Microcredit and Farmers' Productivity in Osun State, Nigeria

ABSTRACT

The present work examines micro-credit and farmers' productivity in Osun State, Nigeria. A total of 140 respondents were interviewed using structured questionnaires. Micro-credit sources identified in the study area were money lenders, rotational savings associations, farmers in the partnership business, banks, cooperatives, non-governmental organisations and the Ministry of Agriculture. Collected data were analysed using descriptive and Tobit regression model. The Tobit regression model showed that there was a significant relationship between household size (β=0.623), farming experience (β=0.858) and loan condition (β=1.29) on the acquisition of credit by the farmers. The mean amount of loan given by credit providers per season was in the range of ₦20, 000 to ₦100, 000 with a year's duration. Generated income was used as a measure of productivity in the study and it was the minimum of ₦20,000 per planting season. Interest rate had a negative relationship with credit acquisition which implied the majority of the farmers patronised the informal sources of credit. This research's outcome showed that loan conditions from informal sources were more favourable compared to that from formal sources; hence a reason for the high level of patronage. This, therefore, suggests that formal lending institutions should relax agricultural lending condition and provide credit for agricultural purposes to increase the productivity of farmers.

Keywords: Credit acquisition, Informal sources, Productivity, Tobit Regression model, Loan condition.

INTRODUCTION

A vicious cycle of low-level output, income, savings and investment is characteristic of most developing countries of sub-Sahara Africa (Livelihood and Food Security Trust Fund, (LFTF), 2016). This occurrence is so because many of the populace in the region depends on equity capital (Owner's fund/capital) for business. However, researches have proved that equity capital is insufficient to meet the expenditure requirements for increased productivity of any sector[1]; if eradicating poverty is of utmost importance[2]Microfinance is used for

[1] much more so agricultural sector
[2] http:// www.sustainable rural livelihoods.

delivering a full range of commercial and financial services to a large group of low-income groups and sub-groups of people to achieve economic development, social cohesion, and poverty reduction[3].

Olayide, (2006), Oshuntogun and Oludimu (2010) and Akwaa-Sekyi (2013) stressed the importance of agricultural credit to the overall welfare of farmers saying that credit is required to purchase improved technologies like seeds, fertilizers, herbicides, pesticides, agricultural machinery, equipment etc. for increased productivity and the overall expansion of the farm. It is also required in order to pay salaries of regular staff and wages of farm labour hired for major seasonal tasks. The role of agricultural credit is not restricted to production alone (Boateng and Oduro, 2013). However, according to Adegeye and Dittoh (1985)[4], consumption credit, especially to small farmers is a necessity especially at lean periods; which will provide the necessary impetus to increase labour productivity in the farms as well as provision of feeding money before the outright harvest of crops.

Agriculture's contribution to the development[5] was hinged on the availability of credit to farmers (Ikpi and Olayemi, 1995). Idachaba, (1984) was of the opinion that one of the problems confronting agriculture in Nigeria was, farmers and agro-based entrepreneurs, do not get farm credit in the right amount, place and form, especially when it is most needed. This assertion although dates way back are still current and a problem plaguing the agricultural financial system till date, hence a justifiable reason to look at the effect availability or non of microcredit has on the productivity of farmers.

Finance (used interchangeably with micro-credit) was very important in relation to production and productive processes; it has been found to improve the welfare of businesses/people directly or indirectly thereby enhancing the productive capacities of individual firms/farms through investment either in human and/or physical capital (Ugochukwu, 2013). The availability of cash (finance) for productive ventures/investments alongside proper managerial skills would enable those in business to overcome long-term or

---

[3] http:// www.developmentgoals.org.

[4] http://www.gdrc.org (the gendering of microfinance in Nigeria).

[5] process of providing food, capital and labour to the industrial sector and increasing the size of products at the international market

short-term situations and conditions faced in businesses such as: inability to expand, liquidity constraints (inadequate liquid cash), incapacitations to undertake new investments, inability to boost production, inability to employ qualified staff to mention but a few.

Furthermore, it is common knowledge that it is the small and medium-sized businesses as well as the agricultural sector[6] that employ over 70 percent of the population in sub-Saharan Africa; however, the sector is the most disadvantaged in relation to finance and/or accessibility to credit. This is why adequate financing in agriculture can never be overemphasised (Food and Agricultural Organization (FAO), 2008); and a reason for this research. Consequently, there was an assertion by Zeller et *al.* (2013) that adequate access to credit goes a long way in reducing the opportunity cost of capital. Fair access to credit would help farming household boost their welfare conditions, reduce risk bearing and help them improve on risk coping strategies and a willingness to adopt new technologies which would go along way in increasing production and productivity of farmers (Aliou *et al*., 2000).

However, agriculture in Nigeria has witnessed various developmental programmes which were introduced at one time or the other. Some of which focused on credit which was: The Agricultural Credit Guarantee Scheme Fund (ACGSF), a policy instrument of the Federal Government of Nigeria on Agricultural-Credit. The Scheme which was established by Decree 20 of 1977 became operational in 1978. The Nigerian Agricultural Insurance Corporation (NAIC), The World Bank Assisted FADAMA projects I, II and III, The Commercial Agriculture Credit Scheme and recently (Rural Finance Institution Programme (RUFIN Programme) 2011-2015, and presently the anchor borrowers' scheme 2016 till date, a collaborative efforts of many development partners like the International Fund for Agricultural Development (IFAD), Agricultural Development Bank (AFDB), the World Bank, the Central Bank of Nigeria and Ministry of Agriculture and Natural resources (African Farmers' Journal, (2018). The objective of these programmes was to strengthen microfinance institutions (MFIs) and establish linkages between these institutions and farmers to create a viable and sustainable rural financial system. The programmes were expected to develop rural financial institutions; enhance access to financial services by rural population to boost the productive capacities of rural-micro and small-enterprises (Nigerian Institute of Social and Economic Research (NISER), 2014). However, not much of the aforementioned has been accomplished leading to farmer's productivity.

[6] a lot of farmers are still small farm holders with farm sizes less than2-3 hectares

PROBLEM STATEMENT

The per capita income generated from food produced in sub-Sahara Africa has been on the decline because food production has not been able to keep pace with population growth (Ehui and Spencer, 2010; Tabsoba, 2009). There is also a new school of thought among development economists that better living standards and the elimination of poverty must be based on the sustained expansion of output which is expected to lead to increases in income, available funds and farmer productivity in the long run (Schmidt-Hebbel, 2006). Thus, the importance of capital to the agricultural sector cannot be overemphasised. However, farmers lack adequate capital both in acquisition and accumulation; hence, the essence and need for credit[7]. Formal financial institutions are, however, guided by numerous policies whose impact rather than the benefit is contrary to the rural populace because of these following reasons:

i) The cost of loan acquisition compared to the farmer's capacity to pay is too high.
ii) The cost of loan administration by the financial institution is high.
iii) The financial institutions' charge on interest rate and administrative-cost is high.

This has resulted in small-scale farmers finding it difficult to obtain loans from formal sources. In the face of these shortcomings from the formal financial sector, the informal sector has become an alternative to most rural and some urban business people in need of credit.

The forecast has been farmers' productivity would grow annually in terms of total output and annual income. It was believed that after borrowing for a number of years and investing in profitable ventures, a borrower would have accumulated sufficient capital to stop borrowing and become independent, thus using retained earnings for the expansion of his/her business. However, observations have not confirmed these expectations based on forecast/real-life occurrences, as farmers have continued to remain poor and have low productivity despite the availability and intervention of both formal and informal credit sources.

[7] Credit provides a basis for increased productivity through specialised functions by providing the incentive for the adoption of new technology, and/more efficient utilisation of production factors through the introduction of new outputs.

OBJECTIVE OF THE STUDY

The general objective of this study is to assess micro-credit and farmers' productivity in Osun State. The specific objectives are to profile the sources of micro-credit used by farmers and the loan procurement conditions; profile the socio-economic characteristics of users of microcredit in Osun state and to identify the determinants of microcredit use by farmers in the study area.

MATERIAL AND METHODS

The Sample frame/target populations for this study were farmers that consistently apply for loans both from formal and informal micro credit-sources. A 3 stage random sampling technique was adopted in this study. All three agricultural development zones were covered in the survey. The first was the purposive selection of the three ADB zones of Iwo, Osogbo and Ilesa. The second was a proportionate selection of eight local government areas to size from the 30 local governments in the three zones, which were:

(a) Iwo zone: Ayedaade, Irewole and Isokan

(b) Ife/Ilesa zone: Atakunmosa East and Oriade

(c) Osogbo zone: Ede and Osogbo

The third was the random selection of 20 farmers selected at random to give a total of 160 respondents, however, only 140 respondents were eventually used for this study.

TOOLS OF DATA ANALYSIS

Both descriptive statistics and econometric tools were used to analyse data obtained from this survey, and these include means, frequencies, tables and the Tobit, regression model. The Tobit regression model (Tobin, 1958; Smith, 2006) was used to estimate the determinant of farmers' credit use or acquisition on productivity (income) (Nkonya *et al.,* 2011).

The Tobit model used in this analysis was specified as:

$$Y_i^* = X_i\beta_i + \varepsilon_i \quad (1)$$

$$Y_i = Y_i^*$$

$$Y_i^* = \alpha + \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \text{----------} + \beta X_n + \varepsilon_i \quad (2)$$

Y_i^* were the latent variables generated by the regression model

Hence: $Y_i^* = \beta A_0 + \varepsilon_i \quad (3)$

$Y_i = IA^*$ if $IA^* > I\,Ao$ (4)

$Y_i = 0$ if $Y_i^* < Y_i$ (5)

Where IA = amount of credit used in Naira, and

Y_i^* = the solution to utility maximization of credit use to set of constraints per Farmer,

Y_0 = the minimum amount of credit used per farmer, ε_i are assumed to be independently normally distributed i.e. $\varepsilon_i \sim N(0, \sigma^2)$ which signifies that $Y_i \sim N(X_i\beta, \sigma^2)$. This can further be explained that the observations Y_i must be censored or truncated and the true model is not linear. Based on the Amemiya (1984) and Adesina and Zinnah, (1993) the log likely hood can for the tobit regression can be expressed as:

$LnT = \Phi f(yi)\ \Phi F(0)$ (6)

$LnT = \sum Lnf(yi) + \sum Lnf(0)$ (7)

Y_i is the observed dependent variable, where Xs are the independent variables which are specified as:

X_1 = Gender (1=Male, 0= female), X_2 = Age (years), X_3 = Household size, X = Educational level (1= Educated, 0= Otherwise), X_5 = Primary occupation, X_6 = Farming Experience (1= has farming experience, 0= Otherwise), X_7 = Source of Loan (1= Access to loan, 0= Otherwise), X_8= Loan Duration (months), X_9 = Interest Rate (%), X_{10} = Income (₦), X_{11} = Loan Condition (1= Favourable, 0= Otherwise),U_0 = the model error and is assumed to be independently distributed, i.e. N (0, σ^2).

RESULTS AND DISCUSSIONS

SOCIO-ECONOMIC CHARACTERISTICS OF FARMERS

Farmers both male (61.3%) and female (38.7%) as shown in table 1 participated in farming activities in the study area. Those involved in food and cash crops production were 25.8%, 9.7% were involved in livestock production, 8.1% were involved in agricultural processing, 16.1% in agricultural marketing while 4.8% sold farm inputs as seen in table 2. Table 2 also showed the enterprise for which loans acquired was used.

Table 1: Sex of farmers

Grace Period in Months	All Samples		Ilesa		Osogbo		Iwo	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Female	24	38.7	3	17.6	17	54.8	4	28.6
Male	38	61.3	14	82.4	14	45.2	4	71.4
Total	62	100.0	17	100.0	31	100.0	10	100.0

Source: Field Survey 2013/2014.

Table 2: Enterprise for which loans was used.

Enterprise	All Samples		Ilesa		Osogbo		Iwo	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Crops (Food & Cash)	16	25.8	7	41.2	7	22.6	2	14.3
Livestock Production	6	9.7	1	5.9	5	16.1		
Agricultural Processing	5	8.1	1	5.9	4	12.9		
Agricultural Marketing	10	16.1			5	16.1	5	35.7
Selling of Farm Inputs	3	4.8			1		3	21.4
a ,c, d	14	6.5	2	11.8	2	6.5		
No Response	18	29.0	6	35.3	8	25.8	4	28.6
Total	62	100	17	100	31	100	14	100

Source: Field Survey 2013 / 2014.

Farmers (66.1%) were able to improve on output based on the acquisition of credit as shown in table 3, below. While in table 4, 27.4% of the respondents were able to plough back as a result of loan acquisition; and 22.6% used the proceed from their farming activities as educational support.

Table 3: Benefit Derived from Credit Acquisition

Benefits	All Samples		Ilesa		Osogbo		Iwo	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Improved output	41	66.1	11	64.7	23	74.2	7	50.0
Stay in business	2	3.2	1	5.9			2	14.3
More investment	4	6.5	12	70.6			3	21.4
No Response	15	24.2	5	29.4	8	25.8	2	14.3
Total	62	100.0	17	100	31	100.0	14.0	100.0

Source: Field Survey 2013/ 2014.

Table 4: Profitability of Enterprise Due to Loan

Other benefits	All Samples		Ilesa		Osogbo		Iwo	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Plough back	17	27.4	3	17.6	8	25.8	6	2.9
Diversification	6	9.7	3	17.6	2	6.5	1	7.1
Educational Support	14	22.6	5	29.4	8	25.8	1	7.1
Poultry Houses	3	4.8			3	9.7		
a – c	4	6.5			1	3.2	3	21.4
b – d	2	3.2	1	5.9	1	3.2		
No Response	16	25.8	5	29.4	8	25.8	3	21.4
Total	62	100	17	100	31	100	14	100

Source: Field Survey 2013/ 2014.

The oldest farmer in the study area was in the age range 41-60 (Table 5) years. This in effect showed that there is a need for more farmers aged between 21 and 40 years to be given more incentive and encouragement to participate in farming activities. Farmers (79.1%) with household size 4-7 were in the majority as shown in table 6.

Table 5: Age of farmers in years

Age in years	All Samples		Ilesa		Osogbo		Iwo	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
21 – 40	17	27.3	3	29.5	6	19.2	6	42.7
4 1 – 60	38	61.2	10	59	67.8	7	7	49.7
61 – 80	7	11.2	2	11.8	12.8	1	1	7.1
Total	62	100	17	100	100	14	14	100

Source: Field Survey 2013/2014.

Table 6: Household Size

Household size	All Sample		Ilesa		Osogbo		Iwo	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
0-3	6	9.7	1	5.9	3	9.7	2	14.3
4-7	49	79.1	15	88.1	26	83.9	8	57.1
>8	7	11.3	1	5.9	2	6.4	4	28.5
Total	62	100.0	17	100.0	31	100.0	14	100.0

Source: Field Survey 2013/2014.

Table 7: Primary occupation

Primary occupation	Examples						Iwo	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Farming	33	53.2	12	70.6	16	51.6	5	35.7
Transporter	2	3.2			2	6.5		
Selling of farm input	20	32.3	1	5.9	11	35.5	8	57.1
Civil servant	6	9.7	4	23.5	1	3.2	1	7.1
Private practice	1	1.6			1	3.2		
	62	100.0	17	100.0	31	100.0	14	100.0

Source: Field Survey 2013/2014.

This research was able to identify sources of credit to farmers in the study area as rotational savings associations/monthly contributions, profit, plough back which can be classified as informal sources of credit. Some respondents obtained collect loans from the formal sources but not as frequently as from the informal sources. Examples of these formal sources were the Banks, co-operative, NGOs, State Ministry of Agriculture. The mean interest rate charged by credit providers in the study area was approximately 5 percent for each loan given and this seemed affordable to the credit users who patronised the informal credit providers as compared to the interest rate charged by their formal counterparts (18-35%). The mean amount of loan given by the credit providers ranged from ₦20, 000 to ₦100, 000, and the loan duration in months is more than a year. Income generated by the farmers was used as a measure of productivity, and the minimum per annum was found to be N20, 000.

Table 8: Sources of Funds

Sources	All Samples		Ilesa		Osogbo		Iwo	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Cooperative Banks	3.0	4.3	3.0	12.5	15.0	45.5		
Monthly Contributions,	20.0	29.0	5.0	20.8			4.0	33.0
Plough back	13.0	18.8	7.0	29.2	3.0	9.1	3.0	25.0
Profit	16.0	23.2	8.0	33.3	4.0	12.1		
Ministry	1.0	1.4			2.0	6.1		
Banks	2.0	10.1	1.0	4.2				
Grants	7.0	2.9			3.0	9.1	4.0	33
Bank deposits	6.0	8.7			5.0	15.2	1.0	8.3
Deposits, Grants, Savings	1.0	1.4			1.0	3.0		

Total	69.0	100.0	24.0	100.0	33.0	100.0	12.0	100.0

Source: Field Survey 2013/2014.

TOBIT REGRESSION RESULTS

The male to female ratio had a negative but significant effect on loan acquisition in this study; there was a 10percent level of significance with credit use (1.233) and gender of respondents from the Tobit regression outcome. This typified the extent of male to female participation in farming activities that would warrant the use of credit. This further implied that for a farmer to be male reduced the farmers' request for an acquisition of credit by 1.23. This is however contrary to the fact that there were more male farmers in the inferential statistics obtained from this study, which should have been a reason for more credit demanded. It, however, corroborates the outcome of Khandker and Binswanger (2011) that women value more finance and use of credit in production and for productive activities.

Age a continuous variable had no significant effect on credit acquisition of farmers, with a coefficient value of 0.989; this implied that credit use was not limited to any age group among the respondents sampled. Household size was significant at 1percent as shown in Table 10. It had a negative sign indicating an inverse relationship with credit use. This can be explained as smaller households would be easier to manage and overall demand for basic necessities will be lesser (Akwaa-Seki, 2013). While credit consumption would be relatively higher for larger households thus giving rise to a higher need of credit which may be an explanation for the significance of the coefficient (0.623) at 1percent.

Educational level with a coefficient of 0.639 (Table 9) was not significant at any level; the number of years in school did not impact on loan acquisition in this study. The result also showed that respondents were involved in other activities apart from farming in consonance with the research of Salmann (2012). Farming experience significant at 5percent was a determinant (0.858) of loan acquisition; thereby suggesting that a farmer who had increased productivity as his main goal but with limited cash resources would seek out other means of improving on him/herself; hence the reason why many farmers who had a good number of years in farming embraced credit as a means of mitigating on farming problems.

Sources of the loan had no significance from the Tobit regression outcome, the time duration before loans were paid back was significant (0.281) 1percent. The interest rate was significant and positive with a coefficient of 0.387 at 1percent. The positive nature of the

interest rate coefficient could be as a result of respondents' dealings with informal sources of credit, who charged lower interest rates with less stringent loan conditions. Therefore an increase in interest rate by these informal sources was acceptable since it wasn't as high when compared to the interest rates from Banks and other formal finance houses (Boateng and Oduro, 2018).

Conditions under which loans were given were significant (1.290) at 1percent. The loaning conditions could be seen as good or stringent. Many of the farmers found the loaning conditions of informal sources better compared to formal sources whose loaning conditions were more stringent. The Tobit regression showed that there was a significant relationship between age, household size, farming experience, loan conditions, interest rate and loan duration on the acquisition of credit by the farmers to increase productivity and income. Interest rate which was expected to have a negative relationship with credit acquisition was, however, positively related to the acquisition of credit based on the Tobit regression results. This was as a result of farmers' patronage of informal sources of credit than the formal sources. This can further be explained as loaning conditions and duration of informal sources was more favourable compared to the formal sources[8].

Table 9: Parameter Estimates for Tobit Regression Model.

Variable	Coefficients	t – value
Sex	- 1.233	- 1.910**
Age	- 0.989	- 0.249
Household size	- 0.623	- 2.740***
Educational level	0.639	0.898
Primary Occupation	0.486	0.650
Farming Experience	0.858	2.346**
Sources of loan	0.630	0.840
Loan Duration	0.281	6.442***
Interest rate	0.387	5.663***
Loan Income	0.761	1.490
Loan Condition	1.290*	1.686*

Source: Field Survey 2013/2014.

[8], However, the amount of credit received from these sources is smaller when compared to that from the formal credit providers.

Note: *** = significant at 1percent; ** = significant at 5percent; * = significant at10percent.

CONCLUSIONS

This study was able to show that there were more males (61.3%) farmers than females (38.7%), more farmers (79.1%) had a household size in the range 4-7; farmers in the age group 41-60 years was 61.2%. Farming (53.2%) was the major activity of the respondents, with plough back (27.4%) and educational support (22.6%) recorded as the profit acquired after acquisition of credit. Farmers (66.1%) were able to achieve improved output as the benefit derived from acquisition of credit. It was also discovered that the minimum amount of money that accrued to a farmer as income was in the range of ₦10, 000 – ₦20, 000 (not monthly depending on the planting season).

RECOMMENDATIONS

There is a need to create more awareness for female farmers on the need to acquire credit to increase productivity. It is also suggested that credit conditions for female farmers be greatly reduced to engage them. There is a need to support farmers who have more experience in farming as well as those in the process of starting up based on the outcome of this research.

REFERENCES

Adegeye, A.J and J.S. Dittoh (1985). Essential of Agricultural Economics. Impact Publishers Nigerian. Ltd. Ibadan.

Akwaa-Sekyi Ellis Kofi (2013). Impact of Micro Credit on Rural Farming Activities: The Case of Farming Communities Within Sunyani Area Management Science and Engineering Vol. 7. No. 4, 2013, pp. 23-29, ISSN 1913-0341 (Print), ISSN 1913-035X (Online) DOI:10.3968/j.mse.1913035X20130704.2975.

www.cscanada.net, www.cscanada.org.

Amemiya T (1984). Tobit Models: A Survey. Journal of Econometrics. 1984; 24(1): 3-61.

African farmers Journal, (2008). Agricultural Credit Guarantee Scheme fund (2009) Annual report.

Afolabi, J.A.and Hassan Mamman (2014). "The Dynamics of saving in a deregulated Economy: The case of Nigeria" NDIC Quarterly 4(4):34-55.

Aliou.D, Mansfred.Z. and Manohar.S. (2000). Empirical Measurement of Households' Access to Credit and Credit Constraints in Developing Countries: Methodological Issues and Evidence FCND DP No. 90.

Awoyemi O. (2011). "Problem of Agric Finance in Nigeria" A paper presented as the proceedings of a seminar organized by International Institute of Tropical Agriculture (IITA) Ibadan.

Boateng Ernest Yeboah and Oduro Francis T. (2018). Predicting Microfinance Credit Default: A study of Nsoatreman Rural Bank, Ghana, Journal of Advances in Mathematics and Computer Science, 26 (1): 1-9, 2018; Article no JAMCS.33569, ISSN: 2456-0068)

Ehui, S.K. and D.S.C Spencer (2011). Indices for measuring the suitability and Economic viability of farming systems RCMP, IITA Ibadan.(Finance for the Poor June 2006 Volume 7, November 2).

FAOSTAT Database, (2008). FAO (Food and Agriculture Organization), Rome. Downloaded on January 12, 2010 from http://www.beta.irri.org/statistics.

FOS (2009:2). Poverty and the Agricultural sector, Nigeria federal office of statistics, Abuja.

Idachaba, F.S. (1994). The Dilemma of fertilizer subsidizes in African Agriculture. A paper delivered at the international fertilizer industry Association Conference at Dakar, Senegal.

Ikpi, A.E.and J.K. Olayemi, (1995). "Sustainable Agriculture and Economic Development in Nigeria."

Khandker S.R and Binswanger, H.P (2011). The Effect of formal credit on output and Employment in Rural India. "Working papers in Women development" Pp.277.

Livelihoods and Food Security Trust Fund (2016). UNOPS Fund Management Office, 12(0) Pyi Thu Lane, 7 Mile, Mayangone Township, Yangon Myanmar.

NISER, (2014). Nigerian Institute of Social and Economic Research Proposal on RUFIN 2014.

Nkonya.E, and E. Kato (2011). Agricultural Inputs Marketing in Uganda. A Paper presented at the international Policy Research Institute (IFPRI) workshop, June 25 – 26, Kampala, Uganda.

Olayide S.O and Heady E.O (2006). Introduction to Agricultural Production Economic Ibadan University Press Publishing House, University of Ibadan, Ibadan, Nigeria. ISBN 918 121 0974 © Samson Olajuwon Olayide and Earl Orel Heady, 2006.

Oshuntogun and Oludimu (2010). Food Production in Nigeria. Report of Agricultural Statistic Task force, Ibadan. Pp.241-244.

Salman, K.K (2012). Do Microenterprises reduce poverty in rural Nigeria? ARPN Journal of Agriculture and Biological Sciences © 2006-2012 Asian Research Publishing Network (ARPN). All rights reserved. ISSN 1990-6145 VOL. 7, NO. 6, JUNE 2012.

Schmidt-Hebbel, K; L, Sewen and A. Salimano (2006) "Saving and Investment: Paradigms, puzzles and polices "The World Bank Research Observer 11(c): 87-117.

Tobin, J. (1958):"Estimation of Relationships for Limited Dependent Variables", Econometrica 26, 24-36.

Ugochukwu Ibe Winner. C. (2013): A research project presented to the department of economics, Faculty of Management and Social sciences, Caritas University Amorji-nike Emene, Enugu state.

World Bank Report (2013): In World Development Indicators (2013 Edition).

Yazdani, S. and K. Gunjal (2008) 'Farm Credit and the factors affecting the uptake of loans by farmers in Iran" Savings and Development 3(XXII): 263-277.

Zeller.M, Schrieder.G, Von-Braun. J. and Heidhues. F. (2013). Rural Finance for food Security for the Poor: Implication for Research and Policy" International Food Policy Research Institute. Washington D.C.

APPENDIX

Table 1: Socio-economic and Demographic Variables used in the Tobit Model.

Variables	Unit or Type	Description
Gender	Binary	1 = if gender is male 0 = otherwise
Age	Continuous	Age of household heads in years
Household size	Continuous	Number of individuals in each household
Educational Level	Binary	0 = No formal education 1 = Formal education
Primary Occupation	Binary	1 = Farming 0 = Otherwise(selling of farm inputs, Transporter)
Farming experience	Continuous	No of years in farming business
Source of Loan	Binary	1 = formal sources of loan 0 = Informal sources of loan
Loan Duration	Continuous	Time taken before loan is paid back
Interest rate	Continuous	Different interest rates charged by credit sources
Income	Continuous	Amount generated from activities involved in
Loan Condition	Binary	1 = Good 0 = otherwise

Source: Field Survey 2013/2014.