

# Labour Market Participation and Income Distribution of the Aged in Nigeria

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## *Abstract*

*This paper examines labour market participation and distribution of income of the elderly in Nigeria, with emphasis on the changes in the distribution of household income due to demographic change. The paper utilized the logit regression analysis and observed that participation in the labour market among elderly women is higher than that of elderly men in all educational levels; the labour market participation level among farmers decreases with old age illness and education. The outcome of the decomposition method on the distribution of income in the labour market analysis of the elderly shows that inequality is higher among elderly males involved in income earning activities compared to the elderly females. On the percentage share of the distribution of the labour market income, it is found that the income of elderly males is higher than that of elderly females in all income types except for self-employment.*

**Key words:** labour participation, social security, distribution of income, inequality, elderly

## **Introduction**

Much is not known about the labour market participation and income situation of the aged<sup>1</sup> in Nigeria. However, anecdotal evidence suggests that the income situation and welfare of elderly persons in Nigeria are deplorable. Data from the National Population Commission (NPC, 2006) shows that more than 2 million people, representing 72 per cent of the aged population, lived in the rural areas and the greatest contribution to agricultural production is by the elderly population. According to Ajomale (2004), virtually all the people in the rural area lack access to social and economic amenities. Given that the rate of labour force participation in Nigeria is higher among elderly males than females, a significant proportion of them continue to participate in the formal wage sector well beyond their retirement time (NPC, 2004).

In a study on intergenerational support and old age in Africa, Aboderin (2006) asserted that social security policies for aged are yet to be formulated in Nigeria and this lack of social security system for older people increases poverty and inequality. It has been suggested that the expectation of, and a need for, support in old age are important contributions to high fertility in West

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<sup>1</sup> Aged used here is refers to persons aged 65 years and above.

Africa (Caldwell, 1976; Isiugo-Abanihe, 1994). Parents are expected to “invest” in their children with the hope that such investment will yield dividends in old age. Hence, disabled children are viewed as “poor investment” and are often neglected by their parents (Bamisaie and Di Domenico, 1983); childlessness in old age has been linked to isolation, ill health and poverty (Peil, 1995). These studies are in agreement with findings from studies conducted in various parts of Africa that children still remained the bulwark of informal social welfare support to elders. However, other studies have revealed that modernization and globalization may have weakened children’s commitment to caring for older parents (Apt, 1994; Adamchak, 1991; Cattell, 1990; Togonu, 1987; 1989 and Peil, 1991; 1992).

Increasingly, the care of older family members is falling on fewer children in Africa and the impact is felt most by those with the least resources. Poverty is a critical risk factor for older persons in developing countries in general and widespread poverty within communities contributes to the stress felt by families (Gorman, 1997). Apart from the level of education and place of residence as factors that influence the distribution of income of the elderly persons, a social security policy for the aged is another factor that could influence the distributional pattern of income. An analysis of the various forces that impact on the distribution of income for the aged in Nigeria is long overdue. Therefore, this study aims at filling this gap in the context of the economic development literature of the aged. The paper examined various forces that impact on the distribution of household income of the elderly and the changes in the pattern of earning in the labour market; changes in occupational choices of the aged and other sources of earnings.

### **Ageing as a Policy Issue in Nigeria**

Recently, ageing has become a policy issue receiving some attention by government and other stakeholders in Nigeria including other developing countries. United Nations (2010) report on current status of the social situation of older people asserted that the issue of ageing represents economic and social development strategy. While the population of the aged in developed countries evolved gradually as a result of an earlier reduction of birth rate and improving welfare for the majority of the population, developing countries including Nigeria, over the next four decades is expected to experience a rapid increase in the number of aged people (Ageing in the 21<sup>st</sup> Century Report, 2012). Nigeria, like other African countries, sees this emerging issue as a serious future challenge. The inability of government to cope with the regular payment of pensions to the retired workforce, inadequate social and health services to cater for the needs of an ageing population, as well as a predominantly rural agrarian population all pose new threats to sustainable development in Nigeria. Older people’s lives are characterized by growing inadequacies in customary

family supports, social exclusion and non-existent social security, all of which render them vulnerable to poverty, inequality and diseases.

An increase in the numbers of older people inevitably has brought an increase in the range and intensity of their problems and needs. Older persons in Nigeria suffer a lot of hardship in an increasingly hostile, competitive and intolerant society. Older people constitute the poorest group in Nigerian society. Unlike children, youth and women who received high profile in the Millennium Development Goals (MDGs) agenda, for instance, the elderly tend not to be considered as a specific group in terms of poverty reduction policies. However, halving the rate of poverty and hunger by 2015 without seriously considering older people in the MDGs program is a serious problem. Nigeria currently has the highest older people's population in Africa (UN DESA, 2011). With the largest population in Africa and the seventh in the world, it is estimated that by the year 2025 the population of Nigerians aged 60 and above will constitute 6 per cent of the entire population (see Table 1).

**Table 1: Percentage Projected Population of Elderly in Africa, West Africa and Nigeria, 2005 – 2050**

Population 60 years plus				
	2005	2012	2025	2050
Africa	5.2	5.6	6.4	9.8
West Africa	4.7	5.0	5.5	7.7
Nigeria	4.9	5.3	6.0	7.4

**Source:** UN Population Division (2005) and UNFPA Report on the ageing in the 21<sup>st</sup> century

As it can be seen from the above table, there is the potential for increase in growth rate for the aged population. This will have a significant change in the age structure of the Nigerian population. Findings from the National Census conducted in 2006 confirmed an increase in the proportion of those aged 60 years and above. In the coming years, the ageing population is expected to increase in numbers and life expectancy rate will gradually increase with significant social and economic impacts to individual and households. Therefore, ageing will constitute an increasing demographic challenge to Nigeria for which policy measures are essential.

#### **Methodology for Labour Market Analysis for the Aged**

This study analyses the labour market outcomes resulting from demographic change such as age, number of children per household, number of elderly per household and the educational attainment of household head. These different forms of demographic change contribute significantly to labour market outcomes of the elderly.

In this study, we started by designing an income generation model describing the structure of the labour market income. We adopted the method of Bourguignon *et al.* (2002) and base the decomposition of wage differences on the changes in the socio-demographic structure of the Nigerian population for the elderly. Therefore, this methodological section provides information regarding the impact of demographic changes on labour force participation and income inequality for older people.

The wage equation has a long tradition in labour economics and has provided a framework within which the relationship between earnings from the labour market and demographic issues can be analyzed. In this study, the regression based approach was used, which allows the contribution of the regressor to the level of earnings to be isolated and quantified. The approach is relatively simple to implement and complications do not arise as the number of explanatory variables included in the wage equation increases. Studies that have applied this method in the field of labour economics are found in the work of O'Donoghue *et al.* (2010). Earnings are a function of education, experience and other demographic characteristics such as gender, marital status and number of children. This functional form addresses determinants of earnings differential across gender and location. The standard Mincer equation assumes that wage determining function of the following form:

$$\ln(Y_{ij}) = \alpha + X_i \beta_j + \varepsilon_{ij} \quad (1)$$

Where  $\ln(Y_{ij})$  is the natural log of wages for individual  $i$  in sector  $j$ ,  $X_i$  is a function of individual demographic characteristics, occupation and industry and  $\varepsilon_{ij}$  is a disturbance term. Here the Mincer equation is adopted to estimate the impact of demographic characteristics on earnings. However, demographics may also impact on the decision to participate in the labour market.

#### ***Estimating Labour Market Participation***

A logit model is specified for labour market participation. We define the logit model in this study as:

$$\text{LMP}_i = \alpha + \beta X_i + \varepsilon_i \quad (2)$$

The dependent variable  $\text{LMP}_i$  is a latent variable capturing the propensity to work in the labour market. If this latent variable is positive, the individual works in the labour market, otherwise they do not. The vector  $X_i$  is a set of standard exogenous variables that influence labour market participation such as age, educational attainment, marital status and location of respondent whether rural or urban. The model is used to predict the probability of each individual

(minimum 65 years of age) participates in the labour market. Separate logit estimation is used for males and females.

The decomposition aspect of this paper we employed the Half Squared Coefficient (commonly referred to as the Generalised Entropy Class of inequality measures). This places more weight on the income trend of high income households. One of the main axioms which inequality measures are required to meet is that of decomposability. This requires overall inequality to be related consistently to constituent parts of the distribution, such as population sub-groups. For example, if inequality is seen to rise amongst each sub-group of the population then it is expected that overall inequality will also increase.

### **Data and Data Transformation**

The primary source of data used in this study is the 2004 National Living Standard Survey, collected by the National Bureau of Statistics (NBS)<sup>2</sup> Nigeria. It collects information on incomes, labour market status and demographic information, with 19,158 responding households and 92,610 individuals. The sample design used is two-stage stratified sampling. At the first stage, clusters of 120 housing units from each state and the Federal Capital Territory (FCT, Abuja) called Enumeration Areas (EAs) were randomly selected. The second stage involved random selection of five housing units from the selected EAs. About 4,017 recorded their incomes, thereby generating data for this study of 15,141 households from 36 states and the FCT.

According to NBS this sample size is sufficient to produce estimates of key variables (at national and regional level) at the 95 per cent confidence level with 5 to 7 per cent margin of error. The concept of income used in this study includes income earned by the elderly age 65 years and above both in cash and in-kind. The income aspect is solely based on the determination of earnings and was measured on annual basis of total income per capita in the survey as constructed from the disaggregated income questionnaire. The inclusion of weights is to ensure that the sample size accurately represent the actual population. We derived five sources of income from the data. These are employee earnings from wage work, non-farm self-employment earnings, farm earnings, capital earnings derived from asset disposal/rental, and benefits derived from earnings from old age pension. The economic status of the individual is established, that is, whether the individual is employed, self-employed or a farmer. These questions can be answered by identifying whether or not the individual is a recipient of earnings from employment, self-employment or farming. The occupation and industry for each individual is clearly given in the data and does not require any transformation.

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<sup>2</sup> For detailed information about the NLSS, go to [www.nigerianstat.gov.ng/NLSS](http://www.nigerianstat.gov.ng/NLSS) 2004 dataset.

In terms of the transforming the raw data, we create relationships between individuals within the households, correcting Identification Numbers (ID), for instance individuals with inconsistent identity, that is, individuals with the same ID but different years of birth or sex, creating the Family Unique Identity (FUID) as our unit of analysis and adjusting inconsistencies in the labour market states or filling some missing information for example on incomes and the weeks worked by the elders. We further transform the education variable into four broad levels of education, that is, primary, lower secondary, upper secondary and university. The age variable we keep for those who are 65 to 100 years old. The marital status takes the form of single, monogamous marriage, polygamous marriage, separated, divorce, widow and informal union. We combine monogamous and polygamous marriage variables to represent all those individuals who are currently married.

### ***Descriptive Statistics***

The following Tables 2 and 3 describe the average age of household head and number of persons in each household group. These are likely going to offer some clues as to the likely source of changes in the income distribution among the household heads.

**Table 2: Average Age of Household Head and Number of persons in each Household group**

Household group	Number of persons	Age
Married old persons with more than 2 other adults without children	4	80
Unmarried old person without children	2	72
Married old couples with children	4	71
Total	2	72

**Source:** estimated by the authors

For household group with unmarried old persons with no children and married old couples with children there appears to be no significant differences in the average age of the household head. However, the average age of the household head with married couples with other adults living in the house with no children appears to be higher

**Table 3: Percentage of all older persons aged 65 years and above in-work, employed, self-employed, farmer, capital and benefit recipients by household group**

Household group	In-work	Employed	Self-employed	Farmer	Capital	Benefits
Married old persons with more than 2 other adults without children	48.7	0.0	91.8		4.0	4.2
Unmarried old person without children	57.9	0.0	88.2	0.0	4.6	7.2
Married old couples with children	56.9	0.0	89.2	0.0	10.8	0.0
Total	57.0	0.0	88.5	0.0	4.7	6.8

**Source:** estimated by the authors

In Table 3, the proportion of older persons in-work account for 57 per cent. The variable in-work is constructed from adding the proportion employed, self-employed and farming. Majority of the proportion of older persons from 65 years and above are mostly self-employed. This suggests that these older persons would have retired from employed work and engaging themselves in other things like creating jobs for themselves. While the proportion of older persons earning capital income accounts for 4.7 per cent, more importantly, unmarried household group with no children is the highest recipient of benefit income. This implies that they get benefits from their relations and friends. This finding is in agreement with the findings of Help Age International (2003) to the effect that those older persons who have not worked in the formal sector or do not receive pension rely on the informal arrangements and their own/family resources.

### **Regression Results: Occupational Choice and Labour Market Income of the Elderly**

The model is estimated separately for both males and females aged 65 years and above who participated in the labour market. For those who are working (in-work), employed, self-employed, farmers, and recipients of capital and benefits income were estimated on demographic characteristics. Table 4 shows the results of the logit method we used for the estimation. Dummy variables that capture the maximum educational level achieved were included. The omitted category is no education. A marital status dummy variable is also included in the regression. The dummy variable takes the value 1 when the individual obtained university or upper secondary school certificate.

Following Bourguignon *et al.* (2002), our analysis assumed that labour market participation choices were made within the household as mentioned earlier. The coefficients of most educational level are positive, significant, and

decreasing with age.<sup>3</sup> The most striking features emerging from the estimations is the higher participation rate of females than males in all educational levels as shown in Table 4. These variables are all statistically significant at 1 per cent level. In addition, participation rate decreases with education, illness and marriage for the female. For self-employed increases with education and decreases with experience and rural areas; while the Farmers' participation in the labour market decreases with illness and education except for marriage and rural location. Capital and Benefit recipients' increase with education and decreases with rural centers, the positive relationship associated with working and illness cannot be taken seriously as far as the issue for the income distribution is concerned because the duration of illness and inactivity of the elderly persons are not part of the estimation. This might affect earnings either positively or negatively.

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<sup>3</sup> We refer to returns to education as the differences in educational level achieved