EFFECT OF CREDIT USE ON AGRICULTURAL OUTPUT OF RURAL HOUSEHOLD IN AKOKO NORTH -WEST LOCAL GOVERNMENT AREA OF ONDO STATE

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ABSTRACT

This paper examined the effect of credit use on agricultural output of rural household in Akoko North-West local government area of Ondo State. A total of Fifty (50) questionnaires were designed to capture the socio demographic characteristics of the farmers and other objectives of the study. Data obtained were subjected to descriptive statistic, linear regression and probit analysis. The studies found that majority (97.9%) of the rural household were male, with (25.5%) having no formal education. (42.6%) of the respondents were within the age groups of 40-50 years. The result of the linear regression model shows that; household size ($p< 0.10$), quality of road ($p<0.01$), cost of transportation ($p<0.10$), amount of credit granted and total farm size ($p<0.05$) had positive influence on agricultural output in the study area. The result of the probit regression model showed that: farm size ($p< 0.10$), output ($p<0.05$), member of a saving group ($p<0.10$), education ($p<0.05$) and experience had significant effect on the amount of credit granted to farmers in the study area. The mean credit request was (₦30851.06) of which only (₦22875.34) was granted. The study concluded that most of the respondents were in their active age and the amount of credit granted to them by their cooperative society was too small for them to improve on their farm size. The study recommended that farmers should participate more on their cooperative society and government should improve on the quality of road in the study area and also make loan sources available to the farmers to increase their productivity.

Keywords: Rural household, Effect of credit, Agriculture, Nigeria economy

INTRODUCTION

Agriculture is a major branch of the Nigeria economy; it contributed 32% to GDP in 2001, and provides employment for about 70% of the population. The sector is being transformed by commercialization at the small, medium and large scale enterprise levels. Major crops produced in Nigeria include beans, sesame, cashew nuts, cassava, cocoa, groundnut, yam, palm oil, plantains, rice, rubber etc. Agricultural holdings are small and scattered, and farming is carried out with simple tools. Rural infrastructure, comprising of roads, markets, irrigation systems, water supply, telecommunication facilities, health and educational facilities, are basic to quality of life in rural areas and are important facilitators of economic growth. (Ahmed and Donovan, 1992). In many communities in Nigeria, inadequate and low quality of infrastructure has been known to have series of implications for welfare and the persistence of poverty. The rural populations have limited access to services such as school and health centers and about half of the population lacks access to safe drinkable water. (Fan et al. 2000). The availability and quality of road infrastructure influences the effectiveness of all other rural infrastructures. A good road network will expand the distribution of agricultural goods as well as open up additional opportunities for agricultural trade. (Fan et al, 2004). The neglect of road infrastructure can therefore be an impediment to profitability and limited accessibility has also cut off small scales farmers from source input, equipment and new technologies. Crops yields are therefore low i.e. low agricultural output, because farmers lack inputs. (Khandker, 1989).

Credit is essential in poor rural economies. It is required to finance working capital and investment in fixed capital, particularly among farmers that are too poor to accumulate much savings. It is an important instrument for smoothing consumption, in a context where incomes typically experience large seasonal fluctuations. Availability of credit reduces reluctance to adopt technologies that raise both mean levels and riskiness of incomes (Aghion and Bolton 1997). The credit market thus affects output, investment, technology choices and inequality. Lacks of adequate access to credit have significant negative consequences on aggregate and household level-incomes, technology adoption, agricultural productivity, and overall household welfare (Alderman and Paxson, 1992: Zeller *et al.* 1997; Zeller and Sharma, 1998; Diagne and Zeller, 2001). It is against the above background, and the need to revert the declining productivity in Nigeria, that this study was embarked upon to analyze the effect of credit use on agricultural output of rural household in Akoko North -west local government area of Ondo state.

Objective of the study

The objective of the study was to examine the effect of credit on agricultural output and income of the rural household in the study area.

Specifically the study examined the

- ➢ Socio-economic characteristics of the farm household in the study area.
- ➢ Factors affecting output of respondents in the study area.
- ➢ Factors influencing access to credit availability of respondents

Problem Statement.

In Akoko North West Local Government Area of Ondo State, the agricultural output and income of the rural household has been drastically reduced. Though some farmers have appreciable output and income but most of the farmers in the area have low income and low agricultural output. In view of this, the study intends to find out the remote causes of the differences that occur in the income and output of the rural farmers in the study area.

RESEARCH METHODOLOGY

The study was conducted in Akoko North West Local Government areas of Ondo State. Most of the people living in this part of Ondo State are predominantly farmers. It's headquarter is located in Oke-Agbe. It has an area of 512km^2 and a population of 213792 at the 2006 census (NPC 2006). Purposive sampling techniques were used to draw a total of 50 respondents for the study. Data collected include, agricultural output, production input, labour use, produce prices, and related questions on availability of roads, market, distance to market, road quality, sources and level of house hold income as well as household social characteristics. Data collected were subjected to various statistical analyses. Descriptive and inferential statistics like frequency and percentages was used to describe the socio-economic characteristics of respondents as well as possible constraints facing the respondents in the study area.

Linear regression model was used to determine the factors affecting output of the respondents in the study area; the model was stated according to Chukwuji and Oyaide (2005).

Output   = f (FS, ACG, DM, ED, HH, RQ, U)

Where,

Output   = The volume of annual agricultural output of a particular household (kg).

FS = The size of the land holding (ha),

ACG = Amount of credit granted (₦),

DM   = Distance from home to the major produce markets (km),

ED = The level of education attained by the respondent (years),

HH = Number of persons in work force

RQ = Road quality (paved road =3, unpaved road =2, seasonal road =1),

u = error term,

Since economic theory does not indicate the precise mathematical form of the relationship among the variables, linear functional form of the function was estimated.

Probit Regression Model

Probit Regression model was used to analyze the factors influencing access to credit by the rural farmers. The model is implicitly shown as

$Y_i = \beta_i + \varepsilon_i$ ……………….. 1

(Y = 1 if there is access to credit and 0 if there is no access to credit).

Where: Y_i = access to credit, Z_i = Exogenous variables ($Z_1 – Z_5$)

Z_3 = Output (Kg)/ha), Z_2 = Membership of savings group (yes = 1 No = 0), Z_3 = Level of education (years), Z_4 = Household size (Number), Z_5 = Experience of farmers (years), μ_i = Error terms

The probability of individual farmers' access to credit depends on all the xi's (i.e. the exogenous variables)…………………… 2

RESULT AND DISCUSSION

Socio- Economic Characteristics of Households

As shown in Table.1. (8.5%) of the respondents were below 30 years of age while (61.7%) of the respondents were within age 30-50. This is an indication that the farmers are in their active age, since age determine how effective agricultural activities are done. The farmers were predominantly male, making up of about (97.9%) of the total population. The educational status shows that (25.5%) of the rural dwellers had no formal education while 21.3%, 27.7% and 25.5% had only primary, secondary and tertiary education respectively. An observation which tends to refute the alarming rate of illiteracy prevalent in rural communities. A high level of educational attainment is expected to affect positively the production of rural dwellers, as educated farmers are more likely to adopt modern agricultural practices. In most cases, the rural dwellers based on the situation of their environment are fond of the attitude of early marriage, as reflected in the

result on table 1. All the respondents interviewed for the study were married. A relatively large household size was found in the study area. About 2.1% of the households have a family size that ranged below 5 persons, and 8.5% have family size that ranged between 5-10 while family whose range is above 10 persons was about 89.4%, thus, supporting the predominance of large family size among the poor in rural areas. Although a very large family size may constitute social burden, however, larger households use their labour input to an advantage in farming. This enhances more labour input in farming activities. Experience is a working factor that determine how well agricultural practices have been carried out, as shown in the table, 55.2 % of the respondents have farming experience of between 21-50 years.

Table 1: Distribution of Respondents According to Socio-Economics Characteristics

DESCRIPTION	FREQUENCY	PERCENT
AGE		
< 30 years	4	8.5
30-40 years	9	19.1
40-50 years	20	42.6
> 50 years	14	29.8
SEX		
Male	46	97.9
Female	1	2.1
EDUCATION		
No formal education	12	25.5
Primary education	10	21.3
Secondary education	13	27.7
Tertiary education	12	25.5
MARITAL STATUS		
Married	47	100
Single	-	-
HOUSEHOILD SIZE		
1-5	1	2.1
5-10	4	8.5
>10	42	89.4
EXPERIENCE		
<20	19	40.4
21-30	5	10.6
31-40	12	25.5

41-50	9	19.1
>50	2	4.3

Source: computed from field survey, 2012

Linear Regression result on agricultural output

The result of the regression analysis of the factors affecting the output of the farmers in the study area is presented in table 2. The variables of household size, quality of road, cost of transportation, total farm size and amount of credit granted were significant and positive except for the variable of the amount of credit granted, though positive but not significant. The implication of this is that, as household size increases the output of the respondent increases. Also, the quality of road influences the output rate which implies that if the road is good it will have a positive effect on the output significantly in the sense that farmers will be ready to produce more when they know that there is an easy means of transporting their produce to the market. Also, costs of transportation have positive impact on the output of the farmers. The reason for this must be due to the fact that when there is a good quality road, there is tendencies that cost of transporting produce from the farm to the market will reduce compare to when transporting such produce on a bad road. Furthermore, since the variable of farm size is positive and significant, there is likely possibility that farm output will increase with increase in farm size.

Table 2: Regression Results of Factors Determining Agricultural Output Among Rural Household

Variable	Estimated coefficient	T-Ratio
Constant	-2.7413	-1.385
Household Size	1.7016	1.8234*
Quality of Road	3.6159	3.600*
Cost of transportation	3.6015	1.704*
Amount of credit granted	0.0079	0.563
Total farm size	1.3408	2.3540**

Source: Computed from field survey, 2012

Key * Significant at 10%, ** Significant at 5%, *** Significant 1%

Factors Affecting Credit Access

The variable of output, member of saving group, household size, education and experience were all positive and significant except for household size that is positive but not significant. The effect of this is that for the variable of output, the more the output produced by the farmers the more the credit they are able to acquire from the credit source. Also, been a member of a saving group gives direct access to credit.

Table 3: Probit Result of the Factors Affecting Credit Access

Variable	Estimated coefficient	T-Ration
Constant	15.704	**1.7840***
Output	0.2559	**2.3165****
Member of saving group	9.3254	**1.8834***
Household size	0.3086	**0.9659**
Education	0.1579	**2.4998****
Experience	0.0207	**1.7569***
Likelihood Ratio Test	97.8194	
Mcfadden R-square	0.89176	

Key * Significant at 10%, **Significant 5%, ***Significant 1%

Source: Computed from field survey, 2012

Difference between Mean Texts

A test of difference of mean was used to determine the significant difference between credit request and credit granted to the farmers in the study area. The result of the text of significance between the mean credit request and the mean credit granted by the difference credit sources in the study area showed a significant difference between the means. The result is presented in table 4 below.

Table 4: T-test of difference of means between credit request and credit granted

	Mean	Standard Deviation	t-value	Decision
Credit Granted	30851.06	40864.558	**3.462**	Reject H_0
Credit Request	22872.34	35885.456		

Source: Computed from Field Survey, 2012

CONCLUSION AND RECOMMENDATIONS

This study focused on the effect of credit use on agricultural output of rural household in Akoko North-west Local government area of Ondo State Nigeria. It was found that significant share of total income of rural households in the study area was derived from agriculture, although, income obtained from non- agricultural and self- employed was a very important component of total household income. The study also presented evidence of the twin effect of distance-to-market and road quality on agricultural output and income. Since increase in the distance variable and poor road quality reduce household income, a policy thrust that will cut down distance to markers by the expansion and rehabilitation of rural road network should be pursued vigorously to boost agricultural output, enhance the income diversification strategies of households and strengthens the linkages between the agricultural and non- farm sector of rural economy. It is recommended that the Federal government should extend credit facilities to the farmers in the study area to acquire more of the modern input needed for agricultural production. Government should also embark on the provision of good road infrastructure in order to facilitate the movement of labour input and other required facilities to the farm and output to the market.

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