Poverty

4.4.1: Growth Elasticity of Poverty:

The growth elasticity of poverty is the rate of reduction in poverty resulting from a 1% increase in average income. If, for example, the growth elasticity of poverty is two, then one would expect an increase in average income of 2% per year to yield a reduction of 4% per year in poverty.

Table 8: **Marginal Impact by Groups**

Group	Population Share	Marginal Impact of Inequality on poverty	Marginal impact of Growth on Poverty
1:1996	0.36525	0.00038	0.00018
2:2004	0.63475	0.02445	0.00227
Within		0.02483	0.00245
Between		0.03616	0.02934
Population	1.00000	0.00594	0.01068

In this study, the growth elasticity of poverty was found to be -0.62 per cent. It meant a ten percent increase in growth will lead to 6.2 per cent reduction in poverty or a ten per cent increase in growth from 1996 to 2004 would have led to 6.2 per cent decrease in poverty. The growth elasticity of poverty in Nigeria is considered low generally. Aigbokhan (2008) estimated growth elasticity of poverty to be -0.64. This is comparable with calculated value of -0.79 which are consistent with Ram's (2006) contention that a value of the order -1 is more realistic for developing countries context. This may have been aided by high initial inequality as Gini index for 1996 was 0.49 while for 2004 it was 0.46. Previous researches had also shown that the value of the growth elasticity is lower in countries with higher income inequality, as measured by the Gini coefficient (Ravallion, 2001; Hanmer and Naschold, 2000). This meant that policies which reduce inequality will increase the amount of poverty reduction associated with economic growth that is increase in average income.

4.4.2: Inequality Elasticity of Poverty

The inequality elasticity of poverty was calculated to be -0.34. This meant that if we decrease inequality by ten per cent, poverty is going to reduce by 3.4 per cent. Also, the results indicated that though growth was taking place, poverty was declining at a lesser rate than the rate at which growth was taking place. That is, growth is at higher rate than the rate at which poverty is decreasing. The reason for rapid economic growth in the country in 2004 may be as a result of the re- invigoration of the reform programmes by government. The privatisation programme, commenced a decade earlier was continued in the major sectors of the economy. Deregulation of the downstream sub-sector was introduced, designed to allow for variable petroleum product prices across the country instead of a regime of uniform prices that existed until 2000.

Arguably, the most pressing issue for research is whether governments can reduce inequality without adversely affecting the rate of economic growth. Nevertheless, there is the need for researchers to document precisely how much additional poverty reduction, or additional pro-poor growth could be brought about from a reduction in inequality, assuming that the latter could be achieved without a large adverse effect on the growth rate.

4.5: Determinants of Inequality and Growth Differential (Oaxaca- Blinder Decomposition)

Tables 9a and 9b show the results for Oaxaca-Blinder decomposition using household expenditure (*per capita* expenditure) as an indicator of well-being. The indicator, transformed into logarithms, was regressed on a set of determinants of poverty, namely; household size, sex of household head, age of household head, farming, education of household head, house unit type, and number of rooms. Others are source of fuel for cooking, dependency ratio, age squared, and number of hours worked per week. From the decomposition results in Tables 9a and 9b, the adjusted R^2 for the initial period (1996) is 0.2739 while for the second period (2004) the adjusted R^2 is 0.3730. This means that at the initial period, the selected variables explained 27 per cent of the variations in the dependent variable, log *per capita* expenditure. Similarly, in the second period, the selected variables are able to explain 37 per cent of the variations in the dependent variable (log *per capita* expenditure). These values suggest that our model is of good fit as remarked by Gunatilaka and Chotikapanich (2006). Leaving large proportion of the expenditure unexplained however suggests measurement errors, unobserved and omitted variables. All the regressors are significant at five per cent level.

Age of household head

The coefficients of age are 0.01077 and 0.01988 in 1996 and 2004 respectively. The signs are positive for both periods. This is an indication that age is an important factor for productivity. A still active age presupposes the period when people are expected to be responsive to development initiatives. The age of household head influences household welfare. Welfare rises with age as more human capital such as education or working experience is accumulated. A higher magnitude in 2004 could be due to education reforms of the Obasanjo administration which allowed higher enrolment in schools. It suggests higher human capital development which improves productivity.

Square of age

The coefficients of the square of age for both periods are –0.00008 and -0.00017 in 1996 and 2004 respectively. This conforms with *a priori* expectation that when people are getting older, there are lesser returns to productivity. A negative correlation between *per capita* expenditure and the quadratic of age conforms to the expectation that income tends to

fall after retirement and when in old age. The majority of pensioners have incomes which are substantially lower than the average incomes of other people.

Household Size

Household size for the two periods both have negative coefficients of -0.04389 and -0.14010 for 1996 and 2004 respectively. This implies that the larger the size of household, the lesser the *per capita* income. This indicates a negative relationship between *per capita* expenditure and household size. It also shows that income decreases as household size increases. Awoyemi (2004) and Oyekale *et al* (2006) posit that household size is inversely related to income. This affirms that larger household size tends to poverty than small family size. *Per capita* expenditure declines with larger family size. This complies with most poverty studies which indicate that larger household sizes tend to be poorer than smaller ones. Large household sizes should therefore be discouraged among rural households to reduce poverty.

Sex of household head

The sex of household head had negative relationship with *per capita* expenditure in 1996 and 2004, with -0.11709 and -0.21331 respectively. This means that females contribute less to *per capita* income than male due to their low economic returns. This is partly because Nigeria reports significant gender inequalities in women's labour market participation, remuneration, health and human capital, with indicators for women being recorded as substantially lower than those for men. Women are likely to be poorer than men and have fewer options for escaping poverty. Widows are also more vulnerable to poverty than widowers—which partly reflects patriarchal property rights and inheritance practices. Moreover, because women have less formal education than men they tend to be disproportionately confined to lower returns and low productive employment in the informal economy. Consequently, their ability to escape poverty through employment is also limited. (USAID, 2007). The higher magnitude in 2004 suggests that women are coming up in labour participation. They are securing more assets in income generation.

House unit type

This is also positive for both periods. The coefficients are 0.03830 and 0.03024 for 1996 and 2004 respectively. It means accommodation has a positive relationship with per capita income. One can safely state that decent accommodation also influences welfare positively. Poverty is common among household dwelling in huts than those dwelling in decent houses. Good accommodation increases productivity (Omonona, 2010). There is no significant difference in the coefficients.

Number of rooms

Closely related to the above, there is sufficient evidence to show that high number of rooms increases productivity probably as a result of better comfort.

The coefficients are 0.02258 in 1996 and 0.00174 in 2004. Expectedly, number of rooms are closely related to household size. We are of the opinion that big household sizes are prone to overcrowding and less productivity. With more rooms, there is higher productivity as a result of better comfort.

Educational status

In consonance with human capital theory, the study shows a positive influence of education on *per capita* expenditure. Education will lead to better employment which in turn will support higher income as it affords more job opportunities and enhances the earning capacity of an individual. It helps to break the barriers to high risk pay jobs and improves the well-being of households. The association between human capital and economic well-being is derived from the early work of Schultz (2002) which suggests that economic growth is largely the result of investment in human capital. The positive coefficients of 0.12879 and 0.14085 for 1996 and 2004 respectively indicate the magnitude of positive impact of education on *per capita* expenditure for the two periods. This can again be attributed to the positive effects of mass education policy of the present government which has been in place since 1999.

Occupational status

Unexpectedly, the impact of major occupation on *per capita* expenditure is exciting. The result shows a positive impact in 1996 (0.01768) and negative impact in 2004 (-0.00649). The higher coefficient in 1996 is an indication that high proportion of the population were engaged in farming activities particularly in the early sixties. However, involvement of people in non-farm activities as a result of diversification draws more people away from farming during the later years. For example, the service sectors namely banking and finance, professional and business services and agriculture are new sources of employment growth in the Nigerian economy (NBS, 2006). Also, there has been a significant increase in the number of private educational institutions ranging from primary schools (public and private) to university and equivalents. All these provide employment opportunities for different categories of staff. Provision of basic infrastructure in the rural areas will help enhance livelihood diversification into non- farm activities which has implication for increasing household income. A redistributive policy that would ensure the provision of basic infrastructure in the rural areas would therefore help to alleviate poverty.

Source of fuel

The importance of energy in the household consumption underscores the need in the study to examine the various sources of fuel to the farming household. The study reveals a mixed result of positive influence in 1996 (0.00639) as opposed to negative in 2004 (-0.03214). This result suggests that electricity which is the main source of energy seems to be more regular and stable in 1996 than 2004 with erratic or epileptic electricity supply. During the second period however, the negative relationship with *per capita* expenditure is an indication of spending too much on energy which increases poverty and reduces *per capita* income. Apart from the fact that only a small proportion of Nigerian rural dwellers have access to electricity as a source of energy, it is evident that only few people have the means to use it. The current deregulation policies of the government which have led to high prices of petroleum products such as kerosene which is a common source of fuel for rural people can also cause people to spend much on energy.

Dependency ratio

The coefficients are 0.88788 and -0.10452 in 1996 and 2004 respectively. It is defined as the ratio of the number of household members who are less than 14 years old and more than 65 years and (≤14 years and ≥65 years) to household size. In other words, it is the population of the young and the old as a share of the working age population. Dependency ratio has positive value in 1996 showing a direct relationship with *per capita* expenditure meaning spending more on the young and old. The period corresponded with the time when economic reform programmes of the civilian government were not yet in place. The negative value in 2004 means the ratio has fallen probably due to child labour activities which made children to be less dependent on their parents. It could also mean older population are getting income from pension and remittances among others to take care of the lapses. The gap in the dependency ratio between the two periods could also be attributed to the positive effects of economic reforms of the various civilian administration since 1999 which enabled more people to be involved in economic activities.

Weekly hours spent on economic activities

It is evident that the number of hours spent on productive activities in a week contributes positively to *per capita* expenditure. The coefficients are however 0.00002 and 0.00152 in 1996 and 2004 respectively. The coefficient is higher in the latter year, meaning that the longer people work, the better the pay.

Table 9a: Determinants of Inequality and Growth Differential (Oaxaca- Blinder Decomposition) 1996

Log per capita expenditure	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
Age of household head	0.01077	0.00410	2.62	0.009	0.00272	0.01881
Age squared	-0.00008	0.00005	-1.51	0.131	-0.00018	0.00002
Household size	-0.04389	0.00547	-8.02	0.000	-0.05462	-0.03316
Gender of household head	-0.11709	0.03843	-3.05	0.002	-0.19245	-0.04175
House unit type	0.03830	0.00767	4.99	0.000	0.02326	0.05335
Number of rooms	0.02258	0.00687	3.29	0.001	0.00911	0.03605
Education status	0.12879	0.00937	13.74	0.000	0.11041	0.14717
Occupation status	0.01768	0.01368	1.29	0.196	-0.00914	0.04451
Source of fuel	0.00639	0.00966	0.66	0.508	-0.01254	0.02532
Dependency ratio	0.88788	0.06158	14.42	0.000	0.76715	1.00861
Weekly hours worked	0.00002	0.00001	1.32	0.188	-8.97E-06	0.00005
Constant	9.42095	0.11445	82.31	0.000	9.19656	9.64534

Number of obs.(A) = 4328
F(11, 4316) =149.35
Prob > F = 0.0000
R-squared = 0.2757
Adj R-squared = 0.2739
Root MSE = .64503

Table 9b: Determinants of Inequality and Growth Differential (Oaxaca- Blinder Decomposition) 2004

Log per capita expenditure	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
Age of household head	0.01988	0.00371	5.36	0.000	0.01262	0.02715
Age squared	-0.00017	0.00004	-4.52	0.000	-0.00024	-0.00009
Household size	-0.14010	0.00262	-53.47	0.000	-0.14524	-0.13497
Gender of household head	-0.21331	0.02767	-7.71	0.000	-0.26755	-0.15907
House unit type	0.03024	0.00695	4.35	0.000	0.01662	0.04387
Number of rooms	0.00174	0.00376	0.46	0.644	-0.00564	0.00912
Education status	0.14085	0.01242	11.34	0.000	0.11650	0.16520
Occupation status	-0.00649	0.02515	-0.26	0.796	-0.05580	0.04281
Source of fuel	-0.03214	0.02126	-1.51	0.131	-0.07382	0.00954
Dependency ratio	-0.10452	0.01129	-9.25	0.000	-0.12666	-0.08237
Weekly hours worked	0.00152	0.00076	1.99	0.047	0.00002	0.00301
Constant	6.95722	0.13412	51.87	0.000	6.69429	7.22014

Number of obs.(B) =7204
F(11, 7192) = 390.55
Prob > F = 0.0000
R-squared = 0.3740
Adj R-squared = 0.3730
Root MSE = .7292

CHAPTER FIVE
SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Summary

Given the fact that poverty in most Sub-Saharan African (SSA) countries especially in Nigeria is a rural phenomenon, this study examined the change in poverty levels among rural population in Nigeria over a period of time. Two different periods were chosen. The initial period is 1996 while the final period is 2004. The study is based on secondary data obtained from National Consumer Survey (NCS) of 1996 and 2003/2004 Nigeria Living Standard Survey (NLSS).

The results from the study affirmed that during the initial period of the research (1996), the least family size was one while the largest family size was 36. During the final period of research however, the least family size was one while the largest size was 22. The average family size was made up of five members at the initial period while an average family size of four was recorded during the final period.

The percentage of males at the initial period was 87.4 while that of females was 12.6 per cent. The result of the final period gave a contrary report of 45.9 per cent for the male population while a higher percentage of 54.0 was recorded for females. This is an indication of improvement in women participation in the labour force. Based on population distribution by age of household head, the average age during the initial period was 45 while it was 22 in the final period.

The dependency ratio during the initial period of study is 87.5 per cent. This has however reduced by 70.1 per cent during the final period to 12.6 per cent. This is an indication of improvement in *per capita* expenditure during the second period. The respondents with no formal education constituted 67.3 per cent in 1996 and 42.6 in 2004. This is followed by those with primary education with 20.8 per cent in 1996 and 26.6 in 2004. Secondary school education is next with 9.2 per cent which improved to 29.3 per cent in 2004. Tertiary education recorded 2.8 per cent in 1996 and 1.5 per cent in 2004. This shows that majority of the people in rural Nigeria are still non-literates. Higher percentages in 2004 for primary and secondary education is however an improvement which may be due to educational policies of the present civilian regime. The mean per capita expenditure was ₦ 1,363.69 *per annum* at the initial period while it was ₦ 31,764.05 *per annum* at the final period.

The average number of hours worked per week is 45.2 per cent during the initial period while it is 60.5 per cent in the second period showing improvement in hours devoted to economic activities.

The Lorenz curves for the two periods revealed a deviation from the line of perfect equality. During the initial period, the deviation is more convex than what obtains in the second period. The less convex nature of the curve during the second period (2004) is an indication of reduction in inequality. In 1996, Gini was found to be 48.0 per cent, while for the final period (2004), the Gini coefficient was about 46.0 per cent, an indication of lower inequality among rural dwellers during this period.

The estimates of poverty for the two periods were also presented. The estimates of head-count ratio, poverty gap ratio and FGT poverty index at $\alpha = 2$ are also presented. About 69.2 per cent of the rural population lived in poverty in 1996. The level of poverty in the rural area was more severe in 1996 than what obtained in 2004. The corresponding figure for rural poverty during the final period (2004) was 65.1 per cent. Poverty gap index for the two periods also followed the same pattern. It was lower (27.6 per cent) in 2004 than (34.5 per cent) in 1996. The poverty severity index, P_2 also shows a similar trend, 21.2 per cent and 15.0 per cent in 1996 and 2004 respectively. It is more distribution-sensitive than the other two measures.

The study also examined the contribution of growth in mean income as well as redistribution to poverty. Using the period t_1 as reference point, the growth component is negative (-0.030) and the redistribution component is also negative (-0.061). For the period t_2 as reference point, the growth component is (-0.019) while the redistribution component is (-0.049). During the initial period, a decline in the *per capita* household income and economic recession contributed to increase in poverty. For the period t_2 as reference point, redistribution contributed less to poverty. This could be as a result of a more egalitarian redistribution of resources which followed reform policies of the civilian administration. During this period, the new civilian leadership was apparently committed to improving the lives of the people through serious economic and social reforms. This means that many people moved out of the category of those who earn less than US$ 1 (about ₦128) a day and this may explain part of the decline in measured poverty incidence from its level of 69.2 per cent in 1996 to 65.1 per cent in 2004.

A profile of poverty among occupational groups in the rural sector in Nigeria (2004), shows that the incidence of poverty was the highest among those with remittances income (65.7%) and other sources of income (58.0%). It is lowest among non-farm income earners (34.1%) and agricultural income group (36.9%). The poverty gap index follows the same trend for the five sources. Farming activities are thus a means of reducing the incidence of poverty in rural Nigeria. Remittances contributed most to rural poverty (61.8%) based on

poverty severity in 2004, followed by others (59.5%). Next is wage income (55.4%) while non – farm income contributed the least (32.8%).

The overall occupational Gini inequality is found to be 39.0 per cent meaning that the overall income Gini in rural Nigeria is low. This could be as a result of the homogenous nature of income received in the rural area. The income disparity is less among them. Among the various sources of income, agricultural income has the lowest Gini (45.3%). This is followed by non- farm income with Gini of 55.3 per cent. Income from remittances records the highest inequality (67.1%). This implies that there is high inequality among those with remittance income because it is the rich that usually have access to such income. Remittances may be significant especially those that come in form of foreign currencies. It can thus significantly increase the income of recipients thus increasing and smoothening their consumption. Most times, it is the better-off households who are capable of producing migrants and receiving remittances. The poor households would not benefit from such remittance flows. They tend to generate inequality so that poverty tends to deepen.

The marginal impact of each period on inequality and on poverty indicates that at 10 per cent, income distribution impact on inequality is less (0.004) in 1996 than (2.45) in 2004. The marginal impact shows that 1996 contributes less to inequality than 2004. This means that at the margin, in 1996 there was more egalitarian distribution of income than in 2004. The marginal impact on poverty shows that the distribution of income in 1996 contributes more (0.02) to poverty than the distribution pattern (0.23) in 2004. People were more vulnerable to poverty in 1996. The emergence of democratic governance in 1999 brought in a wave of institutional and economic reforms.

As shown on Table 8, the disparity in income distribution within the two periods contributes less (0.248) to inequality than the variation between the two periods (0.362). In like manner, the disparity in income distribution within the two periods contributes less (0.245) to poverty than the variation between (0.293) the two periods. In this study, the growth elasticity of poverty is found to be -0.62 per cent. It means a 10 per cent increase in growth will lead to 6.2 per cent reduction in poverty or a 10 per cent increase in growth from 1996 to 2004 would have led to 6.2 per cent decrease in poverty. The growth elasticity of poverty in Nigeria is considered to be low generally. The inequality elasticity of poverty was also calculated to be -0.34. This means that if we decrease inequality by 10 per cent, poverty is going to reduce by 3.4 per cent.

The results indicate that though growth is taking place, poverty is declining at a lesser rate than the rate at which growth is taking place. That is, growth is at higher rate than the rate at which poverty is decreasing.

Lastly, using household expenditure (*per capita* expenditure) as an indicator of well-being, a multivariate analysis (Oaxaca-Blinder decomposition) was carried out. The indicator, (per capita expenditure) transformed into logarithms was regressed on a set of determinants of poverty, namely; household size, sex of household head, age of household head, farming, education of household head, house unit type, and number of rooms. Others are source of fuel for cooking, dependency ratio, age squared, and number of hours worked per week. From the decomposition result, the adjusted R^2 for the initial period (1996) is 27 per cent while for the second period (2004) the adjusted R^2 is 37 per cent.

The coefficient of age (0.01077; 0.01988), house unit type (0.03830; 0.03024), number of rooms (0.02258; 0.00174), education status (0.12679; 0.14085) and weekly hours of work (0.00002; 0.00152) have positive relationships with per capita expenditure for 1996 and 2004 respectively.

Square of age (-0.00006; -0.00017), household size (-0.04389; -0.14010) and gender (-0.11709; -0.21331) have negative coefficients for 1996 and 2004 respectively. The distribution based on occupation status (0.01768; -0.00649), source of fuel (0.00639; -0.03214) and dependency ratio (0.88788; -0.10452) however reveals mixed results for the two periods.

5.2 Conclusion

This research decomposed the change in poverty over two time points in terms of pure growth effect (holding redistribution constant) and redistribution effect (holding growth constant). Such an analysis enables a critical analysis of the policy issues and offers a deeper understanding of the reform process. The two time periods are 1996 and 2004 described as pre-reform and reform periods respectively, though strictly speaking, reforms were initiated in 1999 when the present civilian administration came to power. While the growth/mean effect has been dominant and has resulted in a decline in the incidence of poverty in both periods in Nigeria, inequality which in general rose in the process of growth, raised the general poverty level in the country.

The average ages of household head for the two periods is an indication of still active working population in rural Nigeria. They are the ages in which people are expected to be highly productive most especially in agricultural activities which is energy demanding.

Household size is still relatively high in Nigeria. They constitute household labour which is still very important in rural families especially in the northern parts of the country.

The percentage distribution of women during the final period of study is higher than that obtained at the initial period. This is an indication of improved participation of women in economic activities especially in agriculture, which is the major occupation in rural Nigeria.

The type of housing is an indication of wealth status in rural areas and this determines the level of productivity.

For the two periods studied, the percentages of the respondents with no formal education constitute the highest proportion. This is followed by those with primary education. This shows high level of illiteracy in rural Nigeria.

Low mean per capita expenditure as recorded during the two periods is an indication of poor condition of living as it conforms to living on an income of less than a dollar per day.

The dependency ratio during the initial period of study is higher than in the final period. Low dependency ratio is important for income growth and hence improved standard of living. Weekly hours spent on economic activities indicate that a lot of time is devoted to economic activities among rural household families.

Lorenz curve shows a deviation from the line of perfect equality for the two periods. The deviation is more during the initial period of study, an indication of greater inequality during that period.

Estimation of poverty for the two periods revealed that there was a higher incidence of poverty during the initial period than during the final period. The overall incidence of poverty in the country dropped from 69.2 in 1996 to 65.1 in 2004. Economic reforms had been pursued at different levels across the country, and this seems to have enhanced variations in economic growth. Other than the role of agriculture in rural Nigeria, the rapid growth of new components of the tertiary sector, such as information technology, business process services, financial institutions and infrastructure services have impacted upon economic growth in varying degrees across the country. Interestingly, this is possibly because of good governance of the reform period, and the beneficial growth/mean effect on poverty increased in magnitude in the reform period relative to the pre-reform period. Thus,naccording to Bhanumurthy and Mitra (2004), reforms seem to have a close association with the rise in growth effects, indicating that both economic growth and its ability to reduce poverty are achieved in the reform process. A strategy of growth with employment generation would help the poor benefit from economic reforms, enhancing not only the growth effect but

also making redistribution effect more beneficial to poverty reduction. The reduction could be as a result of reform programmes of the present system of government.

The distribution- sensitive poverty severity index has also dropped during the final period of the study. This is an indication of more transfer of the budget to the poorest households.

Decomposition of poverty into growth and redistribution components shows that during the initial period, the contribution of growth to poverty was more than that of redistribution. Wealth in the country was concentrated in few hands and not equally distributed among the poor majority. This resulted in increasing inequalities in personal incomes. During the final period, redistribution contributed less to poverty because of more egalitarian distribution of resources. Shapley decomposition values for both periods indicate that there was a decline in poverty for both periods as a result of effects of growth and redistributive policies in the country within the periods.

Understanding the relative impact of different income sources on income distribution helps to identify how the structure of economic growth may have affected both the level of poverty and the nature of inequality. The profile of poverty of different occupation groups indicates that poverty incidence was highest among remittance income earners. This was followed by other sources of income earners. It was least among non-farm income earners. Similarly, poverty severity was highest among remittance income earners and lowest among non-farm income earners. Non- farm activities can therefore serve as means of reducing the incidence, depth and severity of poverty in rural Nigeria.

Analysis of inequality among rural population reveals that the overall inequality among rural dwellers was low. This could be attributed to the homogenous nature of rural economy. Disparity in income received was low. Among the various occupation groups, agricultural income has the lowest Gini. Remittance income earners recorded the highest. Agriculture thus remains the most important occupation and needs to be promoted. Remittance income increases inequality.

The marginal impact of each period on poverty shows that the distribution of income during the initial period contributes more to poverty than the distribution pattern in the final period. Income distribution impact on inequality is less at the initial period than in the final period. Between and within group contributions to inequality and poverty shows that the disparity in income distribution within the two periods contributes less to inequality than the variations between the two periods. In like manner, the disparity in income distribution

within the two periods contributes less to poverty than the variation between the two periods. This shows efficient budget implementation.

The growth elasticity of poverty was very low and Inequality elasticity of poverty was also low. It means the kind of poverty reduction taking place in Nigeria was not enough to reduce poverty and inequality significantly. Although growth was taking place, poverty was declining at a lesser rate than the rate at which growth was taking place. The fact that overall rural income distribution did not improve despite goverment interventions perhaps indicates that the growth process in Nigeria was actually unequalising. The unequalising effect is not strong enough to completely offset the poverty-reducing effect of rising *per capita* income.

The analysis of the determinants of temporal inequality and growth differential reveals that age of household head, type of housing, number of rooms, level of education and weekly hours worked have positive relationships with *per capita* expenditure. This conforms to *a priori e*xpectations. Household size, gender of household head and square of age reveal negative relationships with *per capita* expenditure. Occupation status, source of fuel and dependency ratio indicate mixed results. The low R^2 for the two periods is appropriate for consumption analysis of this type.

The picture painted by the results of this research suggests that the success of the ongoing poverty reduction efforts will require not just a rise in *per capita* income but also how to ameliorate income inequality. While increasing poverty is an indication that something is fundamentally wrong with the development efforts, increasing inequality signals either the unevenness of growth, the unevenness of the distribution, the weak pathways in the spread of the benefits of growth, or the lack of anti-poverty reducing policy instruments.

Ravallion and Datt (1996) submit that rural economic growth is the main contributor to national poverty reduction, through both its direct effect within the rural economy and through spillover effects on the urban economy. In particular, rural economic growth reduced both rural and urban poverty while urban growth reduced only urban poverty without leaving any discernible effect on rural poverty. Thus, almost the whole of rural poverty reduction and a part of urban poverty reduction came through rural economic growth which essentially means agricultural growth in the Nigerian context.

5.3 Policy Recommendations

- In view of the fact that the incidence and severity of poverty is lowest among agricultural and non- farm income earners, the efforts to improve agricultural production, develop new agro-industries, support small and medium scale enterprises

and expand labour intensive manufacturing are all examples of the labour-intensive employment oriented initiatives.

There is the need for the promotion and development of public policies and programmes in favour of non- farm employment. This should be done alongside agricultural development because agriculture still remains the food basket and bedrock of the nation.

- Participation in non-farm activities needs to be encouraged most especially among households with little access to land. This can be encouraged by strong focus on public investment in education, provision of support services and rural infrastructure such as rural road network, railways, waterways, communication facilities and rural electrification. This is expected to facilitate the day-to-day conduct of commerce and communication among the rural population and will serve to link rural to urban economy.
- Rural development projects must generate incentives not only for agricultural activities but also for non- farm income generating activities which are important to rural households. This must be relevant to all categories of people in the rural setting: men, women, wage earners and the self- employed.
- 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.
- 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 Besely and Burgess, (2000), and White and Anderson, (2000) indicate that even modest reductions in inequality can have a large poverty reducing impact.
- Considering the low mean *per capita* expenditure of an average rural family, policy should be aimed at raising the incomes of rural farmers and hence their standard of living. *Per capita* expenditure decreases with increase in household size.
- Formulation of policies and programmes that support rural women must be encouraged to facilitate their access to self-employment, wage employment and non-labour income jobs. This will enable rural women to have increased access to the

rural non-farm labour market. This becomes necessary as this study shows that women contribution to *per capita* expenditure in the country is low.

- Investment in infrastructure, credit targeted at the poor, land redistribution and education can all be important mechanisms to make growth "pro-poor". Productivity-raising redistribution ensures that distribution does not reduce poverty at the expense of growth and produces sustainable poverty reduction. Enhancing asset ownership for the poor is the clearest way to accomplish this.
- There is the need for mass education campaign in rural communities. Re-orientation of the thinking and value system of rural farm household heads and their members should be carried out through educational campaign. This is because majority of rural farmers are of low literacy and poverty increases with illiteracy.
- Public goods such as primary education should be provided in a way that the poor in rural areas should benefit. There should be an educational policy whose benefits flow to rural areas and to poor people. This provision of human capital eventually increases productivity of the economy as a whole. Studies of public education typically show that expenditure on primary and secondary education reduces inequality, and expenditure on tertiary education has a regressive impact. In this context, subsidising higher education at the expense of primary and secondary education reduces the re-distributive impact of public spending because these subsidies will accrue to the middle or high income groups. Therefore, a well-targeted educational scheme for the poor is of paramount importance to facilitate the process of poverty reduction.

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