

# Land Market Participation and Poverty Status of Farming Households in Oyo State, Nigeria

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## Abstract

*Land plays important roles in poverty reduction. These roles cannot be achieved unless issues of access to land is addressed, in particular, access to land through markets. Therefore, this study examined the effect of agricultural land market on poverty status among farmers in Oyo state, Nigeria. Data collected from 200 farmers, using multistage sampling procedure, were analysed through descriptive statistics, Foster-Greek-Thorbecke (FGT) measure and Probit regression methods. The mean per capita household expenditure and poverty line were ₦4,152.31 and ₦2,768.21 respectively; 31.5% of the farmers fell below the poverty line and 8.86% of the poverty line was required to escape from the poverty group. Also, 61.2% of the farm plots cultivated by farmers were acquired through land market, while 76.5% of those acquired by land markets were through rent. Also, 95.1% of the plots involved in land market were held by migrant (non-natives) farmers and the plots obtained through market were used mainly for crop production (57.8%). Land market participation significantly decreased the probability of being poor by 15.1% at 5% significance; sex, immigrant status, farming experience, secondary occupation, and size of plot also significantly decrease the probability of being poor by 24.3%, 53.2%, 1.8%, 5.5%, 5.0% at 1.0% significance respectively. Farmers participated actively in land market, especially migrant farmers, for agricultural purposes, especially crop farming, which in turn reduces the likelihood of being poor. Policy efforts aimed at regulating land market transactions would be a potent tool in alleviating poverty amidst farmers.*

**Keywords:** Agricultural land market, Crop farming, Land distribution, Migrant farmers, Rural Poverty.

## Introduction

The role of land in all aspects of life cannot be overemphasized. Land serves as a source of livelihood, especially to the poor; it serves as the basis for the production of food, provision of shelter, and utilities for the manufacture of foods. Land, arguably, is the oldest form of collateral and is still very attractive to lenders (Ali *et al.*, 2013). The ownership of land has great impact on its use, especially among the rural dwellers that depend basically on agriculture as their main source of livelihood. Today, land can be held and the rights to land transferred. As a result of this, excessive

transaction costs and fragmentation of land into uneconomic size tracts have come to feature greatly, especially in the rural areas, thus increasing the unavailability of land for agricultural production. It is important to note that Olatomide (2012) identified lack of access to land as one of the key determinants to poverty.

According to International Fund for Agricultural Development (IFAD, 2012), more than two-thirds of the population in developing countries live in rural areas. Nigeria, being a developing country, has been described in the United Nation's report (2016) on Nigeria's Common Country Analysis, as poor and

struggling with inequality. According to the report, 80 million out of the 175 million of her population are living below the poverty line, whereas, her population is still projected to hit approximately 200 million by 2019 and over 400 million by 2050, making her one of the top five most populous countries in the world.

The common country analysis report further revealed that poverty and hunger are high in rural areas and these actually cut across the six geo-political zones of Nigeria, with prevalence ranging from approximately 46.9% in the Southwest to 74.3% in Northwest and Northeast. Lennart (2007) however, posited that secure access to land can reduce vulnerability to hunger and poverty. But for many of the rural dwellers in developing countries, access to land is becoming more tenuous than ever; competition for land has become fiercer and keener. Actually, as a result of rising world population, the need to address global food safety and security, climate change, declining soil fertility, fuel security, and pressure for land, increases daily (Mabikke, 2014).

Rural residents derive their income from agricultural production. Based on this, improvements in their ability to access land, make productive use of it and undertake land-attached investments, are likely to improve their immediate welfare and general livelihood. While there is agreement about the need to increase land access to improve households' productive capacity and their welfare, there is less consensus on policies required to accomplish this goal, in particular the role of markets in doing so.

Nigeria, according to Butler (2009), has a long history of private land markets. Land market exists when and wherever there is exchange of rights on land for agreed amounts of money or services rendered (Idowu and

Alawode, 2007). According to Ali *et al.* (2013), the issue of formal land acquisition came up with highly controlled urbanization by the colonial government, and later by the Federal Government of Nigeria. It has been found in Ondo State, South-western Nigeria that farmland is ordinarily acquired mainly by inheritance among the native farmers while acquisition is mainly by lease among migrant farmers (Idowu and Alawode, 2007).

Baland *et al.* (2007) established an inverse relationship between farm size and land productivity and posited that the inverse relationship between the two suggests that land market ought to be relatively egalitarian agrarian in structure. However, when the optimal farm size is large, the expectation is that land distribution gradually evolves towards a polarized pattern. There is concern that through distress sales or seizure of mortgaged land, the activation of land market is likely to cause increased land concentration at the expense of smallholders. Dubuisson (1998), in contrast to this, found that land market transactions helped to mitigate, rather than accentuate inequality in land distribution.

Nearly half of the world's population; more than 3 billion people, live on less than \$2.50 a day; more than 1.3 billion live in extreme poverty-less than \$1.25 a day (World Bank, 2009). The continual increase in population has led to increase in the poverty status of the people. The problem of poverty and how to alleviate it have been of concern to both private and government organizations in the world today, but land market has not received sufficient attention as an option in alleviating poverty. This is perhaps because both colonial and post-colonial policy makers believed that market transaction in land had no place within African societies (Kironde, 2000).

Land plays an important role in food security and poverty reduction, which cannot be achieved unless issues of access to land, security of tenure and the capacity to use land productively and in a sustainable manner are addressed. The International Food Policy Research Institute (IFPRI) 2005 report on Vision 2020 pointed out that food security solution that fails to address natural resource issues effectively would not be sustainable. Adequate knowledge of land transactions is highly essential for appropriate policy formulation as this will equip policymakers with timely and relevant information that will aid the targeting of interventions. It would also be the rationale for the redistribution or redesigning of market oriented land policy regulations which will facilitate the opportunity to transfer land from rich but less capable to the poor but capable households to cultivate.

From the foregoing, the net impact of land transactions on the distribution of land is *a priori* indeterminate since there are different effects running into opposite directions. It is therefore important to decide whether land can be distributed more equally between those farmers with large areas of land and the landless through land market, and how this affects/influences rural poverty. It is on this background that this study analysed the relationship between land market and the poverty status of farming households in the study area. The specific objectives were to:

- Analyse the incidence, depth and severity of poverty among rural farming households.
- Examine the types of transactions carried out on agricultural land.
- Analyse the effect of land market on poverty status of farmers.

## **Materials and Methods**

This study was carried out in Oyo state, Nigeria. Multistage sampling procedure was used to select respondents in the study area. The first stage involved purposive selection of three Local Government Areas (LGAs); Ido, Oluyole and Ona-Ara, based on the presence of migrant (non-native) farmers in large numbers. The second stage involved the purposive selection of ten villages from Ido LGA (due to higher concentration of migrant farmers than the remaining two LGAs) and five villages from each of the other two LGAs, summing up to twenty villages. The third stage involved random selection of 10 farmers from each village, giving a total of 200 respondents. Both native and non-native farmers were randomly sampled in the selected villages.

## **Analytical techniques**

### ***Descriptive analytical approach***

Descriptive analytical methods such as mean, standard deviation, frequency counts, percentages, and cross-tabulation were used to analyse the relevant socio-economic variables of the respondents and to examine the types of transactions on agricultural land.

### ***Foster-Greek-Thorbecke (FGT) approach***

Poverty lines were constructed to determine the poverty status of respondents. The households' total expenditure on food, non-food items and general upkeep were used in the classification of households into poor and non-poor through the poverty lines. First, monthly household expenditure was expressed in per capita terms, that is, Monthly Per Capita Household Expenditure (MPCHHE), to adjust for household size, by dividing each household's monthly expenditure by the household size.

Then, the Mean Monthly Per Capita Household Expenditure (MMPCHHE) was arrived at by the summation of all MPCHHE and dividing it by the total number of households. MMPCHHE allows for two poverty lines. The upper poverty line is equivalent to two-thirds of the MMPCHHE and the lower is equivalent to one-third of the MMPCHHE (Foster *et al.*, 1984). Hence, the core poor households are those with MPCHHE less than one-third MMPCHHE, moderately poor have MPCHHE less than two-thirds MMPCHHE but higher than one-third MMPCHHE, and the non-poor have MPCHHE greater than two-thirds MMPCHHE.

Foster-Greer-Thorbecke (FGT) weighted index was used for the quantitative poverty assessment among the households in the study

area. The FGT poverty measure, which is decomposable by groups and sensitive to the depth of poverty within the poor, were used to assess the incidence (headcount ratio), depth and severity of poverty among the rural households in the study area. The headcount ratio measures the ratio of the number of poor individuals or simply measures the poverty incidence (that is, the percentage of the poor in the total sample). The poverty gap estimates the intensity of poverty based on the extent of expenditure shortfalls below the poverty line by the poor in the sample, or simply measures the amount of money it would take to raise the per capita expenditure of the average poor person up to the poverty line.

The General Foster, Greer and Thorbecke (FGT) poverty index ( $P_{\alpha i}$ ) can be expressed as:

$$P_{\alpha i} = \frac{1}{N} \sum_{i=1}^q \left( \frac{z - y_i}{z} \right)^{\alpha} \dots\dots\dots (1)$$

When:

$$a = 0, \text{ poverty incidence or headcount } P_0 = \frac{1}{N} \sum_{i=1}^q \left( \frac{z - y_i}{z} \right)^0 = \frac{q}{n} \dots\dots\dots (2)$$

$$a = 1, \text{ poverty gap or depth } P_1 = \frac{1}{N} \sum_{i=1}^q \left( \frac{z - y_i}{z} \right)^1 \dots\dots\dots (3)$$

$$a = 2, \text{ poverty severity } P_2 = \frac{1}{N} \sum_{i=1}^q \left( \frac{z - y_i}{z} \right)^2 \dots\dots\dots (4)$$

$\alpha$  = degree of poverty aversion (0, 1 and 2)

$n$  = number of farmers in a group

$q$  = the number of poor farmers

$z$  = poverty line (two-third of Mean Per Capita Household Expenditure (MPCHHE) of the farmers)

**Probit regression approach**

In order to analyse the relationship between land market and poverty status of the farming households in the study area, Probit regression technique was used. Probit model is a normal cumulative distribution function. The model is estimated using Maximum Likelihood Estimates (MLE) approach, allowing it to overcome the difficulties arising from the non-normality and heteroskedastic variance of the error terms, if Ordinary Least Square regression were to be carried out.

In explicit form:

$$\text{Probit Model, } Y = \alpha + \beta Q_i + \delta X_i + aL + U_i$$

Where,

Y = Poverty Status (1=Poor, 0=Otherwise)

Q<sub>i</sub> = Farmers Characteristics

Q<sub>1</sub> = Sex (1=male, 0=Female)

Q<sub>2</sub> = Age (Years)

Q<sub>3</sub> = Formal Education (1 = Yes, 0 = Otherwise)

Q<sub>4</sub> = Immigrant Status (1=Non-native, 0=Native)

Q<sub>5</sub> = Household Size (No. of people living in household)

Q<sub>6</sub> = Farming Experience (Years)

Q<sub>7</sub> = Secondary Occupation (1=Yes, 0=Otherwise)

Q<sub>8</sub> = Marital Status (1=Married, 0=Otherwise)

Q<sub>9</sub> = Number of Years Spent in the Community

X<sub>i</sub> = Plot Characteristics

X<sub>1</sub> = Size of Plot (Hectares)

X<sub>2</sub> = Purpose of Plot (1 = Crop Farming, 0 = Otherwise)

L = Land Market Participation (1=Farmer participates in land market, 0= Otherwise)

U<sub>i</sub> = Error term

**Results**

**Socio-economic characteristics of respondents**

Table 1 shows that the average age of the respondents was 46 years, with the highest proportion (75.5%) of the farmers falling between 30 and 60 years of age. Most of the farmers were male (69.0%) and were married (87.5%). The average household size was three,

**Table 1:** Distribution of respondents' socio-economic characteristics

Variable	Frequency	Percentage (%)
<b>Age</b>		
< 30	20	10.0
<b>30-45</b>	<b>75</b>	<b>37.5</b>
46-60	76	38.0
> 60	29	14.0
Mean	46.16±12.8	
<b>Sex</b>		
Male	138	69.0
Female	62	31.0
<b>Marital status</b>		
Single	3	1.5
Married	175	87.5
Divorced	3	1.5
Separated	6	3.0
Widowed	13	6.5
<b>Household size</b>		
<5	89	44.5
5-10	108	54.0
>10	3	1.5
Mean	2.97±1.8	
<b>Immigrant status</b>		
Native	82	86.5
Non-native	118	13.5
<b>Nature of farming</b>		
Full time	173	41.0
Part time	27	59.0
<b>Educational status</b>		
No formal education	96	48.0
Adult education	1	0.5
Primary education	66	33.0
Secondary education	33	16.5
Tertiary education	4	2.0
<b>Farming experience</b>		
<10	29	14.5
10-20	90	45.0
21-30	38	19.0
31-40	29	14.5
>40	14	7.0
Mean	21.43	
n=200		

while 55.5% had at least 5 members in their households. Non-native (migrant) farmers constituted 59.0% of the respondents. Most (86.5%) of the farmers were full-time farmers, 48% of the farmers had no formal education but the highest proportion (45.0%) had between 10 and 20 years of farming experience, and average farming experience was 21 years.

### Poverty Profile of Respondents

The total per capita household expenditure (TPCHHEXP) was found to be ₦830,461.91 and the mean per capita household expenditure (MPCHHEXP) was found to be ₦4,152.31 (Table 2). The poverty line, which represents two-thirds of the mean per capita household expenditure, was estimated at ₦2,768.21; one-third of the mean per capita household expenditure was estimated as ₦1,384.10.

**Table 2:** Poverty status of respondents using poverty indices, category of poverty and Expenditure variables

Poverty Index	Poverty Index Value	Percentage
<b>Poverty Indices</b>		
Incidence of poverty ( $P_0$ )	63	31.5
Poverty depth ( $P_1$ )	0.0886	8.86
Severity of Poverty ( $P_2$ )	0.0357	3.57
<b>Poverty status</b>		
	<b>Frequency</b>	<b>Percentage</b>
Non-poor	137	68.5
Core-poor	7	3.5
Moderately poor	56	28.0
<b>Expenditure</b>		
		<b>Amount</b>
TPCHHEXP		₦830,461.91
MPCHHEXP		₦4,152.31
2/3 of MPCHHEXP (Poverty Line)		₦2,768.21
1/3 of MPCHHEXP		₦1 384.10
TPCHHEXP Total per capita household expenditure		
MPCHHEXP Mean per capita household expenditure		

Given the poverty line, the incidence of poverty was 31.5%, while the poverty depth or gap ( $P_1$ ) was estimated at 0.0886, and the severity or intensity of poverty ( $P_2$ ) was 0.0357. More than two-thirds (68.5%) of the respondents were non-poor while less than one-third (31.5%) were poor. Only 3.5% of the respondents were in the core (extremely) poor category. Also, results show that 28.0% of the respondents were moderately poor.

### Land transaction among respondents

Analysis of land transactions was done at plot level. Table 3 shows various forms of land acquisition methods in the study area. More than 61.2% of the respondents acquired their land through land market or transaction, which is acquiring through monetary exchange or compensation in kind. The identified forms of land acquisition that are transaction based are purchase, rent and lease. More than 46.8% of plots were acquired through rent, while only 9.1% and 5.3% were acquired through

**Table 3:** Agricultural land acquisition and transactions

Land acquisition/transaction	No of plots	Percent
<b>Means of land acquisition</b>		
Inheritance	167	38.1
Gift	3	0.7
Purchase	40	9.1
Rent	205	46.8
Lease	23	5.3
Total	435	100.0
<b>Plots involved in Land market</b>		
Yes	268	61.2
No	170	38.8
Total	438	100.0
<b>Types of transactions</b>		
Purchase	40	14.9
Rent	205	76.5
Lease	23	8.6
Total	268	100

**Source:** Data Analysis, 2016

purchase and lease, respectively. Of the plots acquired through market, 76.5% were acquired through lease.

**Land market participation by immigrant status of respondents and use of plots**

Table 4 shows that 95.1% of the plots involved in land market were held by migrant (non-

**Table 4:** Land market participation by immigrant status of respondents and use of plots

Plot involved in Land Market	Number of plots	Percentage
<b>Immigrant status</b>		
Non-native	255	95.1
Native	13	4.9
<b>Use of plot</b>		
Crop farming	155	57.8
Livestock farming	13	4.9
Accommodation	84	31.3
Fallow	16	6.0

Source: Data Analysis, 2016; n=268

natives) farmers while only 4.9% of the plots were held by non-natives. Also, the plots obtained through market were used mainly for crop production (57.8%) and accommodation (31.3%), as well as for livestock rearing (4.9%) and some were even allowed to fallow (6.0%).

**Effect of land market participation on poverty status of respondents**

Results from Table 5 shows that land market status had negative relationship with poverty status at 5% level of significance. Also, the use of plots for crop farming by farmers had significant negative relationship with the poverty status of the farmers at 10%. Other variables that affect poverty status of farmers were also considered. Sex of respondents negatively affects their poverty status significantly at 1%. Age of respondents had positive relationship with their poverty status at 1% level of significance. Results also show that formal education had negative relationship with poverty status at 10% level of significance.

The immigrant status of the respondents, the number of years spent in farming, having

**Table 5:** Probit regression results on effect of land market participation on poverty status of respondents

Variable	Marginal Effect	Coefficient	Z	Standard Error	P> z
Land market status	-0.151	-0.644**	-2.280	0.283	0.023
Purpose of plots	-0.074	-0.301*	-1.640	0.183	0.100
Sex	-0.242	-0.816***	-3.480	0.234	0.001
Age	0.019	0.077***	5.450	0.014	0.000
Formal education	-0.010	-0.041*	-1.720	0.024	0.085
Immigrant status	-0.531	-1.833***	-5.390	0.340	0.000
Household size	0.041	0.163***	3.950	0.041	0.000
Farming years	-0.018	-0.072***	-3.620	0.201	0.000
Secondary occupation	-0.054	-0.216***	-3.000	0.072	0.003
Marital status	0.025	0.103	0.410	0.250	0.679
Years spent in community	0.001	0.005	0.480	0.010	0.629
Size of plot	-0.050	-0.199**	-2.010	0.099	0.044

\*\*\*, \*\*, \* represent 1%, 5%, 10% significance level respectively

secondary occupation and size of plot affect their poverty status negatively at 1% level of significance, while household size positively affect poverty status of the respondents at 1% level of significance.

## Discussion

Majority of the farmers were in their active age, and were likely to possess needed strength to carry out effective farm operations. Male dominance among the farmers could be due to the labour intensive nature of farming activities, majority were married showing that they were settled in the area for agricultural activities. The presence of a high proportion of non-native (migrant) farmers implies an influx of migrants into the area and their involvement in agricultural activities. Majority were full-time farmers, indicating extensive farming activities in the area. High percentage of farmers had no formal education which could have had a negative effect on their ability to adopt and use new innovations in farming, but had relatively high years of farming experience, which is expected to boost their farming activities. These findings are in agreement with findings of Idowu *et al.* (2007), and Idowu and Alawode (2007) that there were high proportion of migrant farmers who took advantage of agricultural activities in rural areas in Ondo State.

From the analysis of poverty status, most of the respondents were non-poor, and the poverty depth or gap implies that those regarded to be in the poor category require ₦247.00 to escape from the poverty group. The respondents who were in the core (extremely) poor category could not afford to spend ₦1,384.10 in a month for the basic necessities of life while those that were moderately poor could spend above ₦1,384.10

but below ₦2,768.21. This is similar to the approach used by Idowu *et al.* (2011), and Ezeh and Nwachukwu (2010), in the studies “Non-farm Income Diversification and Poverty among Rural Farm Households in Southwest Nigeria” and “Micro level Impact of National Fadama II project on rural poverty in Imo State”, respectively. This finding was also in line with Akuboh (2015) who found that 64% of the farmers were poor, and that ₦255.89 was required to move an average poor person to the poverty line. The results can also be compared with the poverty gap index of 0.12 for southern-eastern geographical zone as reported by Omonona (2010) in a study on quantitative analysis of rural poverty in Nigeria. The result is also comparable to the findings of Asogwa *et al.* (2012) who reported a poverty gap of 0.27 and poverty severity of 0.15 in a study on poverty and efficiency among farming households in Nigeria.

The high percentage of plots being used by non-native farmers imply that there is an active land market in the area. Analysis of land transactions indicates that farmers participated more in land transactions through rent than purchase and lease considering that many of the respondents were migrants (non-natives) farmers. Almost all the plots held by migrant farmers were obtained through market, indicating that they gained access to land, mainly for agricultural purposes, through land market. This agrees with the findings of Idowu *et al.* (2007), while analysing agricultural land market in Ondo state of Nigeria, that non-natives participated more in land market to acquire land for agricultural purposes. Idowu *et al.* (2007) established that most natives acquired land for agricultural purpose through inheritance. Also, Claude (2011) in assessing the determinants of land rental markets in rural Rwanda indicated that households often



combine buying and renting of land to adjust their land holding to the optimal farm size, and that land rental markets reallocate land between households with different management abilities and allow a consolidation of land use, as land ownership in Rwanda is very fragmented.

Marginal effect estimates showed that participating in land market significantly decreases probability of being poor, implying that the older farmers are, the more they are likely to be poor.

This finding agrees with Imran (2014) who found that 64% of the plots were involved in land market and that land market participation increases food production in Ibarapa Area of Oyo State. In the same vein, using plots of land for crop farming significantly decreases the probability of a farmer being poor. This suggests that crop farming is a rewarding livelihood activity in the study area. This is in line with the study of Agboola (2016) who established that land market participation and crop farming improves the welfare of farmers in Oyo State.

Also, male respondents had lower probabilities of being poor. This could be due to the fact that males can perform more labour intensive activities, and could have easier access to credit facilities than females. Therefore, males are able to generate more output. Age of respondents had significant positive relationship with their poverty status; increase in the age of farmers increased their probability of being poor, implying that the older farmers were, the more they are likely to be poor. This could be attributed to declining strength and agility accompanying ageing.

Education of rural farmers is a factor that must be taken into consideration in poverty alleviation. Education enables the farmers to fully appreciate, as well as use new technologies made available to them, which ultimately will

bring about higher levels of productivity. This agrees with Alawode *et al.* (2017) who posited that increase in years of education reduces the chances of being poor. Also, being a non-native farmer decreased the probability of being poor as the migrant farmers held more than half of the plots. Also, descriptive evidence shows that non-native farmers participated more in land markets. Since participation in land market decreased the likelihood of respondents being poor, this could explain why non-native farmers were less likely to be poor.

Household size (especially with more dependents) is poverty enhancing (Abdullahi, 2016), as it tends to reduce per capita expenditure of the households. An additional year spent in farming reduced the probability of being poor. This could be attributed to experience gained, which in turn increases the level of productivity. Farmers with secondary occupation (other livelihood activities) had lower probabilities of being poor since they could generate more income from these activities (Abdullahi, 2016; Alawode *et al.*, 2017). Increase in plot size reduces the likelihood of being poor. This could be attributed to the fact that the bigger the plot, the more the agricultural activities that could be performed on it.

## **Conclusion**

Based on the findings of this study, it can be concluded that farmers participated actively in land market, especially non-native (migrant) farmers, acquiring land from native farmers for agricultural purposes, especially crop farming, which in turn reduces the likelihood of being poor. Land market has strong significant relationship with poverty status of the households, and greater participation in

land market for agricultural purposes will reduce the likelihood of being poor. Policy efforts aimed at regulating land market transactions would be a potent tool in alleviating poverty amidst farmers as this will encourage the dynamic land markets. Having secondary occupation as an alternative source of income was also found to be poverty reducing, therefore, poverty alleviating programmes should target education for farmers by empowering them with skills needed for multiple streams of income.

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