



**IMPACT OF CREDIT UTILISATION ON POVERTY REDUCTION AMONG
FARM HOUSEHOLDS IN SOME SELECTED LOCAL GOVERNMENT AREAS
OF KWARA STATE, NIGERIA**

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ABSTRACT

This study examined the effect of credit utilisation on poverty reduction of a representative sample of 240 farm households in some selected Local Government Areas of Kwara State using descriptive statistics and logistic regression analysis. The results of the descriptive statistics show that 86% of the heads of the farm households were male and 54% had no formal education. The results further show that 44% of the households utilised credit facilities and 35% belongs to cooperative societies. The results of the living condition characteristics show that 61% of the households used open spaces for faeces disposal and 70% used fuel wood for cooking. With an estimated poverty benchmark of ₦3122.49 per capita per month, 53% of the farm households were poor and only 4% were core poor. With two dollars a day per capita benchmark however at ₦200 per dollar exchange rate and a poverty line of ₦12,000 per capita per month, 96% of the farm households were poor and only 34% were from households with credit utilisation. The identified factors influencing poverty status for all households (the pooled data) in the study area include: marital status and years of schooling of the household heads, membership of cooperative societies, amount of credit utilised and household size. The significant factors influencing the poverty status of households with credit utilisation in the study area are: years of schooling, cooperative membership, farm and household size. The following variables however significantly influenced the poverty status of households without credit utilisation: marital status, cooperative membership, farm and household size. The study recommends membership of cooperative society as a tool for accessing cheap and unencumbered credit facilities and for access to other farm inputs. Increased farm size and years of schooling can also result in higher level of welfare for the farm households in the study area.

Keywords: Rural farm households; credit utilisation; poverty status; logistic regression

INTRODUCTION

Farm households in Nigeria are not only income and food poor but are also resource poor (NBS, 2010). Capital in form of grants, gifts and loans are required by these

households for improved livelihoods. Capital formation and utilisation are also necessary for modernisation of agriculture which presently in Nigeria is at the rudimentary stage (Omonona *et al.*, 2010). Access to formal credit is however made difficult by the stringent measures put in place by formal credit institutions which compounds the already worsened situations faced by these resource poor farm households (Ololade and Olagunju, 2013). These stringent requirements by formal financial institutions make farm households to depend on informal sources that are usually with high interest rates (Adekoya, 2014). Although cooperative societies sometimes provide succour by providing credit facility at low interest rate, but not all farmers are members of cooperative societies despite the inherent benefits in such organisations (Adekoya, 2014). The representation of farm households among the poorest of the poor has been reported to be due to lack of productive resources for improved level of production and higher level of income (NBS, 2010). Improvement on the welfare of this category of households requires more capital formation and injection of such capital into productive and economic farm activities which sadly formal established credit institutions are not willing to venture into. Most of the times, the paper work and the interest charges as well as collateral requirements by these institutions further exacerbate the inaccessibility of such facilities by these resource poor and often times illiterate farm households (Adekoya, 2014). Farm households on the other hand are also risk averse and have phobia to obtain credit facilities for agricultural development or improvement on their scale of operation. This study therefore examines the effects of credit utilisation on welfare of rural farm households in selected local government areas of Kwara State. Specifically the study examines the socio-economic characteristics as well as expenditure patterns of the farm households in the study area based on credit utilisation; the poverty status of the households was also evaluated based on credit utilisation. Finally the study identified the factors influencing the poverty status of the farm households and made meaningful recommendations.

MATERIALS AND METHODS

The Study Area

The study was carried out in zone D of Kwara State, Nigeria. Kwara State has a population of 2,365,353 people based on national census of 2005 (National Population Commission, 2006). The state lies between latitude 7^o45'N and 9^o30'N and longitude 2^o30'E and 6^o25'E. There are dry and wet seasons in the state with a short period of harmattan haze usually between December and January (Kwara State Diary, 2005). The rainfall pattern is bimodal and usually between April and October. Annual rainfall ranges from 800mm to 1,500mm and varies from 1,000mm to 1,500mm in the South-Western part of the state (Kwara State Diary, 2005). Maximum average temperature is from 30^o C to 35^o C across the state with a minimum of 21.1^o C to 25^o C.

Sampling Technique

The study was carried out in zone D of Kwara State. The zone has seven Local Government Areas (LGAs) in the state. A three stage sampling technique was used to select the representative farm households for the study. First stage involves a random selection of four Local Government Areas (LGAs) out of the seven LGAs in the zone. The second stage

involves the use of simple random sampling technique to select two villages from each of the chosen LGAs. The last stage entails a random selection of thirty farm households from each of the chosen villages to give a total of two hundred and forty farm households altogether.

Data Analysis

Descriptive statistics was used in the study to describe the socio-economic characteristics of the farm households, the Foster, Greer and Thorbecke class of weighted poverty indices were also used to profile the poverty status of the farm households. The relative poverty lines for the study were obtained using 2/3rd and 1/3rd of the Mean Per Capita Household Expenditure (MPCHE) of the farm households to classify them into moderate and core poor respectively. The international poverty benchmark of 2USD per capita per day was also used to establish their poverty status following Olorunsanya and Ugbong, (2014). The Foster, Greer and Thorbecke, (1984) formula is given as:

$$P_{\alpha} = 1/n \sum_{i=1}^q (z - y_i / z)^{\alpha} \dots\dots\dots(1)$$

Where P_{α} is the weighted poverty index; n is the number of households; y_i is the expenditure per capita of *ith* household; z is the poverty line defined as 2/3rd of the mean per capita household expenditure of the population; q is the number of the sampled farm household population below the poverty line; α is the aversion to poverty and it ranges from 0 to 2. Alpha (α) equals 0 measures the proportion of the poor in the population; when it is equal to 1, it measures the depth of poverty and α equals 2 measures the severity of poverty in the population. Only the headcount index was used in this study to measure the proportion of the sampled households that are poor. The formula for the headcount index is stated in equation 2 below when (α) equals zero:

$$P_o = q/n = H \dots\dots\dots(2)$$

Where H is the headcount index or ratio or the proportion of the rural farm households' population that are poor, while q and n are as explained before.

Logistic regression Model

Logistic regression model was used to identify the determinants of poverty. The dependent variable of the model is a discrete dichotomous variable that takes the value of one (1) if the farm household is poor and zero (0) if otherwise. The model for the Logistic regression is given as:

$$\rho (Y = 1 \text{ or } 0) = \frac{e^Z}{1+e^Z} \dots\dots\dots(3)$$

$$\text{The logit transformation of } \rho \text{ is given by } Z = \ln\left(\frac{\rho}{1-\rho}\right) \dots\dots\dots(4)$$

$$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots \beta_{11} X_{11} \dots\dots\dots(5)$$

Where:

Y is the poverty status of the farm households and is equal to 1 if the household is poor and 0 if non poor.

ρ is the probability that the household is poor.

β_0 = intercept

β_{1-11} = Coefficients of the independent variables 1 to 11 fitted for the model

X_i = A vector of the 11 independent variables fitted for the model and these are further explained as follows:

X_1 = Age of the household heads in years

X_2 = Gender of the household heads, a dummy variable which is equal to 1 if male and 0 if otherwise.

X_3 = Marital Status of the household heads, also a dummy variable and is equal to 1 if the household head is married and 0 if otherwise.

X_4 = Years of schooling of the household heads

X_5 = Membership of cooperative society by the household heads, yes = 1, No = 0

X_6 = Access to extension agents, Yes=1, No= 0

X_7 = Amount of credit utilised in Naira

X_8 = Household Size

X_9 = Farm Size in hectares

X_{10} = Presence of other working members in the family

X_{11} = Child Dependency

RESULTS AND DISCUSSION

Socio-economic Characteristics

The results of the socio-economic characteristics of the sampled farm households in the study area are presented in this section based on credit utilisation. As expected 86% of the heads of the farm households are male and 49% of this made use of credit facilities for farm purposes (Table 1). Farming activities in the study area are dominated by male due to cultural and religious beliefs of the people of the area (Olorunsanya and Omotosho, 2014).

Table 1: Socio-economic characteristics of farm households in Kwara State based on credit utilisation

Variables	Households without Credit Utilisation	Households with Credit utilisation	All Households
Credit Utilisation			
Nil	135	-	135 (56)
>50,000	-	54	54 (23)
50,000-100,000	-	44	44 (18)
101,000-200,000	-	1	1(0.5)
>200,000	-	6	6 (2.5)
Sources of Credit			
Nil	135	-	135 (56)
Cooperatives	-	49	49 (20)
Friends and Relations	-	40	40 (17)
Formal Credit	-	16	16(7)
Institutions			
Gender of the Household Heads			
Male	117 (49)	90 (37)	207 (86)

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Female	18 (8)	15 (6)	33 (14)
Marital Status of the Household Heads			
Not married	10 (4)	18 (8)	28 (12)
Married	125 (52)	87 (36)	212 (88)
Age of the Household Heads			
25-35	15 (6)	3 (1)	18 (8)
36-45	14 (6)	27 (11)	41 (17)
46-55	49 (20)	34 (14)	83 (34)
>55	57 (24)	41(17)	98 (41)
Education of the Household Heads			
Non Formal Education	92 (38)	38 (16)	130 (54)
Arabic Education	4 (2)	2 (1)	6 (3)
Primary	28 (12)	20(8)	48 (20)
Secondary	7 (3)	34 (14)	41(17)
Tertiary	4 (1)	11(5)	15 (6)
Household Size			
1-5	10 (4)	19 (8)	29 (12)
6-10	59 (25)	69 (29)	128 (53)
>10	66 (28)	17 (7)	83 (35)
Farm Size			
<1	12 (5)	5 (2)	17 (7)
1-2	107 (45)	75 (31)	182 (76)
>2	16 (7)	25 (10)	41 (17)
Access to Input			
No	105 (44)	6 (3)	111 (46)
Yes	30 (13)	99 (41)	129 (54)
Extension Access			
No	94 (39)	32 (13)	126 (53)
Yes	41 (17)	73 (31)	114 (48)
Cooperative Membership by the household Heads			
Yes	34 (14)	49 (20)	83 (35)
No	101 (42)	56 (23)	157 (65)
Presence of Other Worker			
Yes	54 (23)	48 (20)	102 (42)
No	81 (34)	57 (24)	138 (58)

Also 88% of the head of the farm households are married with 59% in the active age. In terms of credit utilisation 56% did not utilise credit facility and only 3% used more than ₦100,000 credit for farming activities. Sources of credit available to the farm households are mainly from informal sources like cooperative societies and friends and relations (37% of the farm households used credit from these sources). Only 7% of the farm

households utilised credit from the formal sources such as commercial and development banks and other formal sources, this is in agreement with Adekoya, (2014). Fifty-seven per cent of the heads of the farm households had no western education as is commonly the case in Nigeria. Farming operations are currently being carried out by the less educated although the trend is gradually changing (NBS, 2014). Fifty-three per cent of the heads of the sampled households have 6-10 members and 35% have more than 10 members per household. Large household can provide ample family labour for farm operations where the members are not engaged in non-farm operations (Olorunsanya and Ugbong, 2014). Only 17% of the farm households had farm holdings that are more than two hectares of land and out of this only 10% used credit facility. Access to and utilisation of farm credit allows for increased farm holdings and increased use of other farm resources where interest rate is low and can allow for repayment of the loan with reasonable profit for the farm households (Adekoya, 2014; Ololade and Olagunju, 2013 and Olorunsanya *et al.*, 2013a). Ditto for access to farm input, households that utilise credit facility have access to farm input more than households without credit utilisation. Mostly the cooperatives that provide credit facility for these households also serve as repository for inputs for them.

Expenditure Patterns of Farm Households based on Credit Utilisation

The expenditure patterns of rural farm households in Kwara State are presented in Table 2.

Table 2: Expenditure pattern and poverty status based on credit utilisation

Expenditures of Farm Households	Households Without Credit Utilisation	Households With Credit Utilisation	All Households
Mean per Capita Total Household Expenditure	3720.65	5921.98	4683.73
Mean per Capita Household Food Expenditure	2328.87	3480.92	2832.89
Mean per Capita Household Non-food Expenditure	1391.78	2441.1	1851.38
2/3 rd of Mean Per Capita Household Expenditure (MPCHHE)	-	-	3122.49
1/3 rd of Mean Per Capita Household Expenditure	-	-	1561.24
Head Count Index using ₦3122.49 poverty benchmark of all households	0.46	0.08	0.53
Core Poor (using ₦1561.24 of all households)	0.03	0.01	0.04
Head count Index using two dollars a day benchmark at ₦200 per dollar which equals ₦12,000 per capita per month. (2015 exchange rate)	0.63	0.34	0.96

The table presents an interesting distinction between households with credit utilisation and those without in terms of consumption expenditure. Households that utilise credit are fairly better than their counterpart without credit utilisation. The mean per capita household expenditure (MPCHE) for households with credit utilisation was ₦5921.98 per month as against ₦3720.65 per month for households without credit utilisation. The MPCHE for all households however was ₦4683.73 per month. In terms of food and non-food components the mean MPCHHE for households with credit utilisation was also greater than those for households without credit utilisation. Using the poverty benchmark of 2/3 of the mean per capita household expenditure for all households, 53% of the farm households were poor and 4% were core poor. Using the international benchmark of 2USD a day at an exchange rate of ₦200 per 1USD for year 2015, a poverty line of ₦12,000 was obtained and 96% of the farm households were poor. This is in line with Olorunsanya and Ugbong, (2014) who reported same scenario among rice marketers in Niger state.

Living Condition Characteristics

The living condition characteristics of the farm households are presented in Table 3. Interestingly, the households with credit utilisation had better wellbeing status than their counterparts without credit utilisation based on living condition characteristics. 61% of all households utilised open spaces for disposing off their faeces and only 20% of this category belong to households with access to credit utilisation (Table 3). Similar result was obtained by Olorunsanya, *et al.*, (2013b) and NBS, (2010) among rural farm households in Niger state and Nigeria respectively. Also, out of the only 6% of the households that used water closet in the study area, 5% (representing 83% of the lot) belong to households with credit utilisation. This suggests that farm households with credit utilisation fair reasonably better than their counterparts without credit utilisation although other factors like education of the household heads, access to extension services and membership of cooperative societies might have contributed to this. Households with educated heads are likely to have better living condition than their counterparts with low level of education. In the study area, 27% of households with credit utilisation had one form of education or the order (primary to tertiary) as against only 16% for households without credit utilisation (Table 1). Ditto for cooperative membership and access to extension services; 31% as against 17% of members of the households with credit utilisation had access to extension services (Table 1) and 20% against 16% of the heads of households with credit utilisation belonged to cooperative societies.

The millennium development goal target for 2015 was to halve the proportion of the population without sustainable access to safe drinking water and basic sanitation. This goal has to some extent been met in terms of access to potable water in the study area. Fifty-five per cent of the sampled farm households in the study area had access to potable water. Unfortunately however, 23% of these households still drink water from the stream. Only 9% of this lot however belong to households with credit utilisation. NBS, (2010) also reports poor access to potable water by rural households in Nigeria. The use of electricity whether through generating set or rural electrification or connection to the main grid dominate the sources of power in the study area. 73% of the farm households in the study area used electricity from these sources and 34% of them belong to households with credit utilisation. Unfortunately, fuel wood is still the major source of energy for cooking in the

study area with 70% of all households utilising fuel wood for cooking. Out of this lot, only 26% belong to households with credit utilisation.

Table 3: Living condition characteristics of rural farm households based on credit utilisation

Living Condition Indicators	Households Without Credit Utilisation	Households With Credit Utilisation	All Households
a) Toilet Facility:			
Water Closet	3(1)	11 (5)	14(6)
Pit Latrine	37 (15)	42 (18)	79(33)
Open Space/ Bush	95(40)	52 (21)	147 (61)
b) Room/ Capita			
<1 Room	134 (56)	102 (43)	236 (98)
One room and above	1(1)	3(1)	4 (2)
c) Water Source:			
Pipe Borne Water	2 (1)	8 (3)	10 (4)
Well	31 (13)	22 (9)	53 (22)
Public Bore Hole	68 (28)	54 (23)	122 (51)
Stream	34 (14)	21 (9)	55 (23)
d) Light Source:			
Electricity	93 (39)	82 (34)	175 (73)
Other sources	42 (18)	23(9)	65 (27)
e) Cooking Material			
Gas cooker	1 (1)	2 (1)	3 (1)
Kerosene Stove	30 (12)	40 (17)	70 (29)
Wood fuel	104 (43)	63 (26)	167(70)
f) Treatment Source:			
Herbs and Traditional Method	65 (27)	50 (21)	115 (48)
Dispensary and Clinic	70 (29)	55 (23)	125 (52)
g) Child Dependency			
Less than One	132 (55)	104 (43)	236 (98)
One and above	3 (1)	1(1)	4 (2)

Olorunsanya and Ugbong (2014) and NBS (2010) report high use of fuel wood for cooking among rice marketers and rural households in Niger State and Nigeria respectively. Generally households with credit utilisation fair better than their counterparts without credit utilisation in terms of living condition and ability to meet the millennium development goals of 2015. A lot, however still needs to be done to improve on the living condition of the farm households in the study area.

Factors Influencing Poverty Status of Farm Households

The results of the logistic regressions for household with and without credit utilisation and for all households (the pooled data) are presented in table 4, 5 and 6. Out of the eleven variables fitted for the regression for all households, seven were significant in

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influencing the poverty status of the farm households in the study area. The fitted variables are as stated in the methodology. The significant variables for all households are: marital status and years of schooling of the household heads, membership of cooperative society, amount of loan utilised for farming, household size, farm size and presence of other working members in the households (Table 4). Other fitted variables that were not significant in influencing the poverty status of farm households in the study area are: age and gender of the household heads, access to extension services and child dependency ratio.

Table 4: Logistic regression results for all households

Variables	Coefficient	z-values
Age of the Household Heads	0.636	1.79
Gender of Household Heads	-0.486	-0.63
Marital Status of the Household Heads	-1.458	-2.52**
Years of Schooling	-0.072	-2.02**
Cooperative Membership	-2.200	-4.00*
Access to Extension Agent	-0.3292	-0.64
Amount of Credit Utilised in Naira	-0.023	-2.53**
Household Size	0.456	4.69*
Farm Size	-3.157	-4.27*
Presence of other Working Members in the household	-0.849	-2.04**
Child Dependency Ratio	0.796	0.47
Constant	0.742	2.29**

Many variables (gender and marital status of the household heads, years of schooling, cooperative membership, farm size, extension access, presence of working members in the households and amount of loans utilised by the farm households) in the model are negatively related to the poverty status of the rural farm households in the study area. Other fitted variables in the model such as household size, child dependency ratio and age of the household heads however, relate positively to the poverty status of the farm households. Large household size significantly contributed to the poverty status of the farm households in the study area due to pressure on household resources by many members. This finding is corroborated by NBS, (2014) and Olorunsanya and Ugbong, (2014). The years of schooling of the household heads had negative significant influence on the poverty status of the farm households in the study area. This is to be expected; the more educated the household heads the more likely that they will be more efficient in the use of resources including farm credit and the higher the possibility of improved welfare through increased net farm income. Cooperative membership was also found to have significant negative influence on the poverty status of the farm households in the study area. This is to be expected since cooperative society usually provides farm input to their members which could result in higher farm income and better welfare. Similar report was obtained by Ferguson, (2012) and Antai and Anam, (2013).

When regressions were run independently for the farm households based on credit utilisation or no credit utilisation with the same variables specified in the methodology with exception of amount of loan utilised, the following variables were significant in influencing the poverty status of households with credit utilisation (Table 5): years of schooling of the household head, cooperative membership, farm size and household size. The following variables however influenced the poverty status of households without credit utilisation

(Table 6): marital status of the household heads, cooperative membership, farm size, and household size. All the significant variables for the two categories of households are negatively related to poverty status with exception of household size which is positively related to the poverty status of the farm households. Household size was also found by Olorunsanya and Ugbong, (2014) and NBS, (2010) to positively influence poverty status of rice marketers in Niger State and rural farm households in Nigeria respectively. The three fitted regressions for all households and for households with and without credit utilisation have household size, farm size and cooperative membership to have significant influence on poverty status of the farm households in all the three categories. This shows the importance of these variables in influencing the poverty status of the farm households in the study area and therefore could serve as tools for meaningful poverty reduction strategy in the study area.

Table 5: Logistic regression results for households with credit utilisation

Variables	Coefficient	z-values
Age of the Household Heads	0.037	0.27
Gender of Household Heads	-8.536	-1.63
Marital Status of the Household Heads	3.863	0.70
Years of Schooling	-0.656	-2.04**
Cooperative Membership	-4.133	-3.81*
Access to Extension Agent	-5.290	-1.89
Household Size	0.949	2.40**
Farm Size	-8.823	-3.05*
Presence of other Working Members in the household	-2.058	-1.39
Child Dependency Ratio	-3.688	0.53
Constant	10.800	2.10

*, ** Denotes significance at 1% and 5% respectively

Table 6: Logistic Regression Results for Households without Credit Utilisation

Variables	Coefficient	Z- values
Age of the Household Heads	0.055	1.27
Gender of Household Heads	-0.038	-0.64
Marital Status of the Household Heads	-3.472	-2.10**
Years of Schooling	-0.034	-0.40
Cooperative Membership	-2.933	-3.65*
Access to Extension Agent	-0.839	-1.29
Household Size	0.592	4.37*
Farm Size	-2.154	-2.37**
Presence of other Working Members in the Household	-1.132	-1.93
Child Dependency Ratio	2.449	1.18
Constant	-2.016	-0.63

*, ** Denotes significance at 1% and 5% respectively

CONCLUSION

This study concludes that using expenditure pattern, living condition as well as poverty assessment there is low level of welfare among farm households in the study area. Households that utilise credit facility to some extent had better living condition and higher level of consumption and low level of poverty than their counterpart without the use of credit facility. Although other factors like education, cooperative membership and access to extension services might have contributed to this. It is also true that use of credit is not without a cost, but its judicious use can impact on the welfare of farm households. The study recommends that education, increased farm size, efficient credit utilisation and cooperative membership can help reduce the level of poverty in the study area. A suggestion was also made for manageable household size for better welfare among the farm households.

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