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# **Poverty and Non-Farm Income Activities in the Rural Economy: Evidence from Farm Households in Odeda Local Government Area of Ogun State, Nigeria**

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**By**

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## **Abstract**

*This study had measured the poverty status of rural farm households in Odeda Local Government Area of Ogun State, and considered the determinants of the household heads engaging in non-farm income-generating activities. Result of the logit regression model showed that gender, dependency ratio and availability of secondary job employment opportunity within the reach of the household were the significant variables that determined the likelihood of the household head engaging in non-farm income sources. Gender was statistically significant at 5% and was positive, implying that male household heads are more likely to engage in non-farm income activities than their female counterparts. Having large dependants increases the likelihood of the household head engaging in non-farm income-generating activities. Availability of secondary labour employment institutions within the neighborhood increases the likelihood of the household head engaging in non-farm income-generating activities.*

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### **Introduction**

Rural poverty appears to be endemic in sub-Saharan Africa (SSA), and this situation has attracted much attention. Particularly disheartening is the fact that this problem, rather than abate, is proving intractable, at least in certain regions. One of the serious effects of rural poverty, of course, is food and nutrition insecurity, and its attendant socio-economic and political cost. A food secured household is one that reliably obtains food of adequate quality and quantity to support a healthy and active life for all members of the household (Heidhues et al, 2004).

Poverty contributes to poor agricultural productivity, as many farmers in Nigeria cannot afford to purchase necessary input such as fertilizers, pesticides and improved seeds which could bring about increased productivity. Also, the ability of poor consumers to purchase food necessary for maintenance of health and productive life is reduced. The fact that security in Africa has greatly worsened since 1970 (Rosegrant et al; 2005) has resulted in decline in per capita consumption of food in some African regions in recent times. Agricultural research, a vital component of integrated strategies for poverty reduction, has a crucial role to play in creating escape from food insecurity and poverty by improving farm income, generating employment for farm workers, reducing food prices and fueling economic growth. Boosting agricultural growth by applying new technologies is one important way to reduce rural poverty.

According to the Federal Office of Statistics, incidence of Poverty in Nigeria increased sharply between 1980 and 1985 and between 1992 and 1996. Critical factors responsible for this are rapid population growth or over population, the use of poor inappropriate technology, low growth rate of economy, prevalence of inappropriate resource allocation, particularly in the public sector and low rate of investment. The interaction of this variable places a large sector of the economy in vicious cycle of poverty. The rural areas and vulnerable groups, especially women, were affected more by the worsening poverty situation Nigeria experienced in the 1980s and 1990s. Incidence of poverty rose from 46.3% of the population in 1985 to 65.5% in 1996. Available data indicate that majority of the poor are located in the rural areas. In 1985, 1992 and 1996 the share of the poor in the rural areas were 49.9%, 46.1% and 67.8% respectively, making poverty largely a rural phenomenon using consumption and income analyses. The situation in the SSA is that rural poverty account for 65.9% of the overall poverty (Khan, 2000). Of serious concern is the statistic that about 77% of farmers are poor, out of which more than 48% is extremely poor.

Poverty in Nigeria is multi-dimensional in occurrence; it is not region specific, spreading its tentacles across the whole nation. Its reflection was quite noticeable in the lives of rural household as well as urban household. Though a greater population of the Nigeria population resides in the urban areas, poverty has been on an alarming rate of increase in the rural areas. Poverty, in general term means a state of living in which an individual or community suffers from deprivation, these being majority in terms of financial resources. Deprivation is also in terms of access to good nutritional food,

portable water, comfortable accommodation and a hygienic environment. It is also characterized by hunger, unemployment, inadequate transport facilities among others.

Rural poverty appears to be endemic in sub-Saharan Africa (SSA), and this situation has attracted much attention. Particularly disheartening is the fact that this problem, rather than abate, is proving intractable, at least in certain regions. One of the serious effects of rural poverty, of course, is food and nutrition insecurity, and its attendant socio-economic and political cost. A food secured household is one that reliably obtain food of adequate quality and quantity to support a healthy and active life for all members of the household (Heidhues et al, 2004). This study had measured the poverty status of rural farm households in Odeda local government area of Ogun State as well as describing the influence of selected socio-economic factors on the likelihood of household members' participating in non-farm income-generating activities.

### **Poverty Situation in Nigeria**

Ajakaye and Adeyeye, (2001) has not only classified Nigeria as a persistently "poor" nation since the 1990s, but had also noted that this phenomenon had degenerated in Nigeria, affecting it in all its physical, moral and psychological ramifications. The search for appropriate strategies for reducing poverty levels among the citizens is one major problem confronting the Nigeria government of today, either at the federal, state or at the local government level. The incidence was 15 percent in 1974 (ILO, 1976) rose to 35 percent in the urban areas and 40 percent in the mid 1980s. The Nigerian evidence suggests that living standards did decline and poverty increased. The movement in rural and urban poverty level followed the trends in national poverty. Rural poverty which stood at 29.3 percent in 1980 rose to 51.4 percent in 1985, fell to 46 percent in 1992 but increased sharply to 69.8 percent in 1996. On the other hand, urban poverty at 17.2 percent in 1980, rose to 37.8 percent in 1983 and remained relatively stable up to 1992, from where it rose to 58.2 percent in 1996 (FOS, 1999). Rural poverty was higher than urban levels between 1980 and 1996.

The growth of the real GDP since the adoption of SAP (except 1988 and 1990) has been impressive (Ajakaiye and Adeyeye, 2001). Under the UNDP Human Development Index (HDI), Nigeria ranked as the 142<sup>nd</sup> with HDI of 0.400 among the 184 countries listed in 1997; by 1998 it dropped to 146<sup>th</sup> position and fell among the 40 poorest countries. By year 2006, Nigeria ranked the 159<sup>th</sup> among 177 poor nations in the world (UNDP, 2006; IMF, 2005). The conviction therefore is that poverty has been on the increase commensurate with the extent of the deterioration in the economy (Awoseyila, 1999). Poverty incidence in Nigeria increased from 28.10% in 1980 to 46.30% in 1985; by 2004, 54.4% of the Nigerian population has become extremely poor. World Bank (1996) referred to the situation in Nigeria as poverty in the midst of plenty because despite the high level of resource endowment in the nation, the people are still extremely poor.

Poverty is caused by factors which are many and varied in nature (Odejide, 1997; Okoji, 1997 and Okojie, 1997). In Nigeria, poverty situation started with the onset of the oil bloom when agricultural production started to decline leading to rural-

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urban migration. This was followed by downward trend in oil prices, continued reduction of subsidy on petroleum products and other subsidies on agricultural inputs, high level of unemployment, low capital for investment as well as low share of public expenditure on economic and social services (Olowononi, 1997).

Research studies on the impact of the Structural Adjustment Programme (SAP) in Nigeria, also abound to prove that the poor did not benefit from it (Aku et al, 1997), instead income inequalities widened after its introduction. Some causes of poverty in Nigeria have been identified by the Ajakaye and Adeyeye (2001) and these include inadequate access to employment opportunities, physical assets (land and capital) and minimal access of the poor to credit, even on a small scale. There is also inadequate access to markets where the poor can sell goods and services. Other causes of poverty in Nigeria include corruption, bad leadership styles, massive waste, poor management and misallocation of resources on the part of the leaders (World Bank, 1996) as well as low individual motivation, ineptitude and inabilities, and lack of revolutionary consciousness on the part of the followers (Awoseyila, 1999).

### **Rural Livelihood Diversification and Non-Farm Activities in Rural Nigeria**

Since the concept of livelihood has rapidly gained ground as an approach to rural poverty reduction in poor countries, the notions of diversity and diversification of income base have become a strategy among poor farm households (Ellis, 2000). Barrett et al (2001) defined rural diversification as a practice by which rural poor households engage in various off-farm and non-farm income-generating activities to reduce income shocks, rather than depending on income from just one source or hold all their wealth in the form of a single asset. The livelihood portfolio is the bundle of activities households engage in to generate livelihood and achieve a certain level of livelihood security. Diversification of income sources has been put forward as one of the strategies households employ to minimize household income variability and to ensure a minimum level of income (Alderman and Paxson, 1992). As a risk-coping strategy, income diversification is usually taken to imply a trade-off between a higher total income involving greater probability of income failure. In other words, risk-averse households are willing to accept lower income for greater security (Ellis, 2000).

Following Bavinic *et al* (1997), the household is a family based co-residential unit that takes care of resource management and the primary needs of its members. The criterion of co-residence does not necessarily imply living under one roof, but the proximity of household members has to be such that they share in at least a major part of household resources and daily activities. However, membership of a household poses some problems in a situation of much labour migration. Migrants do not participate in the daily activities of their household of origin anymore, but they contribute to its resources through remittances, which is why they can be regarded as an asset to their household of origin. The level of household livelihood security is seen as the outcome of processes taking place within the household for which resources are used. Empirical studies from some countries have supported the hypothesis that income diversification is linked to lowering risk. Hence, Lanjouw and Feder (2001) point out

that risk aversion, combined with credit and insurance market imperfections, is not the only reason for pursuing a diversified portfolio of activities. Barrett et al (2000) argued that if households faced identical prices and constraints, then observed differences in diversification patterns could occur purely from measurement error or differences in preferences, such as with respect to risk.

## **Methodology**

### **Area of Study**

The study was conducted in Odeda Local Government Area of Ogun State, having its headquarters town in Odeda, situated some 10kilometers awwy from Abeokuta, the State capital. Odeda LGA has a landmass of 1,263.25sq. km, and shares boundaries with Ibarapa and Iddo Local Government Areas of Oyo state in the North and East respectively, while in the South and West by Abeokuta South and Obafemi/Owode Local Government Areas, respectively. Odeda Local Government area has three zones, namely: Politically, Odeda, Ilugun and Opeji zones; Odeda had 4 wards, while Opeji and Ilugun had 3 wards each to give a total of 10 wards. The people are predominantly Egbas, and they speak Egba dialect.

### **Source of Study Data, Method of Collection and Sampling Procedures**

Primary data were obtained using structured questionnaire administered on a sample of 148 households in the study area. Multistage sampling techniques were used in the survey. In the first stage, one farming community was selected from each of the 10 wards in the local government area. The second stage involved random selection of at least 60% of the residential houses in each of the selected farming communities, leading to a total of 213 houses. The final stage involved a systematic selection of one farming household at an interval of two residential houses included in the sample, yielding about 107 housing units in the study. Twenty-eight (28) questionnaires were excluded from the lot due to incomplete information, bringing the number of respondents to 120.

### **Method of Data Analysis**

Descriptive statistical analysis (tables of frequency and percentages) were used to analyse the socio-economic characteristics of the surveyed farm households. Contribution of various farm and non-farm income sources to household income was also presented on tables. Influence of selected socio-economic factors (including household poverty status) on the decision of farm households to take up job opportunities in the rural non-farm sector, were analyzed using the logit regression model. The logit model assumes the form:

$$g(P_i) = \frac{\text{Log}(P_i)}{1 - P_i} = \sum \beta_i X_{it} \quad (1)$$

where,

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$$P_i = P\left(Y_i = 1/X_{it}\right) = \frac{\exp(\sum \beta_i X_{it})}{1 + \exp(\sum \beta_i X_{it})} \tag{2}$$

which can further be expressed as  $q_{it} = \beta X_{it} + \varepsilon_{it}$

(3)

where  $q_{it}$  is an unobservable latent variable for the household head engaging in non-farm income generating activities;  $X_{it}$  is vector of explanatory (individual, household, and community-level) variables influencing the choice of the household head engaging in non-farm activities; and  $\varepsilon_{it}$  is error term.  $q_{it}$  takes on the observed binary value, 1 if the household head engages in non-farm activities; and 0, otherwise. The probability that  $q_{it}$  assumes value 1 is given as:

$$Pr ob.(q_{it} = 1) = \frac{\varepsilon^{\sigma_i} + \beta^{X_{it}}}{1 + \varepsilon^{\sigma_i + \beta X_{it}}} \tag{4}$$

The explanatory variables  $X_{i,s}$  included in the model were:

$X_1$  = Age of the household head (years)

$X_2$  = Gender of the household head where (male = 1 and female = 0)

$X_3$  = Marital status of the household head (1 for married person; and 0 if Otherwise).

$X_4$  = Number of years of formal schooling by the household head

$X_5$  = Nativity of household head (1= indigene of residential area; 0 if otherwise)

$X_6$  = Amount received as remittances by household head per annum (N)

$X_7$  = Number of years of farming

$X_8$  = Dependency ratio of the household

$X_9$  = Access of household head to electricity (1if accessible; 0 otherwise)

$X_{10}$  = Availability of secondary job employment opportunities within 1Km radius of the household (1= available; 0 otherwise).

**Household Poverty Measures**

This FGT index was the most widely and comprehensive measure of income poverty (Foster, Greer and Thorbeeke, 1984), given as:

$$\log E = a + b_i X_i + \varepsilon_i \tag{5}$$

The poverty line is then derived as:

$$Z = \varepsilon^{(a+bR)} \tag{6}$$

where:

R = Recommended calorie intake

$a$  and  $b$  are estimates from the equation.

Therefore, poverty status of the farm household is measured by:

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

(7)

Where:

$\alpha = 0, 1, 2$

Z is the determined household poverty line

$g_i = Z - y_i$  is the income shortfall in the  $i^{\text{th}}$  household

q= number of poor households

n is the total number of households.

When  $\alpha = 0$ , the relation expresses poverty incidence which is the proportion of the population falling below the poverty line;  $\alpha = 1$  expresses poverty depth, a measure of how far below the poverty line the individual household has fallen; and  $\alpha = 2$  expresses the poverty severity, which is a measure of the degree of poverty among the poor households.

## Results and Discussion

### Socio-Economic Characteristics

Table 1 presents the surveyed households' community information. It shows that majority (75.8%) of the household members did not enjoy good tarred road, have no access to electricity (91.70%), good water sources (66.70%), and GSM services. Health centers were not sufficient enough in Odeda Local Government Area of Ogun State. The local government was dominated by primary schools. The implication of this is that there will high populations of illiteracy which may lead to high poverty level.

**Table 1: Households' Community Information**

Infrastructural Facilities	Measurement	Frequency	Percentage
Access Road	Tarred and in good state	29	24.2
	Untarred and in poor state	91	75.8
	<b>Total</b>	<b>120</b>	<b>100.0</b>
Access to electricity	Available	10	8.3
	Not Available	110	91.7
	<b>Total</b>	<b>120</b>	<b>100.0</b>
Access to water resource	Available	40	33.3
	Not-Available	80	66.7
	<b>Total</b>	<b>120</b>	<b>100.0</b>
Access to GSM	Available	20	16.7
	Not-Available	100	83.3
	<b>Total</b>	<b>120</b>	<b>100.0</b>
Health Services	Available	30	25.0
	Not-Available	90	75.0
	<b>Total</b>	<b>120</b>	<b>100.0</b>
Basic education	Primary	103	85.8
	Secondary	17	14.2
	<b>Total</b>	<b>120</b>	<b>100.0</b>

**Source:** Field survey 2008.

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Table 2 presents the surveyed residential households' socio-economic characteristics. It revealed that majority (65.8%) of the surveyed respondents lived in mud houses owned by the household head. 81.6% of the respondents used pit latrine as their toilets facility while only 2% used water closet. This is a reflection of high poverty profile among the surveyed households.

**Table 2: Residential Households' Socio-Economic Characteristics**

<b>Household Information</b>	<b>Measurements</b>	<b>Frequency</b>	<b>Percentage</b>
Type of Resident	Block house	41	34.2
	Mud house	79	65.8
	<b>Total</b>	<b>120</b>	<b>100.0</b>
Ownership of Residence	Household head	62	51.7
	Extended Family	24	20.0
	Rented	30	25.0
	Spouse	4	3.3
	<b>Total</b>	<b>120</b>	<b>100.0</b>
Toilet Facility	Water Closet	2	1.7
	Pit Latrine	98	81.6
	Others	20	16.7
	<b>Total</b>	<b>120</b>	<b>100.0</b>

*Source:* Field survey 2008.

## **Determinants of Rural Farm Households' Engagement in Non-Farm Income Activities**

The result of the logit regression model is presented on Table 3. It shows that gender, dependency ratio and availability of secondary job employment opportunity at short range within the reach of the household were the significant variables that determine the likelihood of the household head engaging in non-farm income generating activities. Gender was statistically significant at 5% and is positive, implying that male household heads are more likely to get involved in non-farm income activities. Also, having large proportion of household members as dependants increases the likelihood of the household head engaging in non-farm income-generating activities. Lastly, availability of secondary labour employment facilities/institutions within the reach of household heads increases the likelihood of engaging in non-farm income-generating activities.



**Table 3: Factors Influencing Household head’s Engagement in Non-farm Income Sources**

Variables	Coefficient	Standard error	b/St.Er.
Constant	0.07173382235	0.41677177	0.172
Age	0.00193419865	0.0043605102	0.437
Gender	0.2753730796**	0.12612680	2.183
Marital status	0.06277957082	0.16514118	0.380
Education	0.01486430351	0.057530033	0.258
Nativity	0.07815271252	0.095229324	-0.821
Remittances	0.03765851316	0.028090945	-1.341
Farm experience	0.07848000347	0.085047640	0.923
Dependency Ratio	0.06357036869**	0.029576609	2.149
Electricity	-0.263510737	0.50044086	-0.527

**Source:** Field survey, 2008.

\*\*\* Significant at 1%; \*\* Significant at 5%; \* Significant at 10%

### **Extent and Level of Poverty Manifestation Among Rural Farm Households**

Table 4 shows that household heads with age >59 were the most susceptible to poverty having 188.098 poverty incidences. This is closely followed by age group 30-39. The values of  $P_1$  and  $P_2$  confirmed this fact with the poverty status among the age groups. Household head aged between 50-59 had the lowest incidence of poverty followed by age class 40-49. The table also revealed that male headed households had higher incidence of poverty than the female headed households. Also, the values of  $P_1$  and  $P_2$  were higher for males than females. This implies that male headed households had many tasks to perform interims of responsibility at home. The table showed that incidence of poverty is higher among households whose heads are married. This could be as a result of higher level of responsibilities than that of single-headed household. It also shows that poverty incidence ( $P_o$ ) of households whose head have formal education (primary, secondary and tertiary) were lower than for households without formal education. This might be attributed to their relatively higher likelihood for taking up job opportunities in the rural non-farm sector. Households with size of 5-10 had higher incidence of poverty (153.725 ) than those with 5 members and below (63.533). Thus household poverty level increases with increasing number of household size.

**Table 4: Occurrence of Poverty Among The Respondents by Socio-Economic Characteristics**

<b>Socio-Economic Characteristics</b>	<b>Incidence (P<sub>o</sub>)</b>	<b>Depth (P<sub>1</sub>)</b>	<b>Severity (P<sub>2</sub>)</b>	<b>Head Count</b>
<b>Age</b>				
<30	127.451	0.128	0.016	12
30-39	160.832	0.423	0.052	38
40-49	116.470	0.031	0.075	33
50-59	106.256	0.940	0.318	22
>59	188.095	0.665	0.467	15
<b>Sex</b>				
Male	142.212	0.303	0.293	100
Female	96.121	0.213	0.149	20
<b>Marital Status</b>				
Single	80.020	0.708	0.177	9
Married	143.454	0.270	0.269	111
<b>Education</b>				
No formal education	135.608	0.200	0.164	25
Primary	170.379	0.508	0.462	65
Secondary	106.548	0.943	0.408	25
Tertiary	89.090	0.788	0.174	5
<b>Religion</b>				
Christians	131.407	0.163	0.096	83
Islam	155.050	0.372	0.172	37
<b>Main occupation</b>				
Farming	146.327	0.295	0.157	49
Artisanship	153.816	0.361	0.159	29
Government work	119.330	0.056	0.054	18
Working as paid labour	152.393	0.349	0.264	7
Trading	79.3164	0.702	0.153	11
Transport business	244.345	0.162	0.132	2
Processors	58.673	0.519	0.231	1
Hunting	73.904	0.654	0.129	3
<b>Farming experience (years)</b>				
None	136.567	0.209	0.167	37
1-9 years	133.613	0.182	0.154	39
10-19 years	147.828	0.131	0.145	36
20 years and above	132.237	0.170	0.067	8
<b>Household size</b>				
<5	63.553	0.562	0.438	20
5-10	153.725	0.360	0.127	100

Source: Field survey, 2008.

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