

**Inequality in the Distribution of Household Expenditure in Rural Nigeria: A
Decomposition Analysis**

**Olanrewaju OLANIYAN
Department of Economics
University of Ibadan
Ibadan, Nigeria**

And

**Timothy. T. AWOYEMI
Department of Agricultural Economics
University of Ibadan
Ibadan, Nigeria**

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Chapter One

Introduction

1.1 Problem Statement

The Nigerian problem in the 20th century has been the inability to get the best from her human resources. The problem goes beyond low income, savings and growth. It includes high inequality, which includes among others, unequal access to basic infrastructure and unequal capabilities (education and health status). There have been numerous studies on poverty in Nigeria, but few on inequality. Incidentally, the importance of unequal access to opportunities, assets, income and expenditure cannot be overemphasised as it plays important roles in reducing poverty and spurring the economy to long-term development. In Nigeria the poor are not just the rich with less money, but are the poorest of the poor. Households are not only poor; they also suffer from vast inequality in incomes, in assets (including education and health status), in control over public resources, and in access to essential services as well as pervasive insecurity (World Bank, 2000). The distributional consequences of economic growth is therefore one of the main policy issues in Nigeria.

Inequality in income distribution has been a subject of controversy in the literature with the Kuznet hypothesis being the focal point. The hypothesis has suggested that as development proceeds, inequality will increase at the very early stages and then decline. However, there has been no consensus on whether a Kuznet curve exists for Africa (Fields, 2000). Although economic growth is important for the success of any economy, it becomes less effective for poverty in the face of massive inequality. Given the depth of inequality in Nigeria, growth may not be enough without giving attention to easing inequality and eliminating barriers that constrain poor people to benefit from a growing economy and to contribute to that growth (Iwayemi et al, 2000). Unless distributional elements are included in developmental programmes and reforms, it will be difficult to solve human development crisis, which might also deter the development of the economy. Rather it has been pointed out that in high inequality countries, up-front actions that are both growth promoting and equity enhancing may be the only realistic option for development to be sustained (Estudilo, 1997).

Nigeria has experienced a high incidence of poverty over the last two decades. The impact of the incidence becomes more important because of the high inequality associated with

even this low level of household income and expenditure. The variations are not just among households but also among different regions of the country (Aigbokhan, 2000).

This study thus attempts to provide an update on household expenditure inequality among different regions in Nigeria and then investigates its factors and forces by decomposing the inequality into within-group and between group components so as to help identify policy directions for the future. Several factors have been identified as having affected income and expenditure inequality in Nigeria. They include the level of education, age distribution of household heads, gender, household size and location (geopolitical zones). All inequality measures reported in this study refers to household per capita expenditure data. The study also presents a decomposition analysis of the overall income inequality into both within-group and between-group components.

The exploration of these factors is expected to raise some policy issues and give policy directions to policymakers especially concerning the identification of the target groups that will enhance more equitable distribution of income among Nigerian households. This will not only reduce inequality but also help the poorest of the poor to contribute to and benefit from the growth and development process.

The paper proceeds as follows. In the next chapter, we present a literature review followed by the methodology in chapter Three. Chapter Four presents the Analysis of the Results while Chapter Five concludes.

Chapter Two

Literature Review

2.1 Introduction

Poverty and income inequalities are two of the important disturbing factors on the way to development in developing countries. Rising inequality threatens growth and poverty reduction targets. 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 income-poverty in developing countries from 30 per cent to 15 per cent between 1990 and 2015.

Although there is a wide consensus that accelerating rates of economic growth is an accepted priority for any anti-poverty strategy, policymakers have largely ignored the issue of inequality. This appears to be a very short-sighted approach. UNU/WIDER, (2001) recognizes this and asserts 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 is a manifestation as well as a strong cause of poverty. The higher the level of inequality, the less impact economic growth has in reducing poverty – for any rate of economic growth. Poverty and inequality are therefore often measured to assess impact of economic and social policies and programmes on standard of living of the people (Okunmadewa, 1999). This chapter presents a review of some empirical and theoretical issues related to inequality among households in the literature

2.2 Review of Theoretical and Empirical Issues

There are several factors identified in the literature to be responsible for inequality in many countries. These include urban-rural disparity, education attainment level of household members, age distribution, gender and regional differences among others (Akita et al, 1999). Kuznet's seminal works of 1955 and 1963 on the relationship between economic development and income distribution aroused the interest on the sources of inequality in developing countries. This relationship has been studied in two directions. The traditional line of research is how growth and development affect income distributions. At the core of this debate was the Kuznets (1955) hypothesis that inequality rises in the process of economic development and then falls again (inverted U-curve). The more recent empirical evidence tends to reject this hypothesis (Bruno et al., 1998). Studies have shown that high degree of inequality in income distribution

can have a negative effect on growth and increase poverty. A study by Person and Tabellini (1980) found a strong negative relationship between initial income inequality and future growth and poverty reduction in both developing and developed countries. Alesina and Perroti, 1996 argued that political instability in a highly heterogeneous and polarized society will enhance unequal income distribution and a low increase in economic well-being. In his review of poverty studies in Africa, Gary 1997, reports that Sub-Saharan Africa has the second-highest income inequality in the world, after Latin America and attributes change in poverty to economic growth and changing dispersion. He further asserts that for any given growth rate, the more disperse the distribution is becoming the smaller is the reduction in poverty.

Canagarajah, et al., 1997, reported increased level of poverty over the period spanning the 1980s and 1990s in Nigeria. The study further reported increased income inequality over the same period. This was established by an increase in the Gini coefficient from 38.1% in 1985 to 44.9% in 1992. In a similar vein, Okojie, et al., 2001 used relative poverty lines based on some percentage of mean per capita consumption expenditure to identify the poor and found that between 1992 and 1996 poverty in Nigeria increased from 43% to 69%. Against this negative impact of and unequal income distribution on economic growth and poverty, we have to consider a positive mechanism, that is, the hypothesis that a more unequal income distribution is instrumental in a Shumpeterian sense to bring about a higher level of entrepreneurial effort, work effort, and a higher level of capital accumulation financed by higher savings. Thus, taking all arguments together, from a theoretical point of view, the sign of relationship between inequality and growth is not determined.

Most of the early studies on income distribution was captured in the 1975 NES conference proceedings that devoted a whole section to various aspects of income distribution (NES, 1975). The major shortcoming of most of the earlier studies is that they suffer a great deal from the paucity of data. Table 2.1 however presents some of the earlier estimates of inequality in Nigeria using Gini ratio. In Nigeria as in many developing countries, the Gini coefficient is commonly used measurements of income inequality (Aighoikhan, 2000). One of the findings is some form of gender disparity in income distribution. At the root of gender dimension of inequality and poverty is unequal access and control of productive resources by men and women (Awoyemi, 2000). For instance, in Nigeria fewer women compared to men own land because of certain socio-economic constraints, particularly, subordination of women within marriages and

the lack of economic power to purchase land at the market price. So, the core aspect of income inequality is its relationship with economic growth and development. However, most studies have used income as the basis of welfare and further have not used other measures of inequality for comparison and sensitivity purposes.

Table 2.1: Gini Ratio From Various Studies

	1960	1963	1965	1970
Adelman and Morris	0.45			
Vielrose		0.474		
Aboyade			0.5-0.6	0.492
Vielrose				

Source: NES (1975)

Wilkinson, 1986 is of the opinion that any methods that focus only on income present narrow view of inequality as they do not accounts for disparities in health, mortality, living standards, nutrition, and social status across income groups in the society In order to fill this identified lacuna in literature this study will in addition to the traditional methods follow a new method for measuring socio-economic inequality and poverty using social indicator, namely, the Life-Quality Index (LQI), which is derived from two principal indicators the Real Gross Domestic Product (GDP) per person, and the life expectancy at birth (World Bank 2003). A close relationship between income inequality as measured by the Gini coefficient and life expectancy has been reported by Wilkinson (1986) and Rodgers (1996) suggesting that the overall population mortality increases with income inequality. Le Grand (1987) reported negative correlation between the mean age at death and the share of bottom 20% of the population in national income, implying that the higher the share of the poor in national income, the less would be the mortality differentials.

Ravallion (1996) argues that good measures of inequality are only credible if they are based on the following: (1) the distribution of real expenditure per single adult, covering all market goods and services. (2) Indicator of access to non-market goods for which meaningful process cannot be assigned, such as access to non-market education and health care. (3) Indicator of distribution within households, measures of gender disparities and child nutritional status. (4) Indicator of certain personal characteristics which entail unusual constraints on the ability of escape poverty, such as physical handicaps or impairments die to past chronic under nutrition.

Although there is widespread literature on inequality, there appears to be no consensus on how best to measure inequality Cavendish (1999) identified that measures of inequality can be broadly classified in to two which are normative measures and positive measures. Normative measures are derived by imposing restrictions on the inequality function derived from explicitly stated ethical beliefs underlying the societies' concern for inequality (Cavendish, 1999) while in the case of positive measures, the indices summarise features of statistical dispersion in income distribution, but they all fail basic ethical criteria for use as inequality indices. They have been widely used in many studies (see Kanbur, 1984) Examples of normative measures include the generalised entropy class of inequality index and the Atkinson index while examples of positive measures include relative mean deviation, coefficient of variation variance of logarithms and Gini coefficients among others.

There are several conditions that an inequality measure has to satisfy. Following Shorrocks (1980) and others, the chosen measure for decomposition should have five basic properties. They are: (1) Pigou-Dalton transfer sensitivity; (2) symmetry; (3) mean independence; (4) population homogeneity; (5) decomposability and (6) statistical testability.

Mean independence criterion means that if all incomes were doubled, the measure would not change. While *Population size independence* assumes that if the population were to change, the measure of inequality should not change, ceteris paribus. In the case of *symmetry*, if two households or individuals swap incomes, there should be no change in the measure of inequality. And the *Pigou-Dalton Transfer sensitivity* indicates that the transfer of income from rich to poor reduces measured inequality. Furthermore, inequality may be broken down by population groups or income sources or in other dimensions (*Decomposability criterion*) and finally, One should be able to test for the significance of changes in the index over time. This is less of a problem than it used to be because confidence intervals can typically be generated using bootstrap techniques (Cavendish, 1999).

The inequality measures that meet all this criteria are the general entropy class ($GE_{\alpha}(x)$) (see Cowell and Kuga, 1981 and Shorrocks, 1984) and the Atkinson measure. However, the two measures are not significantly different as the Atkinson index is simply an increasing transform of the GE_{α} measures. Hence both GE_{α} and Atkinson rank income identically (see Cowell and Kuga, 1981). In addition to the above measures, the Gini index is also a widely used measure

because it satisfy all the basic characteristics of a good measure except the decomposability criteria.

It has been identified in the literature that measures of inequality from the GE class are sensitive to changes at the lower end of the distribution for α close to zero, equally sensitive to changes across the distribution for α equal to one (which is the Theil index), and sensitive to changes at the higher end of the distribution for higher values (Cavendish 1999). In estimating inequality, there are various definitional problems. The first is on the definition of income that is used together with the reliability of income data. The reporting of income usually includes both earned and unearned income. There is also the problem of under reporting income in survey data as it has been found out that many households fail to disclose their actual income. This is one of the reasons why most recent studies have preferred expenditure data to income data (see Akita et al, 1999). It is in this line that this study will use the inequality measures that satisfy the criteria for good measures of inequality while using per capita expenditure as the welfare indicator instead of the household income.

Chapter Three

Methodology and Method of Analysis

3.1 Methodology

The aim of this study is to characterise the structure of inequality and decompose it into ‘within group’ and ‘between group’ components. In order to achieve this objective, we proceed by first identifying the unit of analysis and then determining the definition of welfare. We then identify the measures of inequality that is applied in the study.

In defining the unit of analysis, the analysis consider household as against individual members of the household. This is dictated by the data we have on our disposal. The general household survey that we use is essentially based on the household. Our unit of analysis is thus the household and the extent of inequality is that between households

As revealed by the literature, there are many indicators of welfare that can be used as the basis for measuring inequality. The most common ones are the income and the expenditure of the households. However, it has been argued that income is problematic in the sense that the reported household incomes do not always reflect the true position of household welfare. Certain studies have therefore utilised the household expenditure (see Olaniyan, 2003). In this vein, this study uses household per capita expenditure as the measure of welfare on which inequality index is computed. In addition, we decompose the inequality into between-group and the within-group components. This is important as decomposability enables one to partition inequality into sub-groups (Estudilo, 1997)

Measure of inequality

There are many inequality measures in the literature, but for our study we shall utilise the generalised entropy measures and the Gini as the measures of inequality in household expenditure distribution. While the general entropy indices satisfy all the suitable properties of a distribution index as identified in our literature review, the Gini index fail in one property of being able to be written as the sum of between- and within-group inequality components. Despite this shortcoming we have also utilise Gini index since it is sensitive to changes in the middle income range. The equation for the measures are presented as follows

Gini

$$(1/20)(1/n^2) \sum \sum |x_i - x_j|$$

Ge(0) = Mean log deviation

$$(1/n) \sum \ln (0/x_i)$$

GE(1) = Theil Entropy index

$$(1/n) \sum (x_i/0) \ln (x_i/0)$$

GE(2) = generalised Entropy index

$$(1/2)(1/n) [\sum (x_i/0)^2 - 1]$$

Where n is the number of units in the sample, x_i is the per capita expenditure of household i. The parameter α is the GE class of measures range from 0 to ∞ with 0 representing an equal distribution and higher levels representing higher levels of inequality. For this study we have used only two values (1 and 2) for α .

3.2 Decomposition of Inequality

The generalised entropy measures employed in this paper have the appealing property of additive decomposability, such that the degree of measured inequality of the distribution of an income variable can be decomposed into a component of inequality between the population groups I_b and the remaining within-group inequality I_w . The decomposition by population subgroups of the GE class is defined as:

$$\text{Inequality} = \text{within-group inequality} + \text{between-group inequality}$$

Different characteristics of the households in terms of sizes, age and sex distribution, occupational distribution, educational distribution and socio-economic status often strongly influence their food security status.

3.3 Data Requirement and Sources

This study is based on merged data from the 1996 General Household Survey (GHS) and the National consumer survey (NCS) conducted by the Federal Office of Statistics as

supplemental modules under the National Integrated Survey of Households (NISH). Both surveys had a national coverage, covering all the 30 states of the federation at the time and the federal capital territory. The sample design for the study was a two stage stratified sample design. The first stage was a cluster of housing units called Enumeration Area (EA), while the second stage was the housing unit. The sampling procedure was such that 120 Enumeration Areas (EAs) were selected and covered annually in each state. However, 10 EAs were randomly allocated to each month of the survey. In each selected EA, a sample of 10 households was covered each month for the GHS while five households were sub-sampled for the NCS. In the final analysis, the merged GHS and NCS data consists of 9,436 households spread across all the states of the federation. The data is rich in providing general information required for an examining the determinants of household poverty in rural Nigeria. Apart from the fact that it provides information on the structure and composition of households, it also provides information on the quality of housing facilities available to the households.

Chapter Four

Analysis of Results

4.1 Introduction

Inequality in this paper is conceptualised as the dispersion of the distribution of the attributes of the welfare indicators of the population, like income and consumption. As revealed in the last chapter our welfare indicator is per capita expenditure of the household. Using the decomposition equation, total inequality is decomposed into within and between group components according to several socio-economic variables taken at a time. The variables include the age, gender, and education of the head of the household. Others are the economic activity of the household head as well as the geopolitical zone that the household head belongs. The results of the inequality status as well as the decomposition analysis are presented in this chapter.

We start by presenting the context of rural inequality in Nigeria in relation to urban and national inequality. We found that households in urban areas are generally richer than those in the rural areas. While the mean per capita expenditure of households in the urban areas is N1,519.08 compared to N1,092.63 among rural households. In fact average per capita expenditure among rural households is just 87 percent of national mean expenditure which is N1,265.52. Although inequality among rural households as reflected by the Gini index of 0.51 is very high, it is lower than both urban and national inequality index. While the Gini index for the urban households is 0.56, it is 0.54 among all household both urban and rural. Generally, all inequality indices reveal that inequality is higher among urban households than rural households. The differential inequality reveals that since most of the rural households are poorer, their PCE is not too dispersed compared to what obtains among urban households. However, it is important to investigate the prevalence of inequality among rural households as this will inform policy options of alleviating poverty in the sector without worsening the inequality in the sector of the economy. Table 4.1 decomposes inequality between and within urban and rural sectors of the country and indicate that more than 97 percent of the inequality in the country is accounted for within the groups while less than 3 percent of the inequality is accounted for by the differences in urban and rural locations in the country. Since most of the inequality in the country exists within either rural or urban area, we hereby investigate the factors of inequality focusing specifically on the rural households

Inequality Decomposition by Residential Location of the Household Head

	GE(0)	GE(1)	GE(2)	Gini
Urban	0.58448	0.65298	1.42681	0.56603
Rural	0.4543	0.52937	1.32753	0.50876
Within Group Inequality				
Within Group Inequality	0.5022	0.58467	1.41748	
Percentage	97.49	97.79	99.05	
Between-group inequality				
Between Group	0.01294	0.01321	0.01354	
Percentage	2.51	2.21	0.95	

Source: Computed by the Authors

Table 4.2 presents the decile population and income shares. The table shows that the top 10 percent of the rural population earns about 34 percent of total income in rural areas. This is more than what the lowest 60 percent of the Rural Nigerians earns. The top 20 percent of the population actually earns more than 50 percent of total income in rural Nigeria. All these have implication for the prevailing inequality level in the rural areas.

Table 4.2 Decile Population and Income shares (percent) of Rural Households

Decile	Mean Income	Income share
1	320.0328	1.68
2	460.8435	2.84
3	559.1400	4.26
4	699.8928	5.42
5	823.2080	6.37
6	862.6003	6.99
7	1072.7290	9.86
8	1194.5690	10.51
9	1483.0280	18.09
10	2614.6480	33.98
	1165.4230	100.00

Source: Computed by the Authors

4.2 Decomposition Analysis

4.2.1 Decomposition by Age of Household Head in Rural Nigeria

There is a close link between the age structure and the distribution of income among the people, because the size and composition of personal incomes from work, property and transfer vary during the lifecycle, as well as for the fact that individual experiences reflect the different historical periods in which people live.

According to Karunaratne (2000), there is the hypothesis that household income usually increases gradually with age of the household head until a certain age. After reaching a peak, it starts to decline. This is however not the case for Nigeria. Rather there is U shaped relationship between the age groups and mean expenditure with two spikes at age below 25 years and age 65 years and above categories. Table 4.3 reveals that the relative mean expenditure of age groups below 25 years, 55-64 years and 65 years and above are above the average mean expenditure of all the households while the mean expenditure of other age groups are less than the average national mean expenditure. Incidentally age group 25-34 years have the lowest mean per capita expenditure. One of the suggested reasons is that economic crises of the eighties eroded purchasing powers and left many youths unemployed. Hence most of the individuals within age group 25 – 54 years were in their primes and the crisis negatively affected their income status as at the period of reference. Further, the age-group corresponds to the period when most individuals in Nigeria start their own families and start having children which further reduced the PCE. This is in contrast to age group below 25 which correspond to a period when most of the household head are single and unmarried which accounted for the higher PCE

Table 4.3 Mean Expenditure and Proportion of Households by Age of Household Head in Rural Nigeria

Hhage	Percentage share of households	Mean	Proportion of National mean Income
Below 25	2.51	2,099.92	1.9219
25 – 34	19.8	1,002.52	0.91753
35 – 44	23.32	1,068.92	0.9783
45 – 54	26.19	1,070.25	0.97952
55 – 64	14.39	1,133.84	1.03772
65 and Above	8.8	1,168.10	1.06908

Source: Computed by the Authors

Table 4.4 indicates that inequality is highest among the households whose household head's age falls within the age groups with the highest mean expenditures. The Gini index for the age group below 25 years is as high as 71 percent while the mean log deviation (GE(0)) is 98.6 percent while the age group with the lowest inequality index 45 – 54 age group with a Gini index of 48.3 percent. The high inequality index for the households headed by individuals whose age is below 25 years old can more individuals enters into the labour market as they grow older, inequality reduces and it is not surprising that by age-group 45-54, inequality has reduced.

Our decomposition analysis indicates that most of the inequality can be traced to within group component as this represents more than 99 percent of total inequality. This reveals that the disparity between the age - group is not significant in overall inequality. The import of the finding is that age is not important determinant factors in explaining inequality among the households. The bulk of the inequality still exists between households headed by individuals of the same age group.

Table 4.4 Inequality Decomposition By Age of Household Head

hage	GE(0)	GE(1)	GE(2)	Gini
Below 25	0.98558	1.39482	4.81196	0.71648
25 - 34	0.43887	0.4954	1.12657	0.49762
35 - 44	0.4783	0.59095	1.83655	0.51945
45 - 54	0.40159	0.43547	0.73437	0.483
55 - 64	0.46157	0.49212	0.83446	0.51194
65 and Above	0.4328	0.45105	0.71058	0.4982
Within Group				
Within Group	0.44977	0.52398	1.32093	
Percentage	99.00	98.98	99.50	
Between-group inequality				
Between Group	0.00453	0.00539	0.0066	
Percentage	1.00	1.02	0.50	

Source: Computed by the Authors

4.2.2 Decomposition by Education of Household Head

In most developing countries the level of education is low and Nigeria is not an exception. Table 4.5 shows that 67 per cent of the population had no education, 21 per cent had primary school, barely 9 per cent had secondary education while 3 per cent had more than

secondary school education. Human capital theory suggests positive correlation between educational level and job opportunities and capacity to earn high income. Hence, employment opportunities tend to vary between individuals depending on the level of educational attainment. This is because one's labour productivity is affected by the amount of knowledge, information and skills acquired and education can be a major determinant of inequality.

Table 4.5 Mean Expenditure and Proportion of Households by Education of Household Head

	Percentage share of households	Mean Income	Proportion of National mean Income
No education	67.25	954.28	0.87338
Primary education	20.76	1,411.84	1.29215
Secondary education	9.15	1,491.06	1.36466
Beyond secondary	2.83	2,108.79	1.93002

Source: Computed by the Authors

Table 4.5 shows a positive relationship between educational attainment of the household head and the per capita mean expenditure. We found that the higher the educational attainment of the head of the household, the higher the mean income of the household. Hence, mean income is just N954.28 for households whose head has no formal education while households whose head had education beyond secondary school had mean income of N2,108.79 which is 193 per cent of national average expenditure.

Our findings in Table 4.6 reveal that inequality in Nigeria increases with the level of educational attainment. The higher the income, the higher the higher the inequality In essence, inequality is highest within the households where the head has education beyond secondary schools and lowest in households where the head has no formal education. In fact for households with the highest education attainment, the inequality is as high as 66 percent (the highest for any of the categories that we identified) and the GE(0) index is 80.1 percent.

Decomposing this inequality, we find that inequality is also mainly a within group affairs as within group component of the inequality accounts for more than 95 percent of total inequality while the between group component accounts for more than 4 percent. This is the highest between-group inequality among all the factors of inequality that is considered in this paper. This shows that in addition to inequality within each educational level of household heads, differences

in educational level attained by the household head also account for inequality among Nigerian households. The implication is that although, household heads may have attained the same educational level, their incomes are largely determined by their employment activities which further determine the structure of earnings which cause differences in earnings and thus mean average income.

Table 4.6 Inequality Decomposition by Education of Household Head

	GE(0)	GE(1)	GE(2)	Gini
No education	0.41279	0.47934	1.23108	0.48579
Primary education	0.42607	0.43999	0.68468	0.49405
Secondary education	0.53783	0.56487	0.98773	0.54774
Beyond secondary	0.80128	1.08338	3.41079	0.65846
Within-group inequality				
Within Group	0.43204	0.50496	1.3002	
Percentage	95.10	95.39	97.94	
Between-group inequality				
Between Group	0.02227	0.02441	0.02733	
Percentage	4.90	4.61	2.06	

Source: Computed by the Authors

4.2.3 Decomposition by gender

Table 4.7 reveals that 87.4 percent of households in Nigeria are headed by male while only 12.6 percent are headed by the female. However, the mean expenditure of female-headed households are richer as their mean expenditure of N1,169.84 is higher than the mean expenditure of male-headed households with N1,086.74.

Table 4.7 Mean Expenditure and Proportion of Households by Gender of Household Head

	Percentage share of households	Mean	Proportion of National mean Income
Male	87.37	1,086.74	0.99461
Female	12.63	1,169.84	1.07067

Source: Computed by the Authors

However, inequality index is similar no matter the gender of the household head as the Gini index for both sexes is 50.8. This is further revealed in the decomposition analysis as revealed by Table 4.8 however which indicate that gender inequality is not a prominent factor in overall expenditure inequality as the between group component is less than 1 percent. This tends to support the findings of Alayande (2003) on gender inequality in Nigeria. However, the Theil indices suggest slightly higher inequality among male headed households than female headed households, but these may not be very significant. This means that elimination of gender inequality will not reduce total expenditure inequality significantly. Virtually all the inequality is accounted for either within male headed or within female headed households.

Table 4.8 Inequality Decomposition by Gender of Household Head

	GE(0)	GE(1)	GE(2)	Gini
Male	0.45321	0.53508	1.38309	0.50848
Female	0.46605	0.45737	0.69051	0.5081
Within Group	0.45412	0.52919	1.32734	
Percentage	99.96	99.96	99.99	
Between-group inequality				
Between Group	0.00018	0.00019	0.00019	
Percentage	0.04	0.04	0.01	

Source: Computed by the Authors

4.2.4 Decomposition By Household Size

It has been hypothesised that although larger households tend to have higher level of expenditure, per capita household expenditure decreases as the household size decreases (Akita, et al, 1999). This is not entirely true of the Nigerian case. The mean expenditure of the household with medium household size is the smallest (Table 4.9).

Table 4.10 presents the inequality decomposition by household size and finds that the within group component accounts for more than 99 percent of total inequality. In other words, making household size equal will not have significant bearing on the overall inequality in Nigeria. Inequality is highest within large households with the Gini index of 53 percent and lowest within the medium sized households with a Gini index of 48.7

Table 4.9 Mean Expenditure and Proportion of Households by Household Size

Household Size			
myhhsiz	Percentage share of households	Mean	Proportion of National mean Income
Small households	38.92	1,094.44	1.00166
Medium Households	41.92	1,018.88	0.93251
Large households	19.1	1,190.84	1.08989

Source: Computed by the Authors

Table 4.10 Inequality Decomposition by Household Size

myhhsiz	GE(0)	GE(1)	GE(2)	Gini
Small households	0.45281	0.48991	0.98482	0.50487
Medium Households	0.41413	0.48033	1.19902	0.48706
Large households	0.50209	0.59835	1.5841	0.53385
Within Group				
Within Group	0.45186	0.52691	1.32506	
Percentage	99.46	99.54	99.81	
Between-group inequality				
Between Group	0.00245	0.00246	0.00248	
Percentage	0.54	0.46	0.19	

Source: Computed by the Authors

4.2.5 Decomposition by Type of Activity of the Household Head

It should be of interest to identify the degree to which differences in the type of primary occupation contribute to overall income inequality and the role it has played in the widening of income disparity. Table 4.11 shows that farming is still the main stay of employment in Nigeria. Eighty-one per cent of households in rural areas engage in farming activities. It has been argued that the potential role of non-farm sector as a source of income has not been optimally utilized only 24 per cent of the earned income is accounted for by non-farm sector (see Awoyemi, 2000). Our results reveal that mean expenditure is higher for households engaged in non-farming activities than for those engaged in farming activities. The decomposition of the Generalised entropy measures are illustrated in Table 4.12. The Table reveals that within group component of

inequality accounts for about 99 per cent of total inequality in Nigeria. Inequality is however higher within households engaging in non-agriculture activities.

Table 4.11 Mean Expenditure and Proportion of Households by Economic Activity of Household Head

	Percentage share of households	Mean	Proportion of National mean Income
Non Farming	19.13	1,431.04	1.30972
farming	80.87	1,043.89	0.95539

Source: Computed by the Authors

Table 4.12 Inequality Decomposition by Economic Activity of Household Head
Inequality Decomposition by Economic Activity of the Household Head

	GE(0)	GE(1)	GE(2)	Gini
Non Farming	0.49069	0.49783	0.85386	0.52025
farming	0.44229	0.52796	1.42409	0.50267
Within Group	0.44838	0.52299	1.32063	
Percentage	98.70	98.79	99.48	
Between-group inequality				
Between Group	0.00592	0.00638	0.00691	
Percentage	1.30	1.21	0.52	

Source: Computed by the Authors

4.2.6 Decomposition By Geopolitical Zones

Nigeria is a federal government with three tiers of governance at the national, state and the local government levels. There are 36 states and 778 local governments in the country. However, for geographical and tribal conveniences, the nation is often subdivided into six geopolitical zones. We therefore assess the impact of geopolitical zones on aggregate living standards, as well as welfare differences between households. We find that location and climate could have large effects on income levels and income distribution, through their effects on transport costs, disease burdens, and agricultural productivity, among other channels.

Table 4.13 Mean Expenditure and Proportion of Households by Geopolitical Zone of Household Head

	Percentage share of households	Mean	Proportion of National mean Income
South west	7.08	1,281.48	1.17284
South east	14.79	1,513.26	1.38498
South south	15.47	1,257.53	1.15093
North east	19.37	851.06	0.77891
North west	21.96	890.79	0.81528
North Central	21.33	1,302.43	1.19202

Source: Computed by the Authors

Table 4.13 shows that South East zone has the highest mean income of N1513 while North east zone accounts for the least mean income of N851.06. However, in spite of differential value of average income across these zones, the inequality index is very high in all the geopolitical zones with the southwest being the zone with the highest level of inequality and the northwest with the lowest level of inequality (Table 4.14). The within-group component of inequality accounts for 95 percent while the between-group component accounts for 5 percent of total inequality in Nigeria. This means that some policies to reduce inter-geopolitical zones might reduce some inequality in the country.

Table 4.14 Inequality Decomposition by Geopolitical Zone of Household Head

polzone	GE(0)	GE(1)	GE(2)	Gini
South west	0.48632	0.52026	0.95969	0.52099
South east	0.41866	0.42958	0.66801	0.48905
South south	0.44613	0.44709	0.69141	0.5004
North east	0.44261	0.5068	1.1194	0.50353
North west	0.39861	0.5566	2.41266	0.47643
North Central	0.4823	0.51171	0.88455	0.52071
Within Group				
Within Group	0.42923	0.50392	1.30141	
Percentage	94.48	95.19	98.03	
Between-group inequality				
Between Group	0.02507	0.02545	0.02612	
Percentage	5.52	4.81	1.97	

Source: Computed by the Authors

Chapter Five

Conclusion

This study has attempted to examine the issue of inequality in expenditure among rural households in Nigeria. This was done utilising the generalised entropy measures and the Gini coefficient. The results of our analysis indicate that factors such as age, gender, and education level of the household head are important factors in explaining inequality profile in the country. We however found that most of the inequality exists within group and not much of differences in groups explain appreciable levels of inequality in Nigeria except for educational attainment of household head and the geopolitical zones that the household belong. This thus suggests policies that will increase educational opportunity for all citizens as well as policies to reduce inter geopolitical zone access to opportunities.

Beyond this, an encompassing policy framework would be necessary to reduce national inequality. Some of the policies might include the following

- Redistributing wealth
- Land Reforms – in large rural areas, productivity and equality are both served by land reforms
- Human capital education plays a crucial policy role in greater distributional equality. Also is nutrition, health and other social investments
- Social return is very high Girls' education is too important to be left alone especially for its effects on fertility, nutrition and family health. Education is very important for those at the bottom of the income distribution

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