

# Impact of Employment Status and Nature of Employment of Household Head on Household Poverty Incidence in Nigeria

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## Abstract

Unemployment and poverty are major indicators of underdevelopment. Unfortunately, despite the enormous material and potential human resources in Nigeria, the country has over the years been plagued by the two problems.. This study employs binary logistic regression technique in analysing the impact of employment status and nature of employment of household head on household poverty incidence in Nigeria. Various occupational groups and occupational status of household head are added to major correlates of poverty such as household size, age of household head, sex of household head, region and sector of residence, access to regular remittances, access to credit, ownership of housing unit and educational level of household head to form the regressors while the poverty status of household is the regressand. The analysis is based on the 2004 Nigeria Living Standard Survey (NLSS) conducted by the National Bureau of Statistics. The results of the study show that employment status and nature of employment of household head in general have significant impact on household poverty incidence. Thus the government should put adequate measures in place to provide sufficient employment opportunities so as to pave the way for rapid and sustainable development in the country. The study further shows that some types of employment do not have significant impact on household poverty incidence such as employment in agriculture/forestry, production, transport, manufacturing and processing. The government should take adequate steps to make all occupations lucrative and contribute significantly towards poverty reduction in Nigeria.

**Key words:** Employment Status, Poverty Incidence, Logit Model, Nigeria.

## INTRODUCTION

Unemployment and poverty are two major indicators of underdevelopment (Seers, 1972; Todaro & Smith, 2003). Many developing countries are plagued by high incidences of unemployment and poverty. Indeed, in many developing countries these two socio-economic problems have become highly pronounced and apparently defying various measures put in place to check them. As observed by Agenor(2004), in many developing countries reducing unemployment and alleviating poverty are major policy goals yet significant progress on both fronts has remained elusive.

The problems of unemployment and poverty require great attention for they are among the major causes of many vices in the society. In fact, unemployment and poverty have been linked to various undesirable and illicit activities such as thuggery, prostitution, arson, drug and human trafficking, various forms of robbery, suicide, rape, vandalism, drug addiction and assassination. Even religious fundamentalism and fanaticism which often lead to disastrous religious riots in many parts of the world have arguably been linked to lack of gainful

employment and poverty (Ozughalu, 2010). Both unemployment and poverty lead to degradation of human dignity. Those who are unemployed and poor usually suffer from social exclusion. Prolonged unemployment and poverty can lead to depression and frustration. Unemployment represents a tremendous waste of a nation's manpower resources and it leads to welfare loss in terms of lower output which in turn leads to lower income and well-being (Obadan & Odusola, 2000). Poverty, on the other hand, is associated with detestable quality of life and socio-economic malfunctioning. Those that are poor have low self-esteem and they frequently feel alienated socio-economically.

A major key to socio-economic progress is employment generation. Thus responsible governments all over the world vigorously strive for the attainment of full employment as a major macroeconomic goal. Development economists have recognised that employment is a principal link between economic growth and poverty reduction as well as reduction in income/wealth inequality. Employment generation can pave the way for rapid economic growth. On the other hand, inclusive economic growth that is pro-poor generates employment. When economic growth generates new or improved employment opportunities - particularly for low and middle-income groups/households - household incomes will increase across the board, all other things being equal. And employment generation provides a direct channel for distributing the benefits of economic growth broadly throughout the population (ILO & UNDP, 2004). It is evident from the experiences of many countries<sup>1</sup> in the world that the greater the employment focus, the more effective economic growth becomes in reducing or obliterating poverty and in paving the way for sustainable development (ILO & UNDP, 2004).

It is regrettable to observe at this point that global unemployment rate and poverty incidence have been significant over the years (Jahan, 2005; World Bank, 2009). Sub-Saharan Africa is apparently one of the worst hit regions with regard to unemployment and poverty (World Bank, 2009; ILO, 2012). Even the rapid and unprecedented wave of globalization<sup>2</sup> - which is said to have enriched the world economically, culturally and scientifically - has not sufficed in significantly reducing the unemployment rate and poverty incidence in Sub-Saharan Africa.

In Nigeria, the problems of unemployment and poverty are not new. The problems have plagued the country over the years and they have become highly pronounced in recent times (Obadan & Odusola, 2000; NBS 2005; World Bank, 2009; CBN, 2010, NBS, 2012). There is paucity of data with regard to unemployment and poverty in Nigeria. However careful observation would reveal that since the 1980s both problems have become highly pronounced. It is worthwhile to recall, at this juncture, that with the collapse of the world oil market in the early 1980s, the Nigerian economy<sup>3</sup> started to show great signs of distress; these signs were followed by serious macroeconomic problems which evidently included significant unemployment and high incidence of poverty. The problems initially led to the introduction of a macroeconomic stabilisation policy package and later to various rounds of budget-lightening austerity measures between 1981 and 1985; despite these measures, the problems apparently remained unabated (Ozughalu, 2006). Thus in 1986, the Structural Adjustment Programme (SAP) was launched in Nigeria. SAP was the first major economic reform programme in Nigeria and it operated till about 1993. During the SAP and post-SAP eras, many steps were taken to optimally check the problems of unemployment and poverty in the country but these steps did not produce the desired results (Ogwumike, 1998). Since the enthronement of democratic governance in 1999, various efforts have been made to solve the problems of unemployment and poverty in Nigeria through various institutions, programmes and strategies such as the

<sup>1</sup> These countries include Indonesia, Vietnam, Chile, Bangladesh and South Korea.

<sup>2</sup> This refers to the growing economic interdependence of countries worldwide through the increasing volume and variety of cross-border transactions in goods and services and international capital flows, and also through the more rapid and widespread diffusion of technology [see Iyoha, M. (2006). Globalization and Nigerian Education in the 21<sup>st</sup> Century: Issues and Insights. *NESG Economic Indicators* 12(3), 37-42].

<sup>3</sup> Since the oil boom era of the 1970s, the Nigerian economy has depended almost entirely on the crude oil sector. Thus events in the world oil market - negative or positive - have always affected Nigeria tremendously.

National Poverty Eradication Programme (NAPEP), National Directorate of Employment (NDE) and National Economic Empowerment and Development Strategy 1 and 2 (NEEDS I & II). Unfortunately all the efforts made over the years towards effectively addressing the problems of unemployment and poverty in Nigeria have apparently not produced satisfactory results. This therefore calls for a rejuvenated and more concerted and pragmatic effort that will effectively and efficiently tackle the problems and thus produce the desired results with regard to significantly reducing the problems.

The likely effect of unemployment on poverty incidence is well captured in the literature on Development and Welfare Economics. This study intends to make a modest contribution to the literature by empirically analysing the impact of employment status and nature of employment of household head on household poverty incidence in Nigeria based on the Nigeria Living Standard Survey (NLSS) of 2004.

The rest of the paper is organised as follows. Section 2 deals with some conceptual issues while Section 3 deals with some measurement issues on unemployment and poverty. Section 4 contains theoretical issues and empirical literature while Section 5 contains econometric analysis of the impact of employment status and nature of employment of household head on household poverty incidence in Nigeria. And Section 6 contains recommendations and conclusion.

## **2. CONCEPTUAL ISSUES**

### **2.1. Labour Force**

One of the most problematic concepts in Economics is the concept of labour force. Some experts have defined labour force simply as the sum of those employed and those unemployed<sup>4</sup> (Blanchard, 2009; Sloman & Wride, 2009). The labour force is generally conceptualised as all persons within the working age (Okigbo, 1986). It usually excludes certain categories of people such as young persons below a prescribed age and old persons above a certain age, full-time house wives, physically and mentally handicapped persons, students and persons in full-time training and those who for any reason are not interested in working at the prevailing rate of pay (Okigbo, 1986). The working age varies from country to country thus the definition of the labour force may also be said to vary from country to country.

### **2.2. Full-Employment, Unemployment and Underemployment**

Full employment of factors of production refers to the situation when the demand for all factors is equal to the supply of them. However, full employment of labour appears to be the most popular in the analysis of employment; this is largely due to the fact that labour activates and uses all the non-human factors of production. Full employment of labour is when the demand for labour is equal to the supply of labour (Agba, 1994; Jhingan, 2001). It is a situation where there is neither under-utilisation nor over-utilisation of labour. Put differently, full employment of labour is when all persons who are legally qualified to work and who are willing and able to work at the prevailing wage rate get jobs. In practical terms, when unemployment rate in a country is not up to or not more than a given low rate, such as below or not more than 4%, such a country may be said to be in full labour employment (Dernburg & McDougall, 1980).

Coming to unemployment, there is apparently no precise definition of the phenomenon as observed by Ajani & Okonta (1986). The literature is replete with multifarious conceptualisations of the phenomenon. It is instructive to state, however, that though unemployment could be used to relate to all factors of production, it is commonly used in relation to labour. Some experts have defined the term as a state of worklessness (Falae, 1971). But this definition is too broad/general to be satisfactory because some categories<sup>5</sup> of people who are without work should not actually be regarded as unemployed in any meaningful sense. Unemployment has also

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<sup>4</sup> This is based on its definition in Economics.

<sup>5</sup> These include those who cannot be legitimately regarded as either working or available for work.

been defined in some circles as a state in which people who can work are without jobs and are seeking for jobs for pay or for profit (Adebayo, 1999). This definition brings out the problem of measurement especially if one is interested in knowing the average rate of unemployment in the economy over a period of time (Adebayo, 1999). Unemployment has alternatively been defined as a situation where a part of the economically active population is without job but is available and seeking for job (Obadan & Odusola (2000). Put differently, unemployment is a situation where people who are willing and able to work at the prevailing wage rate/condition in the labour market cannot find jobs (Dwivedi, 2001). The taxonomy of unemployment includes a condition of “being out of job”, an activity of “searching for job”, an attitude of “desiring a job under certain condition” and “the need for a job” (Okigbo, 1986). In general, the problems associated with the conceptualisation of unemployment include determination of those to be legitimately included as unemployed and the determination of the minimum period of unemployment or search for employment that will qualify a person to be classified as unemployed.

With regard to underemployment, it may be defined as a situation where people who want full-time work are only able to find part-time work (Ohiorhenuan, 1986; Sloman & Wride, 2009). As observed by Okojie (1986), underemployment is a situation when people’s employment is inadequate in relation to specified norms of employment. Underemployment could be visible or invisible. Visible underemployment is when people work for less than normal duration and would accept additional work. On the other hand, invisible underemployment is manifested in low incomes, underutilisation of skills and low productivity (Okojie, 1986). It is important to state here that it is extremely difficult to adequately capture the extent of underemployment in a country.

### **2.3. Poverty**

As observed by Chaudhry, Malik & Hassan (2009), poverty is a complex phenomenon based on a network of interlocking economic, social, political, and demographic factors. Thus a universally acceptable definition of the phenomenon has been elusive. However, the commonest (and perhaps the most widely used) practice is to conceptualise poverty in absolute terms. Absolute poverty refers to gross insufficiency of income, consumption or expenditure, among other things (World Bank, 1990, Chaudhry, Malik & Hassan, 2009, Ozughalu, 2010). In general, absolute poverty refers to lack of adequate resources to afford a commodity basket<sup>6</sup> that guarantees the attainment/maintenance of an objective minimum standard of living (Olowononi, 1997). The above conceptualisation has some problems. It is very difficult to determine what to include in the so-called objective minimum. It is also very difficult to set minimum standards for basic necessities such as clothing and transportation which depend largely on individual tastes/preferences, cultural norms and prevailing socio-economic conditions within a given society (Odusola, 1997, Afonja & Ogwumike, 2003). Absolute poverty has also been defined in relation to a chosen maximum proportion of income that a family spends on certain subsistence goods and services (Afonja & Ogwumike, 2003). Thus, in line with Engel’s law<sup>7</sup>, any household or individual that spends more than a specified maximum share of its/his/her income on basic needs such as food, housing and healthcare is considered to be poor (Odusola, 1997; Afonja & Ogwumike, 2003). This approach is highly subjective and involves a high degree of arbitrariness.

Despite the problems associated with absolute poverty conceptualisation it is noteworthy that conceptualising poverty in absolute terms is most appropriate for the formulation and implementation of policies/programmes that are aimed at reducing the degree of deprivation/immiseration and the number of people who suffer from such.

Other major conceptualisations of poverty include relative poverty, material poverty and subjective poverty. However, none of these is as celebrated as absolute poverty conceptualisation and it is apparent that absolute poverty conceptualisation provides the most efficient framework for estimating and analysing poverty. It is

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<sup>6</sup> This refers to collection of goods and services.

<sup>7</sup> This states that the proportion of income spent on food or on other basic needs declines as income rises.

instructive to state here that no matter how poverty is conceptualised the phenomenon implies some degree of deprivation.

### 3. MEASUREMENT ISSUES ON UNEMPLOYMENT AND POVERTY

#### 3.1. Measurement of Issues on Unemployment

In the measurement of unemployment it is customary to begin by identifying the segment of the population that should be designated as the labour force. The determination of the labour force usually involves (implicitly) the determination of those to be classified as unemployed. For one to determine those that should be classified as unemployed one has to face the issue of determining the minimum period of unemployment or search for employment that will qualify a person to be classified as unemployed. Also, one has to contend with the issue of determining those that meet other criteria stipulated by the state that qualify people to be legitimately classified as unemployed. Once the foregoing issues have been adequately addressed the next thing to do is usually to measure the rate of unemployment. Unemployment rate is usually given as the ratio of total number of unemployed people to the number of people in the labour force (Blanchard, 2009). It is important to reiterate that is very difficult to determine all those that are unemployed<sup>8</sup>; thus it is not an easy task to measure the rate of unemployment.

#### 3.2. Measurement Issues on Poverty

In the analysis of poverty it is customary to start by choosing an indicator of welfare. This may be based on income or consumption or expenditure (Ravallion, 1996). However consumption or expenditure is usually preferred to income because of its various advantages. After selecting an indicator of welfare the next thing to do is to set a cut-off point called the poverty line. This is a measure of minimum acceptable standard of living or welfare and it separates the poor from the non-poor (Anyanwu, 1997). The construction of a poverty line is relatively subjective and depends to a large extent on individual researchers' preferences and disposition. However, the literature reveals that there are basically four approaches used in setting poverty lines namely: Direct Calorie Intake (DCI) method, Food-Energy-Intake (FEI) approach, Cost-of-Basic-Needs (CBN) approach and Arbitrary-Choice-of-Index (ACI) method (Onah, 1996; Ravallion, 1998; Asra & Santos-Francisco, 2001). The ACI approach is more subjective and less scientific than the other three approaches. It is instructive to state here that sometimes, all the relevant data for constructing a highly scientific and robust poverty line may not be available and even when such data are available, a researcher may wish to avoid the methodological issues/complexities associated with designing such a poverty line. Under these circumstances the researcher may adopt the ACI approach (Onah, 1996). The ACI is most useful in setting poverty lines that can be used for international comparisons such as the US\$1<sup>9</sup> and US\$2 a day poverty lines in purchasing power parity terms. Apart from the international poverty lines (US \$1 and US\$2 a day in purchasing power parity terms) other popular arbitrarily determined poverty lines include one-third and two-thirds of mean [per capita] household income or expenditure. The National Bureau of Statistics (formerly called Federal Office of Statistics) has consistently reported poverty levels based on two-thirds of mean per capita household expenditure as the official poverty levels for Nigeria.

After a poverty line has been set the next line of action will be to measure poverty. There are some axioms that a good and desirable poverty measure must satisfy. These include monotonicity<sup>10</sup>, transfer<sup>11</sup> and focus<sup>12</sup>

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<sup>8</sup> For instance, unemployment is usually based on those that register with the relevant labour office but many unemployed people do not register with such labour office.

<sup>9</sup> This has recently been adjusted to US \$1.25 a day in purchasing power parity terms.

<sup>10</sup> This states that, given other things, a reduction in income (or consumption/expenditure) of a person that is below the poverty line must increase the poverty measure.

axioms (Sen, 1976; Anyanwu, 1997). The literature is replete with many poverty measures. However, four of them are commonly used; they are the headcount ratio, the poverty gap index, the Sen index and the Foster-Greer-Thorbecke (FGT) index (Srinivasan, 2000). The headcount ratio (or poverty incidence) is the simplest and commonest poverty measure. It is simply the ratio of the number of poor individuals/households to the total number of individuals/households in the population; that is

$$H = P_0 = \frac{r_p}{n} \quad \text{----- (1)}$$

where  $H$  and  $P_0$  represent headcount ratio and poverty incidence respectively;  $r_p$  is the number of people/households below the poverty line; and  $n$  is the number of people/households in the population.

The poverty gap ratio or the income gap or (shortfall) ratio is the difference between the poverty line and the mean income of the poor, expressed as a ratio of the poverty line; the result is the average depth of poverty or the poor's degree of immiseration (Anyanwu, 1997). Thus the average income shortfall ( $I$ ) measures the amount of money it would take to raise the income (or consumption/expenditure) of the average poor person/household up to the poverty line. If  $y_a$  is the average income (or consumption/expenditure) of the poor and  $z$  is the poverty line then a measure of the depth of poverty, the income gap ratio ( $I$ ) is given as :

$$I = \frac{z - y_a}{z} \quad \text{----- (2)}$$

If we take the product of  $H$  and  $I$  we would incorporate both the number of the poor and the depth of their poverty. If we call this product  $P_1$ , then  $P_1$  index will be given as follows:

$$P_1 = HI = \frac{r_p}{n} \left[ \frac{z - y_a}{z} \right] \quad \text{----- (3)}$$

The Sen Index (SI) reflects not only the number of the poor but also the degree of immiseration and the distribution of income/wealth among the poor. The index is able to achieve the above by incorporating the headcount ratio, the income gap ratio and the Gini coefficient. The index is given as follows (Sen, 1976):

$$SI = H \left[ I_p + (1 - I_p) G_p \right] \quad \text{----- (4)}$$

where  $I_p = \left[ \sum_{i=1}^{r_p} \frac{z - y_{ai}}{r_{pz}} \right] \quad \text{----- (5)}$

where  $I_p$  is the average income (or consumption/expenditure) shortfall as a percentage of the poverty line;  $y_{ai}$  is the income (or consumption/expenditure) of the  $i$ th poor household/individual;  $z$  is the poverty line,  $r_{pz}$  is the number of households/individuals with income (or consumptions/expenditures) less than  $z$  ;

$H = \frac{r_p}{n}$  is the headcount ratio,  $G_p$  is the Gini coefficient among the poor ( $0 \leq G_p \leq 1$ ).

The Foster-Greer-Thorbecke (FGT) index is a composite measure which is based on a single formula and is capable of incorporating various degrees of concern through the poverty aversion parameter  $\alpha$  (Foster, Greer & Thorbecke, 1984). The index is given as follows:

$$P_\alpha = \frac{1}{n} \sum_{i=1}^{r_p} \left[ \frac{z - y_{ai}}{z} \right]^\alpha \quad \text{----- (6)}$$

<sup>11</sup> This states that, given other things, a pure transfer of income (or consumption/expenditure) from a person that is below the poverty line to anyone that is richer must increase the poverty measure.

<sup>12</sup> This requires that the poverty measure must be dependent on the incomes (or consumptions/expenditures) of the poor.



where  $\alpha \geq 0$ ;  $n$  is the total number of households/individuals in the population;  $z$  is the poverty line;  $y_{ai}$  is the income (or consumption/expenditure) of the  $i$ th poor household/individual;  $r_p$  is the number of households/individuals below the poverty line;  $\alpha$  is the poverty aversion parameters.

The FGT index incorporates the headcount ratio, the poverty gap ratio and the poverty severity measure; these three measures can be obtained from the index by setting  $\alpha = 0, 1$  and  $2$  respectively. The FGT index is apparently the most popular/ most widely used index of poverty because apart from satisfying the major axioms for desirable poverty measures it has an added advantage of being additively decomposable among population subgroups.

It is important to state here that in the analysis of correlates/determinants of poverty the headcount ratio is used for it is the most suitable poverty measure for this purpose. The headcount ratio is very useful in tracking changes in the percentage of the population living in poverty.

#### 4. THEORETICAL ISSUES AND EMPIRICAL LITERATURE

In providing the theoretical foundation for employment/unemployment, it is customary to begin with the classical theory. The classical theory of employment/unemployment says that under free competition, the tendency of the economic system is to automatically provide full employment in the labour market. The theory asserts that unemployment results from rigidity in the wage structure and interferences in the working of the free market economy (Jhingan, 2001).

The Keynesian theory of employment/unemployment, on the other hand, says that employment depends on aggregate demand, and aggregate demand is determined mainly by consumption demand and investment demand. Consumption is a positive function of income and investment is a negative function of interest rate and a positive function of marginal efficiency of capital<sup>13</sup>. Thus employment is determined mainly by income, investment and marginal efficiency of capital. The Keynesian prescription for reducing unemployment is increase in aggregate demand through direct increases in government spending or intervention that encourage mainly more private investment and consumption (Obadan and Odusola, 2000).

As noted in Obadan & Odusola (2000), the 1950s and beyond were dominated by the extension of the Keynesian theory of employment/unemployment. Such extensions include the famous Okun's law and the Harrod-Domar model. Okun's law shows that actual unemployment is a function of actual output, potential output and potential unemployment. And the Harrod-Domar model shows that employment growth is determined by growth in labour productivity and growth in output.

Coming to poverty, a prominent theory of the phenomenon is the vicious cycle theory which posits that the various conditions of the poor combine to make them (the poor) remain in poverty. The theory has both demand and supply sides. The demand side shows that low productivity leads to low income and low income brings about low demand; low demand leads to low investment and low investment leads to capital deficiency which in turn brings about low productivity. On the supply side of the cycle, low productivity leads to low income and low income leads to low saving which in turn leads to low investment; low investment brings about capital deficiency and this in turn brings about low productivity (Jhingan, 2001). Other theories of poverty include the necessity theory, the individual attributes theory, the natural circumstantial theories and the power theory (Akeredolu-Ale, 1975). In contemporary literature, many theories of poverty are found. However, five of these are apparently most prominent. They are individual deficiencies theory; culture theory; economic, political and social distortions/discrimination theory; geographical disparities theory; and cumulative and cyclical interdependencies theory (Bradshaw, 2006).

<sup>13</sup> This is the rate of return on new investment or it is the expected rate of return over cost on new investment.

The theories of poverty in general show that there are many factors that bring about poverty. A major factor that leads to poverty is unemployment. As noted in Ajakaiye & Adeyeye (2001), employment is a key determinant of poverty. Gainful employment is very important for individuals/households to earn income and escape from income poverty. Unemployment usually leads to grossly insufficient income which in turn leads to inadequate consumption/expenditure and low level of living. Thus unemployment is expected to have negative impact on poverty. Also, nature of employment is expected to be highly correlated with poverty incidence.

Many empirical studies have shown that employment status and nature of employment of household head have significant impact on household poverty incidence (Allen & Thompson, 1990; Coulombe & McKay, 1996; Siddiqui, 2009). Analysis of the impact of employment status and nature of employment of household head on household poverty incidence is usually done within the context of determinants/correlates of poverty. In such analysis, models that contain various occupational groups and occupational status of household head are added to major correlates of poverty such as household size, age of household head, sex of household head, educational level of household head, household ownership of housing unit, access to credit, access to regular remittances, region of residence and sector of residence to form the regressors while the poverty status of household is used as the regressand.

The study by Allen & Thompson (1990) was done for the United States of America; the study used a logit model estimated using logistic regression technique. Coulombe & McKay (1996) study was done for Mauritania and it employed multinomial selection model estimated using multinomial regression technique as well as multiple regression technique estimated using the ordinary least squares technique. Siddiqui (2009) study was done for Pakistan; among other things, the study employed probit and logit models estimated using probit and logistic regression techniques respectively. The foregoing studies in general show that employment status and nature of employment of household head have significant impact on household poverty incidence.

## 5. ECONOMETRIC ANALYSIS OF THE IMPACT OF EMPLOYMENT STATUS AND NATURE OF EMPLOYMENT OF HOUSEHOLD HEAD ON HOUSEHOLD POVERTY INCIDENCE IN NIGERIA

Logit procedure is employed in this study. The logit procedure utilises a maximum likelihood estimator of parameters given the non-linear probability distribution of the random error. As shown in Greene (2008) and Gujarati & Porter (2009), a logit model gives parameter estimates that are asymptotically efficient, consistent and normal and the analogue of the regression t-test can be applied; in fact, logit models are known to produce statistically sound results. The logit model for this study is specified as follows:

$$L_i = \ln \left( \frac{P_v}{1 - P_v} \right) = \alpha_0 + \alpha_1 SHH + \alpha_2 AHH + \alpha_3 OHU + \alpha_4 HS + \alpha_5 ELHH + \alpha_6 PWM + \alpha_7 North + \alpha_8 Rural + \alpha_9 OCCHa + \alpha_{10} OCCHb + \alpha_{11} OCCHc + \alpha_{12} OCCHd + \alpha_{13} OCCHe + \alpha_{14} OCCHf + \alpha_{15} ARRM + \alpha_{16} AC + \varepsilon_i \quad (7)$$

Note: OCCHg is used as the base category.

The contents of equation 7 are defined as follows.  $L_i$  is the logit (i.e. the natural logarithm of the odds ratio);  $P_v = 1$  if household is in poverty and  $P_v = 0$  if household is not in poverty. The headcount measure of poverty is used. A household is considered to be poor if its per capita expenditure is less than two-thirds of mean per capita household expenditure in regionally deflated prices. SHH is sex of household head (male = 1; female = 0). AHH is age of household head (in years). OHU is household ownership of housing unit (yes=1; otherwise=0). HS is household size. ELHH is educational level of household head (in terms of years of formal schooling). PWM is proportion of working members in the household. North is place of residence with respect to Northern Nigeria (residing in Northern Nigeria = 1; residing in Southern Nigeria=0). Rural is place of



residence with respect to rural sector (residing in rural sector = 1; residing in urban sector=0). OCCHa is occupation of household head with respect to student, retired, unemployed and inactive group (yes = 1; otherwise=0). OCCHb is occupation of household with respect to professional or technical group (yes = 1; otherwise=0). OCCHc is occupation of household head with respect to administration and clerical group (yes = 1; otherwise=0). OCCHd is occupation of household head with respect to sales, services and related groups (yes = 1; otherwise=0). OCCHe is occupation of household head with respect to agriculture and forestry group (yes = 1; otherwise=0). OCCHf is occupation of household head with respect to production, transport, manufacturing and processing group (yes = 1; otherwise=0). OCCHg is occupation of household head with respect to the category called “others” (yes = 1; otherwise=0). ARRM is access to regular remittances. AC is access to credit.  $\varepsilon_i$  is the random error term. The a priori expectations are as follows:

$$\alpha_0, \alpha_4, \alpha_8, \alpha_9 > 0; \alpha_2, \alpha_3, \alpha_5, \alpha_6, \alpha_{10}, \alpha_{11}, \alpha_{12}, \alpha_{13}, \alpha_{14}, \alpha_{15}, \alpha_{16} < 0; \alpha_1, \alpha_7 < or > 0.$$

Note: The variables that capture employment status and nature of employment of household head are OCCHa, OCCHb, OCCHc, OCCHd, OCCHe and OCCHf.

The estimates of the model are presented in Table A below:

**Table A: Estimates of the Logit Model**

Variables	B	SE	Sig.	Exp(B)
SHH	-0.053	0.053	0.319	1.054
AHH	-0.004*	0.001	0.002	0.996
OHU	-0.176*	0.048	0.000	0.839
HS	0.262*	0.008	0.000	1.300
ELHH	-0.037*	0.003	0.000	0.963
PWM	-0.481*	0.062	0.000	0.618
North	1.239*	0.039	0.000	3.451
Rural	0.377*	0.049	0.000	1.458
OCCHa	-0.050	0.122	0.683	0.951
OCCHb	-0.768*	0.115	0.000	0.464
OCCHc	-0.409*	0.118	0.001	0.665
OCCHd	-0.217**	0.103	0.035	0.805
OCCHe	0.025	0.098	0.802	1.025
OCCHf	-0.172	0.123	0.164	0.842
OCCHg				
ARRM	-0.174*	0.053	0.001	0.840
AC	-0.254*	0.061	0.000	0.776
Constant	-1.402*	0.135	0.000	0.246

Cox & Snell  $R^2 = 0.255$ , Nagelkerke  $R^2 = 0.340$ . Likelihood Ratio Statistic = 5635.849.

P value for Likelihood Ratio Statistic (which follows the  $\chi^2$  distribution with 16 df.) = 0.000.

Source: Computed by the authors. The single star(\*) indicates that the parameter estimate is statistically significant at 1% while the double stars(\*\*) indicate that the parameter estimate is statistically significant at 5%.

Note: (a) B represents the parameter estimates; S.E. stands for the standard errors associated with the various parameter estimates; Sig. Stands for significant levels or the probability values of the various parameter estimates; Exp(B) represents the odds ratio associated with the various parameter estimates(these are obtained by taking the natural antilogarithms of the respective parameter estimates). The Logit becomes negative and

increasingly large in magnitude as the odds ratio decreases from 1 to 0 and becomes positive and increasingly large as the odds ratio increases from 0 to infinity (see Gujarati & Porter, 2009). (b) All values are approximated to three decimal places.

Table A shows the estimates of the logit model for this study. The model is generally robust; all the regressors, on aggregate, have significant impact on household poverty incidence in Nigeria. This is shown by the fact that the likelihood ratio statistic is statistically significant at 1%. Two pseudo  $R^2$  are presented namely the Cox and Snell  $R^2$  and the Nagelkerke  $R^2$ ; these are measures of goodness of fit; they are 0.255 and 0.340 respectively. However, as noted in Gujarati & Porter (2009), in binary regressand models, goodness of fit is of secondary importance. What matters are the signs of the parameter estimates and their statistical and/or practical significance.

As can be seen from the table, only the parameter estimates associated with sex of household head, occupation of household head with respect to student, retired, unemployed and inactive group, occupation of household head with respect to agriculture and forestry group and occupation of household head with respect to production, transport, manufacturing and processing group are not statistically significant at either 1% or 5% level of significance; the parameter estimate associated with occupation of household head with respect to sales, services and related group is statistically significant at 5% while the rest parameter estimates are statistically significant at 1%. Most of the parameter estimates have the expected a priori signs. Age of household head reduces the odds in favour of being in poverty; this implies that households with older people as heads have higher probability of escaping poverty than households with younger people as heads. Household size is directly related to poverty. Ownership of housing unit reduces the odds in favour of being in poverty; the odds ratio of 0.839 indicates that households that own houses, on aggregate, are less likely to be poor compared to households that do not own houses. Education level of household head is inversely related to poverty; this implies that the higher the educational level of household head, the lower the household poverty incidence. Proportion of working members in the household is inversely related to household poverty incidence. Residing in Northern Nigeria increases the odds in favour of being in poverty; this means that households that reside in Northern Nigeria are more likely to be poor compared to households that reside in Southern Nigeria. Residing in the rural sector increases the odds in favour of being in poverty; this implies that households that reside in the rural sector are more likely to be poor compared to households that reside in urban sector. Occupation of household head with respect professional or technical group, occupation of household head with respect to administration and clerical group, and occupation of household head with respect to sales, services and related group reduce the odds in favour of being in poor; households with heads in these occupational groups are less likely to be poor compared to households with heads in the occupational group classified as "others". Based on the odds ratio, of all the occupational groups that have significant impact on household poverty incidence, occupation of household head with respect to professional or technical group has the lowest odds in favour of being in poverty followed by occupation of household head with respect to administration and clerical group. Access to regular remittance and access to credit are inversely related to poverty; they reduce the odds in favour of being in poverty. The constant term has negative sign and it is statistically significant; however, it does not have much economic meaning. From the foregoing it is clear that in general employment status and nature of employment of household head have significant impact on household poverty incidence. Indeed, in many cases, having a form of employment is inversely related to poverty; it reduces the odds in favour of being in poverty.

## 7. RECOMMENDATIONS AND CONCLUSION

This study has shown that in general employment status and nature of employment of household head have significant impact on household poverty incidence; they reduce the odds in favour of being in poverty. Therefore, the government should put adequate measures in place to provide sufficient employment opportunities so as to pave the way for rapid and sustainable development. The study has also shown that some types of employment do not have significant impact on household poverty incidence such as employment in agriculture/forestry, production, transport, manufacturing and processing. These are occupations that hold major keys to rapid development. Thus the government should take adequate steps to make these occupations to become highly lucrative so that they can become very attractive and ultimately lead to tremendous reduction in household poverty incidence. Also, given that some occupations such as occupations in professional or technical group, and administration and clerical group have the lowest odds in favour of being in poverty, efforts should be made to further boost these occupations so that they can contribute even more in the reduction of household poverty incidence. Among other things, steps should be taken to produce sufficient highly skilled and middle-level manpower for the country for this will pave the way for tremendous reduction in poverty in the country.

In conclusion, unemployment and poverty are major indices of underdevelopment. They breed many other socio-economic ills and they ultimately lead to degradation of human dignity. As Nigeria aims at becoming one of the twenty leading economies in the world by 2020AD the government should take steps to guarantee adequate employment opportunities that will lead to tremendous reduction in poverty.

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