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Full Length Research

Effect of Microfinance on Poverty Status among Farming Households in Oyo State, Nigeria.

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This study examined the effect of microfinance on poverty status among farming households in Oyo State, Nigeria. Multi-stage sampling technique was used to obtain data from 160 farming households that were selected from 3 Local Government Areas in Oyo State. Descriptive analysis, FGT and Regression analysis were used to analyze the data. Results on socio-economic characteristics reveals that about 50 percent of the respondents were 40 years and below, and 77.50 percent of them have been married. Also, 58.13 percent had between 5 and 8 persons as their household size while 38.75 percent indicated less than or equal to 2 hectares of land as their farm size. It was reported that 59.38 of the respondents did not have more than primary education, indicating that the respondents were poorly educated while 70.01 percent of them had less than or equal to 15 years of farming experience. The poverty line was taken as the 2/3 of the yearly per capita income and thus the number of households below the poverty line was 58, that is, 36.25% of the respondents while the non-poor was 102 or 63.75% of the respondents. The daily per capita income was ₦1918.11 and the yearly per capita income was ₦700108.98 while the 2/3 yearly per capita income or poverty line was ₦466739.32. The study observed that farming households were 63.75% non-poor due to the contribution of income from other diversified activities to the households. The regression estimate for the microfinance users indicates that educational level, ownership of assets and income source were statistically significant at 1 percent, indicating that these variables determine poverty among the microfinance users in the study area. Also, regression estimate on the microfinance non-users among the farming households revealed that educational level, income source, farm size and interest charged in naira were all statistically significant at 1 percent. These variables influenced poverty status of non-users of microfinance. It is therefore recommended that provision of educational programs and accessible credit schemes to facilitate the establishment of farm and off-farm businesses should be encouraged.

Keywords: Microfinance, Poverty, FGT, Regression Analysis.

INTRODUCTION

Access to agricultural microcredit remains a critical challenge to smallholder farmers in many developing countries including Nigeria. This is because smallholder farmers often require small loans which are difficult to administer while majority of them also lack the needed collateral to be able to borrow from formal sources. Where collateral requirements are met, the sheer size of potential borrowers always seems to exclude others from borrowing. Consequently, smallholder farmers have been marginal participants in the credit market in many developing countries. As noted by Dittoh (2006), access to credit is the topmost priority of smallholder farmers in Southwestern Nigeria where agriculture is the main economic activity.

The agricultural sector in most developing countries including Nigeria contributes immensely to employment, income generation, gross domestic product (GDP), foreign exchange earnings, and food security. The sector plays a pivotal role in the rural economy and economic development in general. The important role of agriculture in the economies of developing countries calls for an increase in investments in the sector to increase production.

As reported by Reyes (2012), rural development and, in particular, farm productivity, can be influenced by several factors including access to credit. Agricultural

credit accelerates agricultural modernization and economic development. It also creates and maintains adequate flow of inputs thus increasing efficiency in farm production (Nouman et al., 2013).

As noted by Omonona et al. (2010), access to credit enhances the production efficiency of small scale farmers thereby reducing rural poverty and food insecurity. Access to credit influences farm productivity since credit-constrained farmers are more likely to use lower levels of inputs in production compared to those who are not. Improving access to credit therefore has the capacity to facilitate optimal input use leading to a positive impact on productivity.

Smallholder farmers are defined as those marginal and sub-marginal farm households that own and/or cultivate less than 2.0 ha of land (Singh et al., 2002). According to Nwanze (2011) there are about 500 million smallholder farms worldwide, providing livelihoods for more than 2 billion people. These small farms produce about 80% of the food consumed in Asia and sub-Saharan Africa, showing the importance of the small farm sector to agricultural and economic development in many developing countries.

The small farm holdings in most developing countries contrast significantly with what pertains in most developed countries. While farms are becoming fewer and bigger in developed countries, they are becoming more and smaller in most developing countries. Low investment in the agricultural sector has limited farm expansion in most developing countries. However the main determinant of farm size according to is the rise of off-farm wages. As noted by the authors, a rise in off-farm wages drives farm size up. What determines farm sizes is the number of people willing to engage in farming as well as the opportunity for good paying jobs outside the farm sector.

In places where there are many people to cultivate the land but fewer opportunities for good paying jobs outside the farm sector, we have labour-intensive and land-saving agriculture. Farm sizes therefore tend to be smaller. In every generation, farms split to accommodate new children.

On the contrary, in places where good paying job opportunities exist outside farming, fewer people tend to farm larger land areas using labour-saving technologies like machinery and inorganic chemicals. The structural development in agriculture in both types of economies may also be accounted for by the opportunity cost of labour and capital.

Analysis of the factors influencing smallholder farmers' access to microcredit has been carried out by various researchers such as Sebopetji and Belete (2009), Sanusi and Adedeji (2010), Duy et al. (2012), Ibrahim and Aliero (2012), Chauke et al. (2013) and Nouman et al. (2013). Very few researchers such as Duy et al. (2012) have analysed access to credit taking into account the possible presence of selectivity bias arising from non-random sampling of borrowers and non-borrowers. Similar analyses are difficult to find for Ghana and most sub- Saharan countries.

Despite all the different policies that the Nigerian Government has put in place to alleviate poverty, it is obvious that people are still trapped in the vicious cycle of poverty. In Nigeria, credit has been recognized as an essential tool for promoting small and micro enterprises but only about 50% of these have access to credit (Olaitan, 2001).

METHODOLOGY

Study Area: The study was conducted in Oyo state, Nigeria. Oyo state was created on the 3rd of February, 1976 with the capital located in Ibadan. Oyo state has its coordinate located on 8° 00´N 4°00´E. Oyo state was carved out of former western state and originally included Osun state which split off in 1991. According to National Population Commission (2006), Oyo state has a population of 5,591,589 with a total land area of 28,454km^2. Oyo state is bounded in the North by Kwara state, in the East by Osun state, in the South by Ogun and in the West by partly Ogun and partly Republic of Benin. Oyo state consists of thirty three Local Government Areas and has average daily temperature ranging between $25°C \; and \; 35°C$ almost throughout the year. The climate in the state favours cultivation of crops like maize, yam, cassava, millet, cocoa, rice etc. There is existence of several microfinance banks which offers complete range of financial services ranging from N30, 000 to N1, 000, 000 to micro, small and medium scale/sized enterprises in Oyo state.

Sources of Data Collection: Both primary and secondary data were used in the study. A well-structured questionnaire was used to obtain relevant information from the respondents. The structured questionnaire were used to acquire obtain data on socio-economic variables such as age, sex, marital status, family size, farm size, level of education etc. Access to microcredit (Amount of loan collected, annual farm income etc) that will be used to analyze the effect of microfinance on the poverty status of the farming households in the study areas while secondary data will be obtained through journals, records of past studies, publications from World Bank, National Bureau of Statistics etc.

Sampling Technique and Sample size: Three Local Government Areas were selected among the rural based Local Government Areas around Ibadan which is the capital of Oyo state, using random sampling technique. The three Local Government Areas are, Akinyele, Ido and Egbeda, because of the large farming activities in

the area as well as their closeness to the city where most of the microfinance institutions are located. Random sampling technique was used in selecting the farmers in the study area to enable the farmers have equal chance of being selected. Sixty farmers were randomly selected each from Akinyele and Egbeda Local Government Areas respectively because the majority of the inhabitants in the areas were predominantly farmers while 40 farmers were selected in Ido Local Government Area as a result of fewer number of the inhabitants that engaged in farming activities and this made a total number of 160 respondents for the study.

Method of Data Analysis: A combination of analytical tools were employed in this study. These included; descriptive statistics (e.g. means, frequencies, percentages), that was used to examine the socio-economic characteristics of the respondents.
Foster, Greer and Thorbeeke (FGT) will be used to analyze the depth and severity of poverty among the farming households. In analyzing poverty, different approaches to the measurement of poverty such as poverty gap, severity of poverty and poverty head count ratio will be adopted and are based on FGT mathematical expression. Foster, Greer and Thorbeek (FGT) indices: These are based upon the existence of households which are classified according to income estimated directly or through consumption expenditure. The mathematical expression of FGT is stated as follows:

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

Where;
n = total number of households in population
q = the number of poor households
Z = the poverty line
y_i = household per capita expenditure
α = Poverty aversion parameter and takes on value 0, 1, 2

$\left(\frac{Z-y_i}{Z}\right)$ = Proportionate shortfall in expenditure below the poverty line.
α takes on value 0,1,2 to determine the type of poverty index.
When α = 0 in FGT, the expression reduces to

$$P_0=\left(\frac{1}{n}\right)q=\left(\frac{q}{n}\right) \quad \text{---------- (2)}$$

This is called the Headcount Ratio (Poverty incidence) describing the proportion of the population that falls below the poverty line.
When α =1 in FGT, the expression reduces to

$$P_1=\frac{1}{n}\sum_{i=1}^{q}\left(\frac{Z-y_i}{Z}\right) \quad \text{---------- (3)}$$

And this is called the Poverty Gap (depth of poverty) which measure how far below the poverty line the household has fallen.
When α =2 in FGT, the expression becomes

$$P_2=\frac{1}{n}\sum_{i=1}^{q}\left(\frac{Z-y_i}{Z}\right)^{2} \quad \text{---------- (4)}$$

This is called Poverty Severity Index which measures the degree of poverty among the poor households. This index weighs the poverty of the poorest individual more heavily than those just slightly below the poverty line. It adds to the Poverty Gap ratio an element of unequal distribution of the poorest individual's income below the poverty line.

Regression Analysis

Multiple regression analysis is employed in study involving more than one or two variable. The regression equation describes the relationship between a variable known as dependent variable and other set of variables refers to as independent variables. Multiple regression analysis will also be used to examine the effect of microfinance on poverty reduction among farming households in the study area.
The general form of the model is explicitly stated as:
Y = β0 + β1 X1 + β2 X2 + β3 X3 + β4 X4 + β5 X5 …… βnXn + ε
Where:
Y = Poverty status of respondents
β = Parameters
X = explanatory or independent variables
For instance;
X_1 = Age of respondents in years
X_2 = Educational level of household head in years spent in school
X_3 = Ownership of assets in naira
X_4 = Household size in numbers
X_5 = Years of farming in years
X_6 = Size of farm in hectares
X_7= Access to microcredit (dummy variable)
X_8 = Income sources (dummy variable)
X_9 = Interest charged in naira
ε = Error term

RESULTS AND DISCUSSIONS

Socio-Economic Characteristics of the Respondents

Table 1 reveals the socio – economic characteristics of the respondents. From the table, the age distribution

Table 1: Socio-economic Characteristics of Respondents

Variables	Frequency	Percentage
Age (Years)		
≤ 20	13	8.13
21-40	67	41.87
41-60	62	38.75
61 years and above	18	11.25
Total	160	100
Marital status		
Single	22	13.75
Married	124	77.50
Widow/Divorced	14	8.75
Total	160	100
Household size		
1-4	52	32.50
5-8	93	58.13
8 members and above	15	9.37
Total	160	100
Farm size		
0.01-2.00	62	38.75
2.01-4.00	87	54.38
4.01 and above	11	6.87
Total	160	100
Educational status		
No formal schooling	39	24.38
Primary education	56	35.00
Secondary school education	44	27.50
Tertiary education	21	13.12
Total	160	100
Farming experience		
1-10	89	55.63
11-15	23	14.38
16-20	19	11.87
21 years and above	29	18.12
Total	160	100
Primary Occupation		
Farming	107	66.88
Civil Service	29	18.12
Artisan	24	15.00
Total	160	100

Source: Field Survey, 2016

of the respondents showed that the respondents were relatively young in age where about 50 percent of them were 40 years and below, and 77.50 percent of them have been married. About 58.13 percent had between 5 and 8 persons as their household size while 38.75 percent of them indicated less than or equal to 2 hectares of land as their farm size. It was reported that 59.38 of the respondents did not have more than primary education, indicating that the respondents were poorly educated while 70.01 percent of them had less than or equal to 15 years of farming experience. Their major primary occupation was farming as 66.88 percent of reported.

Household Income Analysis

The household income analysis of the farming households is presented in Table 2. The results revealed that income from other sources (off-farm activities) contributed about 62.21% to total farming households' income while agricultural activities contributed about 37.79% to the household income. The analysis of the income from the diversified activities revealed that income from civil service and artisanal jobs accounted for about 52.97% and 12.88% respectively of the income from the diversified activities.

Table 2: Household Income Analysis

Income Sources	Mean (₦)	Std. Deviation (₦)	Percentage
Off-farm Activities			
Civil Service	1442332.70	264870.20	52.97
Trading	91259.06	146505.86	3.35
Artisanal Jobs	350676.20	94744.98	12.88
Paid Labour	64969.2	23640.41	2.40
Driving Taxi	165326	63528.17	6.07
Okada Driving	149143	49498.11	5.48
Rentage	143866	67111.40	5.28
Transfers	184045	50667.34	6.76
Gifts	19557	6075.12	0.07
Property Sales	110887	34276.20	4.07
Total Diversified Income	2722061.12	213262	62.21
Agricultural Activities			
Farm Output	1653620	318470	37.79
Total Household Income	4375681.12	378510	

Source: Field Survey, 2016

The Poverty Status of Farming Households

The poverty status analysis of the farming households is presented in Table 3.The poverty line was taken as the 2/3 of the yearly per capita income and thus the number of households below the poverty line was

Table 3: Poverty Status Analysis of Farming Households

Income	Mean	Std Deviation
Household size	6.25	2.61
Household size	4375681.12	378510
Yearly Per Capita Income	700108.98	60561.6
Daily Per Capita Income	1918.11	165.92
2/3MPCI	466739.32	
Non Poor	63.75%	
Poor	36.25%	

Source: Field Survey, 2016

Table 4: Poverty Incidence, Severity and Depth Analysis

Poverty Incidence	Total Sample Size (%)	Microfinance Users (%)
Poverty Incidence	36.25	19
Poverty Depth	12	7
Poverty Severity	6	4
Non Poor	63.75%	165.92
Poor	36.25%	

Source: Field Survey, 2016

58, that is, 36.25% of the respondents while the non-poor was 102 or 63.75% of the respondents. The daily per capita income was ₦1918.11 and the yearly per capita income was ₦700108.98 while the 2/3 yearly per capita income or poverty line was ₦466739.32. The study observed that farming households were 63.9% non-poor due to the contribution of income from diversified activities to the households' income.

Poverty Incidence, Severity and Depth

Incidence of poverty or poverty head count ratio is the proportion of household whose per capita expenditure is below the poverty line. Depth of poverty is the percentage of the expenditure required to bring each household who are below the poverty line up to the poverty line while severity of poverty focuses on the

degree of dispersion in the distribution of household lying below a predetermined poverty line.

Determinants of Poverty among the Farming Households

Table 5: Result of Regression Analysis

Variables	Users of Microfinance Parameters	Non-users of Microfinance Parameters
Age	-0.586 (0.564)	-0.013 (0.041)
Educational Level	-0.802(0.203) ***	0.038 (0.009) ***
Household size	0.338 (0.229)	0.001 (0.015)
Ownership of Assets	-1.477(0.325) ***	0.008 (0.015)
Access to Microcredit	-0.044 (0.027)	-0.353 (0.097)
Income Source	-0.916(0.215) ***	0.216 (0.034) ***
Farming Experience	-0.044 (0.047)	0.009 (0.012)
Interest Charged	0.249(0.207)	0.305 (0.015) ***
Farm Size	-0.046(0.204)	-0.034(0.009) ***
Constant	1.319 (1.375)	0.128(0.009)
R^2	0.642	
Adjusted R^2	0.421	

*** represents 1% level of significance
Note: Figures in parentheses are standard error
Source: Field Survey, 2016

Table 6: Distribution of Constraints Faced in Accessing Microcredit

Constraints	Frequency	Percentage
High interest rate	139	77.22
High risk and uncertainty	117	65.00
Administrative bottlenecks	113	62.77
Failure in meeting terms of agreement	98	54.44
The amount given is too small	96	53.33
Difficulty in repayment in event of crop failure	92	51.11
Poverty and illiteracy	88	48.89
Lack of fairness and justice	70	38.88
Litigation (courts/police case)	63	35.00

Multiple Responses
Source: Field Survey, 2016

The regression model was used to analyze the effect of some climatic variables on cocoa output. Three functional forms linear, semi-log and double log were tried using ordinary least squares (OLS) estimation technique under the assumptions that data fulfilled the assumptions of multiple regression model. These assumptions include absence of multi-collinearity among explanatory variables, normally distributed error term with zero mean and constant variance and non-auto regressive disturbance (Koutsoyiannisi, 1997). The estimated functions were evaluated in terms of statistical significance and magnitude of the coefficient of multiple determinations (R^2), the F-value, and the magnitude of standard error. Based on these statistical and economic criteria, the double log functional form was selected.

The regression estimate for the microfinance users (Table 5) indicates that educational level, ownership of assets and income source were statistically significant at 1 percent, indicating that these variables determine poverty among the microfinance users in the study area. The variables with negative signs imply that there was an inverse relationship between poverty status and the variables in question, and vice-versa.

Also, regression estimate on the microfinance non-users among the farming households revealed that educational level, income source, farm size and interest charged in naira were all statistically significant at 1 percent. These variables influenced poverty status of non-users of microfinance. The variables with negative signs imply that there was an inverse relationship between poverty status and the variables in question, and vice-versa.

Constraints Faced by the Farming Households in Accessing Microcredit

Result in Table 6 reveals the constraints being experienced by the farming households in their efforts to access microcredit in the study area as 77.22 percent

indicated high interest rate, 65 percent indicated high risk and uncertainty, 62.77 percent indicated administrative bottlenecks, 54.44 percent, 53.33 percent and 51.11 percent represented failure in meeting terms of agreement, amount is too small and difficulty in repayment in event of crop failure respectively.

CONCLUSION AND RECOMMENDATIONS

The respondents in the study area were poorly educated, making it impossible for a larger percent of them not to access credit. It was concluded that about 63.89 percent of the respondents were non poor due to the contribution of income from diversified activities to the households' income. Educational level, ownership of assets, interest rate charged and farm size greatly determined the poverty status of both microfinance users and non-microfinance users in the study area.

It is now recommended that provision of educational programs and accessible credit schemes that can facilitate the establishment of farm and off-farm businesses should be encouraged; land redistribution policy that will increase the farm size of farmers in order to boost agricultural production should be encouraged, programs that would lead to increase in productivity and consequently increase household income should be put in place, and considerable policies that will enhance accessibility of loans should be put in place.

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