Socio Economic Determinant factors to Access to credit by Livestock farmers in Ivo Local Government Area of Ebonyi State, Nigeria

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Abstract

Analysis of access to credit by livestock farmers in Ivo Local Government Area of Ebonyi State, Ngeria was studied. Specifically, the objectives were to describe the socioeconomic characteristics of the farmers; identify the types of livestock kept by farmers; determine the effect of socio-economic characteristics of farmers' on their access to credit and identify the constraints to credit access by the farmers in the study area. The objectives I, II and III were realized using descriptive statistics such as percentage and frequency distribution table, objectives IV and V were analyzed using Logistic regression model analysis and Factor analysis respectively.120 farmers were randomly selected from 10 villages in Ivo Local Government Area. The result showed that most of the respondents were old, males, educated, married and had moderate farming experience. Among the selected livestock reared by the farmers were arranged in the order of importance; goats, pig, and sheep. The determinant factors to farmers' access to credit were off farm income, level of education, farming experience and membership of organization. The problems facing the farmers' access to credit were lack of collateral security, high interest rate, administrative bottleneck and late disbursement of loan. Based on the findings, the following recommendations were proffered, there is need to give farmers soft loan at reduced interest rate, forms were advised to form cooperative organization for ease access to credit and the need to enhance farmers' access to education through adult education, workshops and seminars.

Keywords; *Socio - economic, Determinant factors, Access, Credit, Livestock farmers.*

Introduction

Agriculture remains the bed rock of economy of many countries in sub Saharan Africa, with livestock rearing becoming prominent (Food Agriculture Organisation, (FAO), 2012). Livestock is one of the fastest growing agricultural subsectors in developing countries with its share of agricultural GDP is already 33 per cent and is quickly increasing. This growth is driven by the rapidly increasing demand for livestock products, this demand being driven by population growth, urbanization and increasing incomes in developing countries (Reynolds and Kaufman, 1998; FAO, 2012). Livestock are domesticated animals in an agricultural setting to produce labor and commodities such as meat, egg, milk, fur, leather, leather, jewelly, and wood (Apiu, 1994). It includes" cattle, sheep, goats, swine, poultry (including egg-producing poultry) and equine animals, which is used for food or in the production of food, fish used for food, and other animals (FAO, 2011). The small scale farmers dominates production of livestock sectors especially the small stock animal sub sector. The small holder agricultural sector plays an essential role in ensuring food security, economic growth and employment creation (Mcallister and Top, 2012). The production and productivity potentials of this farming population is dwarfed by among other constraints poor access to credit (FAO, 2012).

Credit is the ability according to Oladele, (2002) to obtain goods and services or money now in exchange for promise of payment in future. Loan is defined as obtaining control over the use of money, goods and services at the present in exchange for a promise to repay at some future date (Central Bank of Nigeria, 2005). Borrowed agricultural fund popularly called credit is a pre-requisite to stimulate the growth of agriculture by its contribution to the modernization of the sector through provision of new technologies to replace crude ones, strengthen the position of the farmers in dispensing with his livestock,(Ogunbayo and Nwajiaku, 2000) take full advantage of seasonal price variation and posses better bargaining power, adopt improved agricultural practices and thus improves production standards, enhances output and promotes standard of living by breaking vicious cycle of poverty among small-scale farmers (Oladele, 2002 and Okunade, 2010),consumption expenditure especially during off-season period, increasing access to basic social service

and enhances the wellbeing of the farmers, also expanding their farm and increasing output (Adebayo and Adeola, 2010)Nigeria, several sources of credit exist including, formal (such as commercial banks, microfinance banks, the Nigeria Agricultural and Cooperative Rural Development Bank (NACRDB), and state government-owned credit institutions); (b) semiformal (nongovernmental organizations-microfinance institutions (NGO-MFIs) and cooperative Societies) and informal (money lenders, and rotating savings and credit associations (RoSCAs)) (Davdo, 2012). The access to credit according to Awoke (2004) are affected by lack of collateral, high administrative cost and perceived high risks associated with agricultural and small scale farmers. Empirical studies show that access to credit is affected by among others farers' socioeconomic characteristics, including level of education, income, size of loan, household size, sales of livestock, off - farm income and among others (Ajibefun and Adennola, 2004, Nto and Mbanasor, 2008; Okunade, 2010; Anozie, *et al*; 2014). It is the livestock farmers' socio-economic characteristics that affect their access to credit in the study area that this study tends to determine, as information related to that effect is very scanty.

Specifically, the objectives of the study were to:

(I) describe the socioeconomic characteristics of the farmers;
(II) identify the various sources of loan available to the farmers
(III) identify the types of livestock kept by farmers;
(IV) determine the effect of socio-economic characteristics of farmers' on their access to credit and
(V) identify the constraints to credit access by the farmers in the study area.

Materials and Methods

Ivo Local Government Area of Ebonyi State, Nigeria was the study area. Ivo Local Government Area is located in latitude $5^{0}56^{1}$ and $6^{0}59^{1}$N and Longitude $7^{0}35^{1}$ and 7^{0}4E. It covers an area of 3506sqkm^{2} with population of 220,919 people (NPC 2006). The rainfall ranges from 1500-2500mm, temperature ranging from 28-45^{0}c and moderate relative humidity of 65%. It comprises of five (5) autonomous communities and many villages. Ivo Local Government Area is bounded in the North by Ohaozara, Aninri and Awgu Local Government Areas, in the south by Bende and Afikpo South Local Government Areas, in the East by Onicha Local Government Area and in the West by Umunneochi and Isuikwuato Local Government Areas of Abia State. The Ivo Local Government Areas are mainly agrarian and engage other economic activities such as hunting, vulcanizing, mechanic, petty trading and barbering.Most of the farmers procure loans from Ishiagu microfinance bank located at Ishiagu.Multistage random sampling technique was used in selecting villages and respondents. In stage 1, ten (10) communities were selected out of 19 communities. One hundred and twenty (120) questionnaires was distributed to twelve (12) randomly sampled livestock farmers from each of the ten (10) villages of the study. This made a total of 120 livestock farmers for detailed studies. Structured questionnaires and informal or oral interview were used to collected primary data. Secondary source was obtained from the review of related literatures such as text books, published and unpublished works, conference papers, research results and journals.The objectives I and ii were realized using descriptive statistics such as percentage, frequency distribution and tables, while objectives iii was analyzed using Logistic regression model. Objective iv was addressed using Factor analysis.

Model Specification
Logistic Regression Model

The Logistic regression model is used to determine access to credit as well as the predicted probabilities of access to credit (likelihood of access to credit). The dependent variable in the empirical model is whether or not the farmer have access to credit or not and the logistic regression characterizing access to credit by the sample farmers is specified as follows:

$E(Yi) = P(Yi) = e\alpha+\beta Xi / 1 + e\alpha+\beta Xi$…….....(1)

Pi is the probability of the ith farmer with ith attributes likely to have access to credit
E(Yi)+P(Yi)=1, where Yi =1 if the individual farmer have access to credits and Yi = 0 if the individual farmer does not have access.;
Xi represents a vector of characteristics or attributes associated with the ith individual. βi is

the vector of the estimated coefficients. The regression model is linearlized as follows;
In (pi/ (1- pi) = βo + β1X1 +β2X2…β8X8 + ε……(2)

The dependent variable is the natural log of the probability of having access (P) divided by the probability of not having access (1-P). βo is the intercept term, and β_1, β_2…….β_8 are the coefficients associated with each explanatory variable, X_1, X_2……X_8.
The formation of the logistic model was based on the hypothesis that a farmer's decision to Have access or not at any time is influenced by the combined effect (simultaneous) effect of hypothesized socio-economic factors. The variables that were used in the logistic model were estimated using the maximum likelihood method.
Explicitly logistic regression model can be represented as $Y = X_1 + X_2 + X_3 + X_4 + X_5 + X_6 + X_7$ ---------- X_n ……..(3)

Y = access to loan (dummy)
X_1 = Age of the farmers (yrs)
X_2 = level of education (yrs)
X_3 = flock size (No.)
X_4 = farming experience (yrs)
X_5 = Gender (dummy)
X_6 = membership of cooperative (membership; 1 and otherwise; 0)
X_7 = Off - farm income (Access; 1 and otherwise; 0)
X_8 = Extension Agent(Access; 1 and otherwise; 0)

Factor analysis Model

Factor analysis model was employed to identify the constraints experienced by Livestock farmers' access to loan, principal component factor analysis with varimax –rotation and factor loading of 0.3 was used. The constraints observed by farmers were grouped into three factors using varimax rotation and factor loading of 0.30. The principal component factor analysis model is stated thus

$C_1 = a_{11} f_1 + a_{12} f_2 +$----------$a^1n f_n$…….. (4)

$C_2 = a_{21} f_2 + a_{22} f_{2+}$ ----------a^2nfn……..(5)

$C_3 = a_{31} f_3 + a_{32} f_2 +$----------$a^3nf_n$……..(6)

$C_n = a_{n1} f_3 + a_{n2} f_2 +$----------$a^nnf_n$……..(7)

Where; $C_1 = c_n$= observed variable /constraints to farmers' access to credit pdts

$a_1 = a_n$ = factor loading or correlating coefficients

$f_1 = f_n$ =unobserved underlying challenging factors facing farmers' access to credit

RESULTS AND DISCUSSION

Table 1. Description of variables used in the Logistic model

Variable	**Measurement**	*A priori* expectation
Age	Age of the household head (years)	-
Educational level	No of years sent in schooling (years)	+
Household size	Number of people living in the household (Number of people)	-
Farming experience	Number of years of farming (years)	+
Flock size	Size of animal head in the the farm (Flock size)	
Extension service	No of visit by extension workers to the farm and farmers' home (1 yes, if no)	-
Marital status	Married; 1, single; 0	
Membership of Organisation	Membership of organ.; 1; otherwise, 0	+
Off farm income	Income from outside the farm, 1; otherwise; 0	+

The socioeconomic characteristics of the farmers are shown in Table 2

Table 2: Distribution of Respondents According their Socioeconomic Characteristics

Gender	Frequency	Percentage		
Male	65	54.2		
Female	55	45.8		
Age				
<29	10	8.3		8.3
30 – 39	41	34.2		
40 – 49	17	14.2		
>50	52	43.3		
Marital Status				
Single	22	18.3		
Married	73	60.8		
Divorced	11	9.2		
Widow	6	5		
Education				
Non Formal Education	8	6.7		
Primary education	13	10.8		
Secondary education	47	39.2		
Tertiary	52	43.3		
Membership of Organization				
Yes	62	51.7		
No	58	48.2		
Farming experience				
1 – 10	38	31.7		
11 – 20	68	56.7		
21 – 30	5	4.2		
31 – 40	9	7.5		
Off farm income				
Yes	90	75		
No	30	25		
Extension Services				
Contact	58	48.3		
Non Contact	62	51.7		

Source, Field Survey, 2017

Table 2 shows that 54.2% of the livestock farmers in the study area were male, while the remaining 45.8 were female. This implied that livestock production in the study area is mainly dominated by male farmers. This could be attested to the fact that livestock keeping is regarded as male business in Nigeria as a means of getting income to support their families (Ume, *et al*; 2016) The male farmers are well endowed with resource such as land than their female counterparts which could serve as collateral security in accessing for credit in order to boost their farm productivity and improved family upkeep(Ijere, 1998)

Furthermore, 43.3% of the livestock farmers sampled in the study area fell within the age of 50 years and above. This age is usually less energetic, risk averse and less adopative individual which could be a limiting factor in attaining high productivity, thus less likelihood to access for loan for probable loan defaults (Lawal; *et al*;2010). The finding ofBalogun; *et al* (2011) concurred with the assertion. They were of the opinion that low percentage of youth participation in livestock could be as a result of their low regard for farming in preference to 'white collar job,' therefore may not bother much to have access to credit to enhance the farm productivity as the interest is not.

Table 2 in- addition, revealed that 60.8% of the sampled livestock farmers were married, 18.3% were single, 9.2% were divorced, 5.0% were widow while 6.7% were widows. This implied that most of the livestock farmers in the study area were married. The married people are likely to engage in livestock production in order to meet the food and protein requirement of their families. However, married people supposed to have children, who will help to serve as source of family labour in order to reduce cost of production. Hence, given the above scenarios, married people could be easily be lured into soliciting for loan to improve their productivity for better family welfare (Nwaru; 2004). The result of the Table also showed that 43.3% of the total respondents had primary education, 39.2% attended secondary school, 10.8% had tertiary education and 6.7% did not have any form of formal education. Education and training are important factors that could enhance farmer ability to understand, accept and evaluate loan accessibility in relation to his farm productivity (Nwaru, 2004). Furthermore, education and training broaden individuals' understanding of the modalities of having access to loan (Badiru, 2010; Anozie, *et al* 2014)

. Additionally, 51.7% of the respondents were members of cooperatives societies while 48.2 % were not members of any cooperative society. Farmers' cooperative societies help in training of their members and ease of having access to credit from lending agencies at a reduced interest rate (Ijere, 1998). As well, 56.7% of the farmers studied had between 11 – 20 years farming experience, 31.7% had between 1 – 5 years of farming experience, , 7.5% had between 31 – 40 years of farming experience while 4.2% had between 21 – 30 year of experience. Years of Farming experience increases as age of the farmer increases. Age is also positively correlated with productivity as older farmers have also been observed to have higher productivity than younger farmers. This could give the farmers the greater impetus to have access to loan as they have the necessary managerial acumen to have high outputs that could be transformed to higher profit for ease of loan repay (Malgwi, 2004; Balogun and Yusuf,2011)

The result of the Table showed that 75.0% of the farmers engaged in different forms of off farm income to argument their farm income in order to boost their farm productivity, and may not be much eager to source for loan to inject into the business (Nwaru, 2004). Additionally, 48.3% of the sampled farmers had contact with extension agent, while 51.7% had no contact. Extension services help in giving farmers information on credit sources (Ume, *et al* 2016).

Table 3 shows the distribution of various sources of credit options available to farmers.

Table 3: Distribution of Respondents according to various credit sources

Variable	Frequency	Percentage
Microfinance	124	68.8
Commercial Bank	98	54.4
Money Lender	78	43.3
Personal saving	86	47.7
Friends and relations	62	3.4

Source; Field Survey; 2017

The credit from microfinance was the highest (68.8%). This could be attributed to the fact that many microfinance banks are located in many rural areas and the processes of processing loan is less cumbersome compare to commercial banks(CBN, 2005). This was followed by commercial banks (54.4 5%). The commercial banks' ability to meet the credit demands of the borrowers could be attested for the choice (Davdo, 2012). The other sources were personal savings (47.7%), money lenders (43.3%) and friends and relations (3.4%).

Table 4 shows the Livestock Type Kept by the farmers in the study area

Table 4: Distribution of Respondents According to Livestock Type Kept

Livestock	Frequency	Percentage
Goat	94	78.3
Sheep	64	53.3
Pig	72	60
Local Cow	43	35.8
Rabbit	60	50

Source; Field Survey; 2017

*Multiple Responses

The result of the table 4 showed that 78.3% of the livestock farmers in the study area were into goat rearing business. This is because goat has short gestation period, prolific and the meat is widely accepted, cheap and indeed very profitable. The West African goat (WAD) which is commonly reared in the study area is very resistant to harsh environmental conditions, resistant to tryponosomiasis and can be extensively reared without affecting its growth and productivity (Aplu, 1994). In addition, 60% of the respondents were into piggery business. This business venture is labour and capital intensives and constitutes environmental pollution through the emission of odour if not checked (Aplu 1994; FAO 2011). Furthermore, 35.8% of the sampled farmers were into local cow production. The local cow is very important in South East, Nigeria for funeral and other traditional rite. Also, 53.3% of the livestock farmers were into sheep production. Sheep is semi intensively reared in the study area, although cases of extensive rearing by some farmers cannot be ruled out (Adam and Holman, 1999). Additionally, 50 % of the total respondents were into rabbit rearing. Rabbit has efficient feed and land space utilization, limited competition with humans for similar food and high quality nutritious meat (high protein content, low fat content, low cholesterol content, low sodium (Na) content, low amount of saturated fatty acid, fine texture, Low bone to meat ratio and high digestibility) (Ume, *et al* 2016).

Logistic regression model was employed to determine factors influencing loan access among livestock farmers as shown in Table 5.

Table 5;Determinant factors influencing Access to Credit among broiler farmers in the Study Area.

Variable	Estimated coefficient	Standard Error	Z - ration	p>IZI
Constant	4.432	1.349	3.285***	0.4210
Age	**- 4.421**	2.042	- 2.165*	0.205
Marital status	0.255	0.353	0.722	0.012
Gender	0.544	0.666	0.817	0.046
Off farm income	0.526	0.462	1.1380*	0.019
Educational Level	4.213	1.201	3.507***	0.530
Farming Experience	3.106	1.112	2.793**	0.445
Membership of organization	2.666	0.401	6.648***	0.072
Extension Services	4.222	2.100	2.010**	0.390

Log likelihood -126.5498
Wald chi2 (12) 46.09

Pseudo R2 0.1732
Cases predicted correctly (%) 78.4
*Source: Field Survey, 2017, ***, **, * Significant at 1.0%, 5.0% and 10.0% levels respectively*

The coefficient of age was negatively signed and significant at 5% level of probability. This implied that any increase in age of livestock farmers will lead to 3.522% unit decrease in livestock production in the study area. This is in accordance with a prior expectation that aging farmer could be less energetic to do work and often risk averse in sourcing for loan to increase their productivity (Balogun *et al*, 2011). The coefficient of level of education was positively signed and significant at 1% level of probability.. An educated farmer is able to use modern agricultural technologies, perform farming activities based on cropping calendar, manage resource property and acquainted with modalities on how to have access to credit from lending agencies (Iqbal, *et al* 2003).

The coefficient of farming experience was positively signed and significant at 5% level of probability. However, this implied that any increase in farming experience will lead to 2.330% unit increase in the livestock production and more likelihood the farmer seeking for credit in order to enhance the productivity of the farm. This was in line with Nwaru, (2004) who opined that farmers with long years of farming experience are efficient in resource utilization; hence have more probability of seeking for loan to boost their income through improved productivity.

The coefficient of membership of cooperative society was positively signed and significant at 1% level of probability. Cooperative helps to enhance members' access to credit from financial institutions at reduce interest rate. Lawal, *et al(*2009*) and* Anozie *et al* (2014) concurred to this assertion.

As expected, the coefficient of flock size was positively signed but significant at 1%. This implies that poor resource farmers with large livestock flock size and cannot manage them, often seeks for accomplishment of such project with loan with anticipation that the profit acquired will be used to repay the loan. Off farm income coefficient was negatively signed and significant to access to credit by livestock farmers. The more a farmer participate in off farm activities, the less the probability of having interest for loan procurement as the farmer has the necessary income to inject into his /her farm. Bekel (2001) had similar result in agricultural credit access in Ethiopia. In contrary, Adams and Holman, (1999) reported that farmers with other source of income usually patronize for loan hoping that at worse, his other income streams will be used to repay the loan. Extension agent was positively signed and significant at 5% alpha level. This implies that farmers have access to extension services, the more access to technical assistance on livestock production and management he or she has, the more likelihood of expanding their production frontier through having access to loan. Furthermore ……( ) reported that extension services help to direct farmers to sources of credit at low interest rate in order to enhance their productivity.

The results in Table 6 shows varimax rotated factors militating against moringa products marketing in the study area.

Table 6.Varimax-Rotated Factors against Access to Credit in the Study Area.

Constraining Variable	Factor 1	Factor 2	Factor 3
Collateral	- 0.327*	0.0324	0.176
Price Fluctuation	0.231	0.015	0.308*
Inadequate Fund	0.433*	-1.014	0.245
High interest rate	0.567*	0.050	0.042
Short term repayment	0.289	-0.004	0.066
Administrative bottleneck.	0.598*	0.003	0.017
High cost of transportation	-0.013	0.445*	0.298
No experience	-.321	-0.308	-0.332
Low return	0.042	0.340*	0.080

Source: computed from SAS 2017.

Three factors were extracted based on the response of the respondents, Factor 1= economic/institutional factor, Factor 2 = infrastructural factor and Factor 3 = socio-financial factor (Adewanyi, 2003). Only variable with factor loading of 0.30 and above at 10% overlapping variance were used in naming the factors.This is line with the finding ( ) who are of the view that varibles with factor loading of less than 0.30 and variables that loaded more than one factor were droped. Variables that loaded more than one factor like price fluctuations and experience were discovered. .In naming the factors Grosvenior, (2006) stated that each factor is given a value based on the set of variables it is composed of. The limitations under the economic /institutional factor include inadequate fund (0.433), high collaterals(0.327), administrative bottleneck (0.598) and high interest rate (0.567). Inadequate fund was limiting factor to access to credit as complained by the respondents. This agrees with Adebayo and Adeola, (2008) who reported that inadequate availability of credits as demanded by borrowers from lending agencies especially from in formal sector was a serious limitation to credit access by the respondents in the study area. Furthermore, the problem of administrative bottleneck, Okunde, (2010)that this could lead to boredom on the side of the borrowers, hence requires great patience and perseverance to overcome the process, otherwise one could be discouraged from having access to such loan. Additionally, reacting to the problem of short repayment as complained by the respondents. Nto and Mbanasor, (2008) were of the view that it destabilizes potential borrowers from having access, since it could lead to loan default or delay in payback period of the loan and which may attract some stiff penalties.

In addition, collateral is what lenders require the borrowers to tender in case the lender defaults. Okpukpara, (2010) reported that the marketability, life and riskiness determine the attractiveness of various types of collateral (physical, hidden and social) to a lender and, hence, the amount of finance that will be available to borrower. Awoke (2004), who opined that the nature and magnitude of collaterals financial institutions demand from farmers, deter many of them especially poor resource ones from having access to credit facilities to enhance their farm productivity. Variables that loaded under factor 2 (infrastructural factor) include; low returns (0.340) and high cost of transportation (0.301) .The high cost of transportation is due to most of the formal lending institutions are located far away from the farmers who resides in the rural areas. This problem is compounded by poor road network between urban and rural areas and high pump price in most filling stations in the rural areas as against the official government pump price.This has high probability of access to credit by the farmers (Ume**,** *et al.* 2016). This means that any factor with variable loading of 0.3 and above are the important factor to be considered as serious factor militating against access to credit by livestock farmers in the study area.

Conclusion and Recommendation

It is evident from the results that majority of livestock farmers in the study area were: male, married, relatively educated, young and energetic to curtail labour or reduce cost. In addition, most of the farmers had access to credit through commercial and microfinance banks. Additionally, most of the livestock farmers reared goat, especially the West African dwarf goat. Also, interest rate, collateral, educational level, flock size and house hold size factors were the determinant factors to farmers' access to credit. Furthermore, education level, farming experience, membership of cooperative society and flock size were determinants of farmers' repayment and significantly explained output level. Farmers in the study area encountered problems of administrative bottleneck, high interest rate, inadequate fund, lack of collateral security and short term repayment of loan.

Based on the findings of this research work, the following recommendations were made

(1) Credit should be made available in time with proper supervision to avoid diversion into nonagricultural ventures.

(2) Banks should reduce their interest rate so that farmers can easily have access to loan for procurement of farm inputs and payment of labour.

(3) The need to encourage farmers to form cooperatives in order to have easy access to credit and reduced interest rate.

(4) There is need to enhance farmers' access to education through adult education, seminars and workshop to enable the farmers be equipped with information on credit availability.

(5) There is need to encourage farmers with large flock size to solicit for credit for efficient management of their flocks for high production to ensure.

(6) There is need for banks and other lending agencies to make their loans physical collateral free but could use social collateral to make loan less risky.

REFERENCES

i. *Adams, A.O. and Holman, P.J. (1999), Livestock production and agricultural credit guarantee scheme funds. Journal of International Farm Management 3 (2)*

ii. *Adebayo, O.O and Adeola, R.G. (2008). Sources and uses of agricultural credit by small scale farmer in Sumcere L.G.A of Cross River State. Journal of anthropology 10(1);313 -316.*

iii. *Adebayo, O.O and Adeola, R.G. (2010). Sources and uses of agricultural credit by small scale farmer in Boki L.G.A of Oyo State. Journal of anthropology vol (10) Pp 313 -316.*

iv. *Adewanyi, D S.(2003) Antioxidant Properties of arious Solvent extract of total henol constituents from three different Agroclimatic origin of Drumstick Tree (Moringa oleifera Lam):Department of Aquaculture systems and Animal Nutrition. University of Hohenhim (480b),D-70593 Stuttgart,Germany. 2003; 45p.*

v. *APLU, (1994). Livestock production and range research in Botswana Ministry of Agriculture. Gaborone Botswana*

vi. *Anozie, R O, **Ume,** S I, Okelola, O E, Anozie, S N and Ubani, S I (2014)Determinant factors in loan disbursement to yam(Discorea Spp)farmers in Ehime Mbano, ImoState. A case study of Nsu Micro finance Bank. Taraba Journal of Agricultural Research. 3: 14 - 18 . Otajar.Publication.Email tajar2011@yahoo.com.tajar2011@gmail.cum*

vii. *Awoke, M.U. (2004). Factors affecting loan acquisition and repayment patterns of small holder farmers in Ikah North-east of Delta State Nigeria. Journal of Sustainable Tropical Agricultural Research, Vol. 9, 61-64.*

viii. *Badiru, I.O. (2010). Review of Small Farmer Access to Agricultural Credit in Nigeria: NigeriaStrategy Support Program Policy Note No. 25. International Food Policy Research Institute*

ix. *.Balogun O.L, Yusuf S.A; Omonona B.T, & Okoruwa V.O. (2011). Social Capital and MicroCredit Effects on Poverty among the Rural Households in SouthWest States,Nigeria. ARPN Journal of Agricultural and Biological Science, 6(3).34- 42*

x. *Balogun, O.L. and Yusuf. S.A.(2011) Determinants of demand for microcredit among the rural households in South-Western States, Nigeria. Journal of Agriculture and Social Sciences, 7, 41–48*

xi. *Bekel, H. (2001). Factors influencing the loan repayment of loan by small holders in Ethiopia. M.Sc. Thesis, Alemaya University Ethiopia. Pp.32-36.*

xii. *C.B.N (2005). Baseline survey of micro finance institution in Nigeria CBN Publication Lagos.*

xiii. *Chirwa, E.W. (1997). Econometric analysis of the determinants of agricultural credit repayment in Malawi. African Review of Money, Finance and Banking. No. 1-2, 107-123.*

xiv. *Davdo, J. (2012). Informal finance in Africa. A survey of group lending schemes draft paper. U.K. pp24-26.*

xv. *Enete,A.A and Amusa, T.A (2010).Determinants of Women's Contributions to farming Decision Among Cocoa –based Agroforestry Households in Ekiti State .Nigeria FACTS Reports,4(1). 2010.3p.*

xvi. *F.A.O (2012). A guide to Agricultural credit in Nigeria. Ibadan, volume pp 70-80*

xvii. *FAO (2011). Livestock development for food security. Food security through sustainable crop production and livestock development. Final technical report on livestock fodder production activities in Afghanistan Rome.*

xviii. *Grosvenor, A S. (2006)Health benefits of moringa Article (pdf) in Asia pacific journal of cancer prevention APJCP. 2006; 15 (20):8571-6*

xix. *Ijere M.O. (1998). The lessons of the state credit institutions in developing countries; the Nigerian exposition. Agricultural Administration. Volume 1 Pp 25-29*

xx. Iqbal, M., Ahmad, M. & Abbas, K. (2003). The impact of institutional credit on agricultural production in Pakistan. The Pakistan Development Review, 42(4), 469-485.

xxi. Lawal, J.O., Omonona, B.I, Ajani, O.I and Oni, O.D. (2010). Effect of social cost on credit accessibility among livestock farming household in Osun State, Nigeria. Agricultural Journal, 1 (4). Pp 184 -191

xxii. Malgwi, C.J. (2004). Analysis of factors influencing agricultural loan division among women beneficiaries of formal loan programme in KADUNA State, Nigeria. Unpublished M.Sc thesis Ahmadu Bellow University Zaria.

xxiii. McAllister, T.A, and Topp, E. (2012). Role of livestock in microbiological contamination of water. Commonly the blame, but not always the source. Animal FrontiersI, 2(2), 17 -27.

xxiv. National Population Commission (NPC) (2006). Statistical Bulletin of Nigeria Population census.

xxv. Nto, P.O. and Mbanasor, J.A. (2008). Determinants of credit procurement among rural farmers in Abia State, Nigeria. Proceedings of the 43rd Annual Conference of the Agricultural Society of Nigeria, Abuja 2009. P 345

xxvi. Nwaru, J.C (2004). Determinants of information credit demand and supply among food crop farmers in Akwa Ibom State Nigeria. Journal of rural and community development 6(1) 129 -139.

xxvii. Okpukpara, B. (2010). Credit constraints and adoption of modern cassava production technologies in rural farming communities of Anambra state, Nigeria. African Journal of Agriculture Research 5(24): 3379-3386.

xxviii. Ogunbayo, A.O. (2003) and Nwajiaku, O. (2000). Rural credit market and resource use in Arable production in Imo State of Nigeria Ph.D Thesis. Michael Okppara University of Agriculture, Umudike, Nigeria.

xxix. Okunade, E.O. (2010). Gender analysis of the effect of institutional credits on the cassava farmers in Iberapa, East L.G.A of Oyo State. Proceeding of the 44th Annual conference of Agricultural Society of Nigeria, AUTECH 2010, pp 515 -522

xxx. Oladele, O.I. (2002). Agricultural loan and Economics Development. Reading in Agricultural Finance, University of Nigeria Nsukka: center for Rural Development and Cooperatives. Science, 4(4), 233-244.

xxxi. Reynolds, L.K. and Kaufman, K.R. (1998). Research for livestock development in the humid and sub-humid regions of Nigeria.

xxxii. Ume, S.I., Okoronkwo, M.O. and Ulo, E. (2016). Adoption of Improved Rice Production Technologies by farmers in Anambra State. Ebonyi Technology and vocational Education Journal 4 (2); 23-36

*xxxiii. **Ume** S. I, Onyekwere M.U., Okoye F.U, Eluwa A.N(2016).Economics Efficiency of Rabbit (OryctolagusCuniculus)Production in Anambra State, Nigeria (A Stochastic Frontier Profit Function Approach)International Journal of Environment, Agriculture and Biotechnology(IJEAB)1(3);345– 378.http://dx.doi.org/10.22161/ijeab/1.3.2639*