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## **LIVELIHOOD DIVERSIFICATION, GENDER AND POVERTY AMONG RURAL HOUSEHOLDS IN OSUN STATE, NIGERIA**

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### **Abstract**

*Most rural households in Nigeria are poor and majorly agrarian yet do not base their livelihoods solely on agricultural income. Gender is thought to be a prominent socio-economic factor affecting participation of rural households in livelihood activities and consequently, their poverty status. Therefore, the effects of livelihood patterns and gender on poverty status of rural households in Osun State, Nigeria were examined in this study. Primary data was collected from 122 rural household heads, through a multi-stage random sampling procedure, using well-structured questionnaires. The data were analyzed using Foster-Greer-Thorbecke (FGT) poverty measure and probit regression. The results revealed that crop farming was the predominant livelihood activity among the households with more women involved in off-farm (53.30%) than on-farm activities (46.70%). More female headed households (55%) were poor compared to their male counterparts (49.60%). Poverty was least among households involved in both on-farm and off-farm activities than those harnessing one activity. The probit estimates showed that age squared household size, share of total household income from on-farm activities and off-farm income reduced poverty while age increased the probability of being poor buster did not affect poverty. Therefore, the study recommends that both farm and off-farm activities should be encouraged for effective poverty reduction among rural households.*

**Keywords:** Livelihood activities, male and female headed households, on-farm and off-farm income, rural poverty.

### **Introduction**

*More than half of the population in developing countries live in rural areas and engage in farming as primary occupation (FAO, 2015). Agriculture plays a central role in providing employment opportunities and income in most rural communities in developing countries. However, most rural households cultivate small and scattered farms using crude methods thus making farming a less productive and profitable enterprise. Consequently, poverty remains an endemic problem among rural households (Moyo, 2016; Oluwatayo, 2014). Poverty is a state of deprivation of*

human needs confronting a person, household, community or nation (Sanusi *et al.*, 2013). Livelihood, on the other hand, comprises the capabilities, assets/capitals and activities required for a means of living (Khatiwada *et al.*, 2017). The combinations of activities undertaken by people in order to earn income reduce vulnerability and increase their overall well-being within the subsisting social, economic, political and environmental influences define their livelihood strategies (Eneyew and Bekele, 2012). A household's choice of livelihood activities invariably depend on access to and control over the five livelihood assets/capitals namely; human capital, physical capital,

social capital, financial capital and natural capital. Poor individuals, households or societies face livelihood challenges such as malnutrition, exposure to risks, short life span, and insufficient access to social and economic services and limited opportunities for income (Nwandu *et al.*, 2016; Adebayo 2013).

There is a growing recognition that rural livelihoods are not solely agriculture-based but inclusive of both farm and non-farm sources. In fact, the rural non-farm activities are gaining increasing relevance as households now maintain portfolio of livelihood activities in order to generate income (IFAD, 2011). Wage employment in agriculture and other activities done away from a farmer's own farm constitute a set of off-farm activities from which a rural household may *eke out livelihood* (Covarrubias *et al.*, 2009). According to Kebede *et al.* (2014) inability to sustain livelihood solely from agriculture is a strong push factor for diversifying means of livelihood among rural households in sub-Saharan Africa. Similarly, other socio-economic, institutional and infrastructural factors may also affect participation in diverse livelihood activities among rural households (Kassie *et al.*, 2017; Davis, 2006). Gender appears prominent among the factors that affect such livelihood choice decisions (Kebede *et al.*, 2014). Gender differentiates roles and responsibilities between males and females in the *society* (Oláh *et al.*, 2014). The peculiarity of roles often brings about differing priorities and concerns regarding management decision and use of natural resources and food production among men and women across regions and cultures (Oláh *et al.*, 2018; Kebede *et al.*, 2014). Men dominate the use of natural resources for agriculture and other economic activities in most regions of the world (UNEP/UN Women/PBSO/UNDP, 2013). On the contrary, women manage smaller and less profitable businesses due primarily to their limited access to productive assets (Ajani and Igbokwe, 2013). Since asset ownership is critical to the choice of livelihood activity and income generation among households (Khatiwada *et al.*, 2017), the asset-deprived women are more likely to be poor. Meanwhile, at the heart of inclusive growth and

poverty reduction policy around the world is the gender consideration for equal livelihood opportunities (Rodgers and Zveglic, 2014).

Despite the country's great endowment of natural and human resources, Nigerians have paradoxically fared poorly; the nation ranks highly among the poorest countries in the world (Oloyede, 2014). As found by Ewubare *et al.* (2018), poverty in Nigeria has been on the increase since 1980 when the National Poverty Index (NPI) was 40.2% %, to 1990 when it rose to 50.3% and 64.4% in 2004, but reducing in 2010 to 54.43% and rising again to 61.2% in 2017. Moreover, the nation's current demographic outlook which indicates further increase in population suggests that majority of Nigerians are at risk of persistently living in poverty (Dapel, 2018; Etebong, 2018). Poverty reduction has therefore been at the heart of Nigeria's development policy since the early 1990s. The developmental efforts have targeted vulnerable groups such as farmers, rural dwellers, unemployed, women and children (Adamu and Inuwa, 2016; Oloyede, 2014). Among the various poverty reduction programmes of government are the: Family Support Programme (FSP) in 1994, Family Economic Advancement Programme (FEAP) in 1997, National Poverty Eradication Programme (NAPEP) in 2001, National Economic Empowerment and Development Strategy (NEEDS) in 2004 and Rural Electrification Agency (REA) established by the Electric Power Sector Reform Act in 2005. These programmes of government have sought to improve the living standards of the people, particularly the rural dwellers, who make up a large portion of the Nigerian populace (NBS, 2010), through enhancing their livelihood activities.

The ability or disability of households to participate in livelihood activities may make the difference between the household experiencing chronic or transient poverty (Begge *et al.*, 2016). Further, the absence or presence of livelihood assets and capability in a household form the basis of the household's participation in any livelihood activity (Khatiwada *et al.*, 2017). These livelihood assets comprise the

financial capital, physical capital, human capital, social capital and natural capital. A livelihood strategy undertaken by any household may be further defined by a particular pattern which reflects whether a household participates solely farm in activities, a combination of farm and non-farm activities or solely non-farm activities (Zhao, 2014). Since, livelihood assets form the basis for participating in any livelihood activity (Khatiwada *et al.*, 2017) the livelihood strategy and pattern undertaken by any household may depend on their access to livelihood capital. Hence, access to the capital may therefore lead to reduction in poverty through enhanced participation in livelihood activities.

Factors that affect choices of livelihood activities often differ across regions and among individuals thus, underscoring the need for policies with location and individual specificity to help rural households maximize their livelihood opportunities (Khatiwada *et al.*, 2017; Rodgers and Zveglich, 2014; Kebede *et al.*, 2014; Zhao 2014). The reality of differences in gender roles and responsibilities based on existing cultural norms in Nigeria and other developing countries, especially in Africa, make access to certain livelihood assets an exclusive reserve for men (Oláh *et al.*, 2014). Hence, involvement in certain livelihood activities becomes restrictive for women. For instance, Croppenstedt *et al.* (2013) found that inadequate access to land and other farm inputs made women farmers in Africa less productive and less commercial. Therefore, a gender-oriented empirical study will provide insights into how certain factors limit or favour the participation of men and women in livelihood activities among rural households. Further, such a study will provide the right policy direction towards enhancing adoption of appropriate strategies for income generation and poverty reduction among men and women in the society. Although, previous studies have examined both gender-poverty and gender-livelihood strategies relationships among rural households using different data sets (Adeniyi *et al.*, 2016; Aderinoye-Abdulwahab *et al.*, 2015; Twerefou *et al.*, 2014; Ajani and Igbokwe, 2013; Sakuhuni *et al.*, 2011) there is dearth of empirical knowledge about the gender-

livelihood-poverty nexus among rural households. Hence, this study contributes to the understanding of rural economies by examining, through the gender perspective, the livelihood strategies and poverty status among households in Osun State, Nigeria. The pertinent research questions were: What are the livelihood patterns in the study area? What is the poverty status of households in the study area? Do gender and livelihood patterns affect poverty status in the study area? Therefore, in this study, the patterns of livelihood were identified such as solely farm, solely off-farm or a combination of both. Poverty was disaggregated on the basis of gender and livelihood patterns. The effects of gender and livelihood activities on poverty status among households in the study were also examined.

## **2.0 Methodology**

### **2.1. Data and Study Area.**

The study was conducted in Osun State, Nigeria. The state covers an area of approximately 14, 875 square km and lies within the geographical coordinates 7°30'N and 4°30'E. The state experiences a mean daily temperature of 33°C, wind speed of 3km/h, and a humidity of 57 %. It comprises of 30 Local Government Areas (LGAs) distributed over three main agro-ecological zones. Osun state has a population of 3,416,959 comprising the Ijesas, Osun, Ifes, and Igbominas (NBS, 2011). Although, the common language is Yoruba, there are variation in intonation and accents across the towns and cities. It is an agrarian state. Farmers in Osun State majorly produce food crops such as yam, maize, cassava, beans and cocoyam while cocoa, kola and oil palm are the predominant cash crops. Artisans are also common among the people (Adesoji *et al.*, 2014). The landscape is a natural repository for mineral resources like gold and kaolin, thus making mining part of economic activities in the area.

Primary data were collected for the study through the use of well-structured questionnaires. The information contained in the data included: socio economic characteristics (age, gender, marital status, education, and sources of income, livelihood activities/strategies), as well as strategies adopted to cope with various stresses and shocks. Information regarding household expenditure, and income from on-farm and off-farm activities were also collected. The study employed a multi- stage sampling technique for the data collection. The first stage was the random selection of one (Ife/Ijesa) out of three agricultural zones of the Osun state Agricultural Development Programme (OSSADEP) – Osogbo, Iwo and Ife/Ijesa. Next, two (2) out of the eleven (11) local governments in the zone were randomly selected; Atakumosa west and Ilesha-west local governments. In the third stage, three (3) wards were randomly selected from the local governments. Okebode and Ibodi wards were selected from Atakumosa while Ilaje ward was selected from Ilesha-west. Next, four (4) villages were randomly selected namely: Oke-Osin and Okebode (Okebode ward), Ibodi (Ibodi ward) and Ilaje (Ilaje ward). In the fifth and final stage, thirty five (35) households were randomly selected in each village, resulting in a total of 140 questionnaires administered. After data cleaning, 122 households gave complete information and were used for the analysis.

Descriptive statistics was used to profile the socio-economic characteristics of the households and their participation in various livelihood activities. Following (Yesuf, 2015; Babatunde and Qaim, 2009) livelihood activities among the households were categorized into on-farm and off-farm activities. Whereas on-farm activities represent all activities carried out on farms owned by the households, off-farm activities were used in a broad sense to represent all waged farming activities done outside a household’s farm together with non-farm activities done outside agriculture.

## 2.2. Method of Analysis.

The Foster-Greer-Thorbecke (FGT) measures of poverty were used in generating the poverty line and classifying the households according to their head count, depth, and severity of poverty. Binary probit regression was adopted to examine effects of gender and livelihood strategies and other correlates on poverty. Following Igbalajobi *et al.* (2013) the Foster-Greer-Thorbecke (FGT) measure of poverty by Foster *et al.* (1984) measures is given as:

$$P_{\alpha}(y, z) = \frac{1}{N} \left( \frac{z - y_i}{z} \right)^{\alpha} \quad 3$$

Where:

$\alpha$  = the FGT poverty index (also referred to as the poverty aversion parameter).  $\alpha$  takes on values 0, 1, 2, for:  $P_0$  = poverty headcount;  $P_1$  = poverty depth and  $P_2$  = poverty severity respectively.

$n$  = total number of households

$z$  = poverty line constructed as two-third (2/3) of the households’ mean per capita expenditure (MHPCE)

$y_i$  = the per capita food expenditure of the household in which individual  $i^{th}$  lives.

The poverty status of households could be explained using the three indicators – head count index ( $P_0$ ), Poverty depth ( $P_1$ ), and severity of poverty ( $P_2$ ). The head count index is the proportion of households below the poverty line. The higher the headcount index the more the prevalence of poverty. Following Igbalajobi *et al.* (2013) and Awotide *et al.* (2010) households whose per capita expenditure fall below the estimated poverty line were classified as poor, while households which equaled or was above the poverty line were classified as non-poor. The poverty gap index is the proportion of expenditure per capita required to enable poor households below the poverty line to move up to the poverty line; the higher the value of poverty gap

index, the more expenditure is required. The severity of poverty is the sum of the square of poverty depth divided by the number of poor households in the sample; it makes a distinction between the poor and the poorest. The higher the squared poverty gap index, the greater the severity of poverty (Awotide *et al.*, 2010).

The effects of gender, livelihood strategies and other socio-economic determinants of poverty status among the households were examined using probit regression. A probit model becomes an effective solution to the deficiencies of the Linear Probability Model (LPM) which produces a heteroscedastic variance of error in the presence of dichotomous dependent variable and thus making the standard error estimate to be invalid (Wiggins and Sookram, 2014). Probit model recognizes an underlying regression for a continuous but latent unobservable response variable  $Y^*$  that determines the value assumed by a dichotomous variable  $Y$ . The value of  $Y^*$ , determines the probability of occurrence of the event concerned (Nagler, 1994). Following (Wiggins and Sookram, 2014) the binary probit model is stated as:

$$Y_1^* = \beta_0 + \sum X_i \beta + u_i; \quad u_i \approx N(0,1)$$

Such that:

$$Y_1 = \begin{cases} 1 & \text{if } Y_1^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

Then,

$$Pr(Y_i = 1) = \Phi(X_i \beta) \tag{4}$$

Where  $\Phi$  represents the cumulative normal distribution function,  $Y_i$  is the poverty status of households which takes on the value of 1 if household is poor and 0 if non-poor.  $\beta$  is a vector of parameters estimated and  $u_i$

is the error term while  $X_i$  represents the explanatory variables in the model which are shown in Table 1.

**Table 1: Variable description and expected signs**

	Variables	Description of variables	Expected signs
X <sub>1</sub>	Gender	Gender of household head (D=1 if male and 0 if female)	-
X <sub>2</sub>	Age	Age of household head Continuous (years)	±
X <sub>3</sub>	Squared of Age	Age of household head Continuous (years) squared	±
X <sub>4</sub>	Marital status	Marital status of the household head (1= married, 0=otherwise)	±
X <sub>5</sub>	Member of cooperative society	Household head's membership of cooperative society (1 if yes; 0 if otherwise)	±
X <sub>6</sub>	Household size	Size of the household (number of individual under the same roof, eating from the same pot, under the one member recognized as the head).	±
X <sub>7</sub>	(2) Years of education	Year spent in acquiring formal education	+
X <sub>8</sub>	Farm income share(%)	Share of farm income in total household income	-
X <sub>9</sub>	Off-farm income (₦)	Share of non-farm income in total household income	-

Source: Authors' compilation

### 3. Results and Discussion.

The socioeconomic characteristics of the rural households, described on gender basis, are presented on Table 2. Almost 90 % of the rural households surveyed were male headed as against 12.3% female headed households. This, in line with Akinbode (2013), shows a typical African rural household setting

where households are mostly headed by men who are usually noted to be the bread winners. The mean age was about 42 years although the mean age of male household heads was significantly lower than that of the female household heads. Most male household heads (42.06%) fall within 41-60 years whereas most female household heads (66.67%) were above the age of 60 years. This indicates that most female household heads have passed their active ages while their male counterparts are still in their productive ages. This may have implications for their livelihood and poverty status. While this finding corroborates Olorunsanya *et al.* (2012) it also supports the observation that the females often become household heads in the event of death, separation or out-migration of their husbands (Akinbode, 2013). Almost three-quarters of the household heads were married while the household size was about 5 persons on the average. The mean year of schooling was about 7 years, although; female household heads had significantly lower years of formal education than their male counterparts. This may also have implications for their poverty status (UNESCO, 2014). Almost three-quarters of the household heads were not members of any cooperative society, corroborating the findings of Awotide *et al.* (2015). Over three quarters of the households earned less than ₦21, 000 as farm income (77.1%) and off-farm income (81.15%), respectively. The mean farm income per month was about ₦9, 000 while mean off-farm income was ₦8, 000. This indicates that rural households' incomes from their livelihood activities are low hence, are likely to be poor.

As revealed in Table 3, more than half of the surveyed rural household heads (54.1%) engaged in farming activities while 45.9% engaged in off-farm activities as their main occupation. As expected of a typical rural area, this indicates, in congruent with Adepoju and Obayelu (2013), that farming is the predominant occupation in the study area. However, more females (53.3%) engaged in off-farm than farm activities. Crop farming was the most common farming livelihood activity engaged in by over half (51.5%) of all the household heads. The most common off-farm livelihood activities among male household heads were employed by private enterprises and civil service with 11.2% and 10.3%, respectively. This may be due to higher level of educational attainment among men as seen in Table 2. Conversely, the most common off-farm livelihood activities among female household heads were petty trading and personal business with

33.3% and 13.3%, respectively. This observation is in line with that of Ajani and Igbokwe (2013) that most female household heads in rural Africa are engaged in petty trading and other less remunerative activities apparently due to their limited access to productive resource needed in entering the more lucrative ones that could lift them out of poverty.

**Table 3: Distribution by participation of rural households in livelihood activities by gender**

Livelihood activities	Male	Female	All
<b>Number of observations</b>	<b>107</b>	<b>15</b>	<b>122</b>
<b>Farm</b>	<b>55.10</b>	<b>46.70</b>	<b>54.10</b>
<b>Crop</b>	52.30	46.70	51.60
<b>Livestock</b>	0.93	-	0.80
<b>Others</b>	1.80	-	1.60
<b>Off-farm</b>	<b>44.90</b>	<b>53.30</b>	<b>45.90</b>
<b>Civil service</b>	10.30	-	9.02
<b>Private employment</b>	11.20	-	9.84
<b>Processing of agricultural produce</b>	0.90	-	0.82
<b>Farm labor</b>	0.90	-	0.82
<b>Personal business</b>	9.30	13.30	9.83
<b>Artisans</b>	1.90	-	1.64
<b>Petty trading</b>	5.60	33.30	9.02
<b>Entertainment</b>	0.90	-	0.82
<b>Marketing of agricultural products</b>	2.80	6.70	3.28

Source: Field survey (2016)

### 3.1. Poverty Assessment of Households.

The poverty profile of the rural households is shown in Table 4. On the basis of per capita expenditure used as a proxy for welfare in this study, the poverty line stood at ₦5,235.07. The estimated head count index of 50 % showed that half of the rural households live below the poverty line. This is similar to the head count obtained by Adekoya (2014) among households in Ogun state, Nigeria. Furthermore, the poverty gap estimate of 21% indicates that an additional ₦ 1099.36 was required to raise the poor households to a level equivalent to the poverty line. The severity index of 11% showed that a relatively low number constituted the poorest households in the study area compared to 26.13% found in Ondo and Equity States (Adobo and Ajiboye, 2014); about 22.30% and 36.30% found in Jigawa and Kwara state respectively (Obayelu, 2014).



**Table 2: Socio economic characteristics of rural household heads by gender**

<b>Variable</b>	<b>Male</b>	<b>Female</b>	<b>All</b>	<b>t-test</b>
<b>Gender</b>	107(87.7)	15(12.30)	122(100)	
<b>Age</b>				
21-40	31 (28.97)	2(13.33)	33 (27.05)	
41-60	45( 42.06)	3(20)	48 (39.34)	
>60	31(28.97)	10(66.67)	41 (28.70)	
Mean ±SD	41±15.30	51.67± 14.86	42.31 ±15.58	10.67**
<b>Marital status</b>				
Married	77(71.96)	13(86.67)	90(73.77)	
Otherwise	30(28.04)	2(13.33)	42(34.43)	
<b>Household size</b>				
1-5	41(38.30)	5(33.30)	46(37.70)	
6-10	54(50.50)	8(53.30)	62(50.80)	
11-15	7(6.50)	1(6.70)	8(6.60)	
> 15	5(4.70)	1(6.70)	6(4.90)	
Mean±S.D	4.89±3.84	5.33±4.16	4.93±3.87	0.45
<b>Years of education</b>				
1-6	29(27.10)	9(33.30)	14(11.50)	
7-13	49(45.79)	4(40.00)	51(41.80)	

>13	29 (27.10)	2(13.33)	4(3.3)	
Mean±S.D	7.0± 5.18	3.73± 5.20	6.60±5.27	3.27 **
<b>Cooperative membership</b>				
Yes	26(24.3)	6(40)	32(26.2)	
No	81 (75.7)	9(60)	90(73.8)	
<b>Monthly farm income(₦)</b>				
<21,000	83(77.57)	11(57.1)	94(77.1)	
21,000 – 40,000	10(9.34)	2(28.6)	12(9.84)	
41,000 – 60,000	10(9.34)	2 (14.3)	12(9.84)	
>60,000	4 (3.74)	-	4(3.28)	
Mean± S.D	8822.43±19,214.68	8266.67±15163.24	8754.10±21,853.95	555.76
<b>Monthly off-farm income(₦)</b>				
<21,000	87(81.31)	12 (80.00)	99 (81.15)	
21,000 – 40,000	9 (8.41)	1 (6.67)	10 (15.8)	
41,000 – 60,000	6 (5.61)	1(6.67)	7 (5.74)	
61,000-80,000	1 (0.93)	0 (0)	1(0.82)	
>81,000	4 (3.74)	1 (6.67)	5 (4.10)	
Mean ± S.D	7663.55±18867.93	₦9533.33±22865.65	7893.44± 19306.49	1869.78

Source: Field survey, (2016). Figures in parenthesis represent percentage distribution.

**Table 4: Poverty line estimates and amount per capita for rural households**

Items	Amount(₦/Month)
<b>Total per capita household expenditure (PCHHE)</b>	958,017.70
<b>Mean per capita expenditure(MPCHHE)</b>	7852.60
<b>Poverty line (2/3 MPCHHE)</b>	5235.07
Poverty measure	Value
<b>Head count</b>	0.50
<b>Poverty gap</b>	0.21
<b>Squared poverty gap</b>	0.11

Source: Author’s calculation (2016)

Households in the study area were disaggregated by gender, livelihood activity pattern, and estimated poverty indices in Table 5. In agreement with Anyanwu (2010) poverty was higher among female headed households (55%) than their male headed counterparts (49.6%). This may have followed from the fact that in Africa, males were better-favoured in terms of economic empowerment than the females (Akinbode, 2013). In line with Awotide *et al.* (2015) however, higher poverty depth of 21% among male-headed households implies that an additional ₦1099.36 is required for the poor male households to reach the poverty line. On the other hand, the 19.8% poverty gap estimate indicates that poor female-headed households required an additional ₦1036.54 to reach poverty line. The result also further revealed that the least poverty head count of 45.3% occurred among households which were engaged in a combination of farm and off-farm livelihood pattern. This is followed by engaging in only off-farm activities (45.7%) and only farm activities (46.6%) respectively. The results agree with Awotide *et al.* (2010) and Dethier and Effenberger (2012), which found that engagement in several livelihood activities reduces the risk of poverty.

**Table 5: Poverty profile of households by gender and livelihood activity pattern.**

Variable	Head count %	Depth %	Severity %
<b>Gender</b>			
<b>Male</b>	49.6	21.0	11.3
<b>Female</b>	55.0	19.8	9.2
<b>Livelihood pattern</b>			
<b>Farm only</b>	46.7	19.6	10.2
<b>Non/Off-farm only</b>	45.7	18.9	10.4
<b>Farm and non/off-farm</b>	45.3	18.2	10.19

Source: Author’s calculation (2016)

**3.2. Effects of Gender and Livelihood Activities on Household Poverty Status.**

The probit regression estimates in Table 6 shows the effects of gender and livelihood as well as other socio-economic characteristics on the poverty status of households in the study area. The diagnostics parameters of the model reveal a log likelihood of -62.667743 and a chi square statistic of 32.01 which was significant at 1%. This indicates that the model was a good fit for the data. The results show that age of household heads, household size, membership of a cooperative society and off-farm income shares in total household income had statistically significant and negative effects on poverty status at various levels. Age of household head was negative and significant at 5%. Advancement in age by one year reduced the probability of being poor by about 0.0348. Being a member of cooperative a society positively determined poverty status of the households at 1%. Those households whose heads are members of a cooperative society are more likely to be poor by 0.2909. This is however contrary to expectation and the findings of (Abbas, 2016) that belonging to cooperative groups promote good living by enhancing skills acquisition, trainings, job opportunities and at times, financial assistance among their members. Household size was negative and significant at 1%. This indicates that an addition of one member to the households

decreased the probability of being poor by about 0.0887. This was also contrary to expectation and did not support Iqbalajobi *et al.* (2013) which found that an increase in household size reduces per capita expenditure and so impairs household welfare. A possible explanation for this is that, a large family size may provide opportunity for increasing family labour supply to both on-farm and off-farm activities among rural households in many African economies (Moyo, 2016). However, the negative effects of an explosive increase in population may render such economic opportunity unsustainable. Furthermore, off-farm income was a negative and significant determinant of poverty at 5%. An addition of ₦1 to income obtained from off-farm livelihood sources decreased the probability of being poor by 5.12e-06. This, is in agreement with Iqbal *et al.* (2017), indicates that participating in off-farm activities reduces rural household poverty. Gender had a negative coefficient, in conformity with expectation, but was not statistically significant in explaining poverty status among the households.

**Table 6: Parameter estimates of gender, livelihood and other socioeconomic effects on rural household poverty status.**

Explanatory variable	Coefficient	Marginal effects
<b>Gender</b>	0.2635 (0.5086)	0.1036 (0.2020)
<b>Age of household head</b>	-0.0009** (0.0005)	-0.0348** (0.0160)
<b>Age squared</b>	-0.0011** (0.0004)	-0.0003** (0.0002)
<b>Marital status</b>	-0.6352 (0.3867)	-0.2455 (0.1496)
<b>Member of cooperative society</b>	0.8246*** (0.3417)	-0.2909*** (0.1060)
<b>Household size</b>	-0.2296*** (0.0569)	-0.0887*** (0.0230)
<b>Farm income share</b>	-0.0985 (0.3609)	0.0381 (0.1394)
<b>Off-farm income</b>	-1.3e-05** (5.95e-06)	5.12e-06** (0.0000)

Number of observation= 122

Wald chi<sup>2</sup>(8)= 32.01

Prob.> chi<sup>2</sup> = 0.0001

Pseudo R<sup>2</sup> = 0.2410

Log likelihood = -

62.667743

\* Significant at 10%, \*\* significant at 5%, \*\*\*significant at 1%; standard error in parenthesis.

Source: Field survey, 2016.

#### 4. Conclusion and Recommendation.

The study concluded that crop farming was the predominant livelihood activity among households in the study area. Half of the sampled household heads were poor. Female headed households were poorer than their male counterparts. Households participating in both farm and non-farm activities were least poor compared to those participating in only farm or non-farm activity. However, number of livelihood strategies engaged and gender did not affect the probability of being poor among the rural households whereas, small-sized household and ageing household heads had a higher probability of being poor. Based on the foregoing, the study recommends that rural households should be encouraged to engage in both farming and non-farming activities for effective poverty reduction. Also, sustainable rural development policies should focus on helping rural households to reduce their tendency to depend on family labour for on farm activities while enhancing welfare of aging members in the society.

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