International Journal of Agricultural Research and Food Production
ISSN: 2536-7331 (Print): 2536-734x (Online)
Volume 9, Number 2, June 2024
http://www.casirmediapublishing.com

Analysis of Loan Utilization among Small-Scale Rice Farmers in Benue State, Nigeria

Fanyam, A.A[1], Atagher, M.[1] and Nyietagher, Z[1]
[1]Department of Agribusiness Management,
Joseph Sarwuan Tarka University, P.M.B 2373, Makurdi, Benue State, Nigeria
Email: fanyamalex@gmail.com

ABSTRACT
The study analysed loan utilization among small-scale rice farmers in Benue State, Nigeria. A multi stage sampling technique was used in randomly selecting 222 respondents. Data were obtained using structured questionnaire. Data collected were analyzed through the use of descriptive statistics such as frequencies, mean, percentages. The inferential statistics deployed was Ordinary lead square multiple regression analysis. Results showed that majority of the respondents (58.11%) were males. The mean age distribution of rice farmers was 33.25years. The educational level of respondents revealed that they were literate with 52.25% having obtained formal education. Majority of the respondents (53.2%) were married. Purchase of seeds was rated as the highest (Mean=3.25) level of loan utilization expenditure pattern in the study area. The result also revealed that, the variables that significantly influence credit utilization among small-scale rice farmers in the study area were age (β = 0.09) positively significant at 5%, farm size (β = -0.10) negatively significant at 5%, amount of loan collected (β = 0.41) positively significant at 1%, repayment period (β = 0.03) positively significant at 1%, and interest rate (β = 0.19) positively significant at 5% level. It was concluded that, small-scale rice farmers utilized their loan for agricultural activities to increase productivity, income and standard of living. The study therefore, recommended that, government should formulate policies that will favour small-scale rice farmers in terms of loan resource procurement and utilization irrespective of gender and that, educated farmers of productive age should concentrate utilization of loan more on farming activities.
Keywords: Agriculture, loanable fund, interest, Farmers, Small-scale, Utilization

INTRODUCTION
Agriculture is the most important sector of the Nigerian economy from the standpoint of its numerous contributions to the socioeconomic development of the Country. These include the provision of food for the teeming population, employment and income generation, provision of raw materials for the agro-industries and contribution to the nation's Gross Domestic Product. About 70% of the Country's population is engaged in agriculture, National Bureau of Statistics (NBS, 2006; Adesina, 2011). And the contribution of agriculture to the GDP stood at 40.84% in 2010

while the CBN (2013) revealed that the sector contributed 33.30% to the GDP that year. In terms of the contribution to the growth rates of the GDP, agriculture dropped from its 2.4% in 2010 to 0.7% in 2013. These statistics clearly revealed the sorrow-state of the Nigeria's agriculture sector whose major constraint has been traced to poor funding among others. Hence, Ukwuteno et al (2011) asserted that for agriculture to play vital roles in the development of the economy, credits should be extended to the farmers for self-employed projects in agriculture. Resource poor farmers who live in rural areas and produce about 90% of the domestic food output (Daramola, 2004) dominate Nigeria's agriculture. According to Esobhawan and Alabi (2011), these farmers constitute about 80% of the farming population in Nigeria, producing at small-scale level with low capitalization, fragmented farm holdings and low yield per hectare. According to Food and Agricultural Organization (FAO, 2010), small-scale farmers may be defined as farmers that operate and cultivate not more than three hectares of land. In the similar vein, small-scale rice farmers are those farmers that cultivate rice as a major cereal crop not more than three hectares of land. They produce a substantial proportion of the national food requirement.

The study emphasizes loan utilization by small-scale farmers in rice (*Oryza sativa*) production, which remains critical to the agricultural economy of Nigeria and precisely the Benue State farmers as it plays a Vital role in the provision of staple food, generation of employment and income among others. Nigeria is noted to be the largest producer of rice in West Africa, (Pricewaterhouse corpers (PWC, 2017) with annual production increase of 0.3 million tonnes between 2015 and 2017 (Goronyo, 2017) and was expected to have commenced export to other West African countries by 2018/2019 (Ahmed, 2017). However, in the face of seemingly unsustainable improvement, PWC (2017) commented that Nigeria's import dependency is increasing exponentially coming third in the world and first in Africa with most of the importation coming from Thailand and India.

According to Boansi *et al.* (2014), current policy initiative in Nigeria is aimed at sustainable agricultural production with prompt supply of inputs (fertilizer, improved seeds and finance especially) while discouraging imports. The paradigm of rice policy in Nigeria is anchored

on surging local output and to sustain self-sufficiency. The Nigerian government initiative over the years has focused on closing the gap on rice output by encouraging self-sufficiency so as to meet the increasing local demand. Oladele and Wakatsuki (2008) conceded that, this period recorded remarkable increase in rice output but was not sufficient enough to meet the demand of the increasing population. It is worthy of note however, that policy inconsistency and multiple challenges opposing the rice sufficiency target in Nigeria especially credit/loan accessibility, utilization and repayment among others are faced by small holder rural rice farmers (PWC, 2017).

Therefore, for backstopping this important sector, capital is the real fuel that can run this important vehicle. It not only paves the way for uplifting agricultural sector but also contributes in poverty reduction (Siah *et al.*, 2011). This is more critical when the smallholder farmers are the focal point. The reason is quite obvious that without making investment in this sector there is least probability of outcomes. Rising prices of inputs like seeds, fertilizers, pesticides, machinery and labour appear as major dilemma of agricultural sector (Siah *et al.,* 2011b). The expedition in the use of more and more inputs has transformed the agricultural sector and for this purpose agricultural credit can play a vital role (Bashir *et al.,* 2010). According to Iganiga (2008), credit may be defined as enjoying control over the use of money, goods and services in the present, in exchange for a promise to repay at a future date. It is also defined as the provision of loan that is repaid within short time and is used by low-income individual and households who have few assets that can be used as collateral (Ukeje, 2005). Credit can be considered from its ability to energize or motivate other factors of production. In this light, Bashir et al., (2010) opined that, the farmers should be helped both in terms of obtaining and returning credit/loan so that they may be able to utilize it for the purpose it is meant to enhance productivity. Loan availability to farmers is of critical importance to the sustenance of the agricultural sector in Nigeria and this alludes to Central Bank of Nigeria (CBN) (2005), paradigm that credit supply is one of the major inputs to boost productivity via various credit schemes in Nigeria like: Nigerian Agricultural and Co-operative Bank (NACB) and Agricultural Credit Guarantee Scheme Fund (ACGSF).

The Central Bank of Nigeria (CBN) and Federal Ministry of Agriculture and Water Resources (FMA & WR), (2009) observed that one of the major objectives of commercial loan to agriculture is to carryout farm operations with relative ease. By effective loan/credit utilization, farmers' productivity will increase hence income and better standard of living (Alfred, 2005). The provision and effective utilization of credit can be regarded as an important instrument of raising the income of rural population mainly by mobilizing resources for more productive uses (Kuwornu *et al*, 2012).

The main challenges in agricultural credit markets in Nigeria and other developing countries are sources (formal and informal), availability and then effectiveness of its utilization for the purpose it is meant (Bashir and Azeem, 2008). Nwaru and Onuoha (2010) observed that when agricultural credit is properly extended and utilized, it can encourage diversification which stabilizes and often increases resources productivity, agricultural production, value added and net incomes of farmers. Inadequate financial projections and planning, high levels of illiteracy among farmers and inadequate access to relevant information inhibit farmers as to where, how and when to obtain credit facilities hence its effective utilization by the small-scale rice farmers. There is also lack of skilled personnel of the credit facilities to manage the credit very well, and diversion of the credit facilities to non-farm production activities by the farmers (Kuwornu *et al.*, 2012).

The broad objective of the study was to analyze loan utilization among small-scale rice farmers in Benue State, Nigeria.
The specific objectives of the study were to:

i. examine the influence of socio-economic characteristics of small-scale rice farmers on loan utilization in Benue State;
ii. evaluate the level of loan utilization among respondents in the study area;

The following null hypothesis was stated and stated;
Ho_1: Farmers Socio-economic characteristics have no significant influence on their loan utilization in the study area.

METHODOLOGY

Benue State is the study area. The state was created in 1976 and is located in the Middle Belt of Nigeria. It falls between latitudes 4° and 14°North of the equator and longitudes 2.75° and 14.5°East of the Greenwich Meridian (National Population Commission, 2006). The state shares boundaries with five other states namely; Nassarawa to the North, Taraba to the East, Cross River to the South, Enugu to the South-West, Kogi to the West. The South Eastern part of the state also shares boundaries with the Republic of Cameroon. The State has a total area of about 30955-kilometer square. The state is delineated into three geo-agricultural zones; namely, Zone A, B and C (Benue State Department of Planning and Statistics, BSDPS, 2004). Administratively, it is divided into 23 Local Government Areas with its headquarter in Makurdi. Benue State has a population of about 4.2 million people (NPC, 2006).

About 75 percent of the population live in rural areas with farming as their main occupation. Benue State has a tropical climate, which manifests two seasons. The rainy season is from April to October while the dry season is from November to March. Annual average rainfall varies from 1750mm in the Southern part of the state to 1250mm in the North with temperature ranging between 30° and 32°c. (Benue Agriculture and Rural Development Authority 1999). The state stretches across the transition belt between the forest and Savanna vegetation. Benue State is referred to as the "Food Basket of the Nation" because of the abundance of its agricultural resources. The state is a major producer of food and cash crops like yam, cassava, rice, groundnut etc. Major livestock produced include goats, poultry, sheep, pigs and cattle. Fishery activities are also carried out on river Benue and Katsina-Ala.

The population for this study comprised all the 510 small-scale rice farmers that are using Bank of agricultural (BOA) loan in Benue state (BOA Report, 2019). Multistage sampling procedure was employed to select a sample size of 222 respondents. Primary data were collected using a structured questionnaire. The objectives were achieved using descriptive statistics such as frequency, percentages and mean scores

while the hypothesis was tested using Ordinary Least Square (OLS) Multiple Regression Model.

Ordinary Least Square (OLS) Multiple Regression Model

The four functional forms were specified as follows:

Linear:

$$Y = a_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 xX_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + b_{11} X_{11} + b_{12} X_{12} + b_{13} X_{13} + b_{14} X_{14} + b_{15} X_{15} + b_{16} X_{16} + \varepsilon_i$$

Exponential:

$$\text{Log } Y = a_0 + b_1 X_1 + b_2 X_2 + b3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + b_{11} X_{11} + b_{12} X_{12} + b_{13} X_{13} + b_{14} X_{14} + b_{15} X_{15} + b_{16} X_{16} + \varepsilon_i$$

Semi-log:

$$Y = a_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + b_{11} X_{11} + \log b_{12} X_{12} + b_{13} X_{13} + \log b_{14} X_{14} + b_{15} X_{15} + b_{16} X_{16} + \varepsilon_i$$

Double-log:

$$\text{Log}Y = a_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + b_{11} X_{11} + b_{12} X_{12} + b_{13} X_{13} + b_{14} X_{14} + b_{15} X_{15} + b_{16} X_{16} + \varepsilon_i$$

Where

Y = Credit utilization (Naira)

a_0 = Constant

b_1-b_{16} = regression coefficient

X_1 = Gender (Male = 0, Female = 1)

X_2 = Marital Status (not married = 0, married = 1)

X_3 = Age (years)

X_4 = Household size (number)

X_5 = Farmer's experience (years)

X_6 = Farm size (ha)

X_7 = level of education (non-formal = 0, formal = 1)

X_8 = Off-farm activities involvement (involved = 0, not involved = 1)

X_9 = Membership of cooperative (member = 0, non-member = 1)

X_{10} = Loan Source (formal = 0, informal = 1)

X_{11} = Distance from loan source (long = 0, short = 1)

X_{12} = Amount of loan collected (naira)

X_{13} = Repayment period (long = 0, short = 1)

X_{14} = Interest rate (percentage)
ε_i = Error term

RESULTS AND DISCUSSION

Socioeconomic Characteristics of the Respondents

The socioeconomic characteristics of respondents are presented in Table 1. The results indicated that majority of farmers (58.11%) were males. This implied that there are more male rice farmers participating in institutional loan than the female farmers in the study area. The male dominance in loan utilization over the female farmers could be due to high privilege attached to the male gender by the society in terms of resource acquisition. This finding is in line with those of Asogwa *et al* (2014) and Olaleye (2000), who reported that small-scale farming is being carried out mostly by males, while females involved in light farming operations such as processing, harvesting and marketing.

The results also showed that 53.2% of the respondents were married and therefore utilized more loan on the farm than those who are not married. The marital status of the household farmers has implication on the household size and subsequently on the availability of family labour to assist on the farm. Finding is consistent with that of Aladejebi *et al* (2018) who observed that single farmers acquire less agricultural credit compared to married farmers. The result further revealed that majority (58.11%) of the respondents' household size were within the range of 6 to 10 persons with an average household size of greater than 6 members. The large household size will help the farmers not to spend much money on hired labour. This result is in agreement with Osondu *et al* (2013), who stated that, in the presence of constraints to farm labour availability, large household tend to use family members as source of labour. In this case, credit obtained could be efficiently utilized. On the other hand, large household size could lead to loan diversions resulting from increased in consumption expenses; health care and school fees payment among others; (Babalola, 2014; Babalola and Babalola, 2013; NBS, 2009.

The result also showed that most (46.40%) of the respondents had age ranging from 30-39 years with an average age of 33.4years. Age also relates with the ability to attract credit as creditors would not want to grant

credit to the teenagers and the very aged people. Farming operations requires a lot of energy and is labour intensive especially in the rural areas and are carried out by active and agile group of farmers. This finding is consistent with the reports of Alabi (2004) who reported that small-scale farmers in Oyo and Niger States respectively were at their middle age; Ezeh and Chidozie (2013) also revealed that age of the farmers, annual farm income, farm size and family size made positive contributions to the credit utilization in Imo state.

Result on farming experience showed that most (49.10%) of the farmers had between 5 to 9 years with an average farming experience of 6.85 in the study area. This indicates that most of these respondents are well grounded in the rudiments of farming and can make effective use of credit facilities given to them. Furthermore, the result implies that these farmers must gain some level of expertise which will further give them a better understanding of socioeconomic factors that affect their farming activities so as to be able to effectively utilized their loans thereby improving productivity and their standard of living. This is in conformity with Adekoya (2014), who indicated that farmers with more years of experience in farming have better knowledge of farming and the ability to utilize necessary farm inputs efficiently.

Result also shows that majority (87.39%) of the respondents had between 0 to 4 hectares(ha) of farm land while the rest (12.61%) of the farmers had within 12-14 hectares(ha) with an average farm size of 3.27ha in the study area. This result implies that rice farmers in the study area are predominantly small-scale. The result lends further credence to an assertion by Olawepo (2010) that, over 90% of the country's local food production comes from small-scale farmers with a farm size of about 0.10-5.99ha.

Majority (52.25%) of the respondent in the area had secondary school education. The result implied that respondents in the study area are literate hence, can properly utilize the acquired loan for farm work, have better understanding and use of modern technology which will later translate into better standard of living and food sufficiency in the study area. This finding agrees with Nsikakabasi *et at* (2010) who observed that

educated farmers are better adopters and utilizers of agricultural credit and innovations and tend to have higher yields and incomes from cultivated areas.

The result also revealed that majority (78.83%) of farmers engaged in off-farm activities while only (21.17%) farmers concentrate on main farm work in the study area. High participation of farmers in off-farm activities may be due to the desire to support the households' financial needs and income. Majority (53.60%) of respondents are members of cooperative societies while the rest (46.40%) do not belong to any cooperative organization. The high involvement of farmers in cooperative association in the state gives an indication of social networks availability to the farmers. These networks of social relationships determine farmers' access to credit and other sources needed for agricultural production. This disagrees with Okwoche, Asogwa and Obinne (2012) who reported that only 20% of farmers in Benue State were members of co-operative organisations.

Findings also showed that majority (60.79%) of the respondents collected loan within the range of ₦101000- ₦200000. The average loan amount collected for rice farming was ₦ 169418.92. The reason for moderate amount collected by the respondents could be due to lack collateral security to qualify them for large sum as loan from financial institutions. This agrees with the findings of Chukwuone (2005) and Wiggins (2008) that most of the rural farmers in Nigeria are small scale farmers cultivating less than 10 ha of farmland.

Result also shows that majority (56.29%) of the respondents utilized between ₦101000-₦200000 only for rice production in 2019. The average loan amount utilized for rice farming was ₦150950.45. This implies that, farmers in the study area utilize most of the loans acquired for rice production with only 11.0% diverted for domestic needs. Majority of the respondents (74.32%) lived beyond 4km from their loan source. This implies that majority of the respondents are in the remote areas far from their loan source. This finding agrees with Etonihu, Rahman and Usman (2013) who investigated the determinants of access to agricultural credit among crop farmers in a farming community of Nasarawa State Nigeria

revealed that, education, distance to source of credit and types of credit source were significant factors affecting farmers' accessibility to agricultural credit in the study area. Majority (53.15%) of the respondent made their loan repayment in 12months while the rest (46.58%) of the respondent made their loan repayment in 24months. This finding agrees with Philip et al (2009) who stated that, high interest rate and the short-term nature of loans with fixed repayment periods do not suit annual cropping, and thus constitute a hindrance to credit access.

Result also shows that 45.50%, 36.94% and 17.57% of the respondents paid 15%, 10% and 20% as interest on loan collected respectively. This implies that as smallholder farmers, they are gradually shifting away from high interest charged on loan by lenders. The result is in agreement with Kohansal and Mansoori (2009) who investigated the factors affecting loan repayment performance of farmers in Khorasan- Razavi Province of Iran. Results from a logistic model showed that loan interest rate was the most important factor affecting acquisition and repayment of agricultural loans.

Majority (56.76%) of the respondents' were not visited by loan supervisors'/Extension agents. This poor contact with extension agents may have great negative impact on growth of agriculture in the rural area. This result is in agreement with the findings of Iwuchukwu *et al.* (2013) who said that pineapple farmers in Enugu have very few contacts with extension agents.

Table 2 Socioeconomic Characteristics of Respondent (n=222)

S/N	Variable (SE)	Frequency	Percentage	Mean	Std. Dev.	Min	Max
1	**Gender**						
	Male	129	58.11				
	Female	93	41.89				
2	**Marital Status**						
	Married	129	53.02				
	Not married	93	46.98				
3	**Age group**						
	10 – 19	12	5.41				
	20 – 29	61	27.48				
	30 – 39	103	46.40				
	40 – 49	34	15.32	33.4	10.71	16	62

	50 – 59	9	4.05				
	≥ 60	3	1.35				
4	**Household Size**						
	1 – 5	66	29.73				
	6 – 10	129	58.11				
	11 - 15	20	9.01	6.85	3.17	1	17
	≥ 16	7	3.15				
5	**Farming Experience**						
	0 – 4	88	39.64				
	5 – 9	109	49.10				
	10 – 14	8	3.60				
	15 – 19	8	3.60	6.28	5.20	1	26
	20 – 24	4	1.80				
	25 – 29	5	2.25				
6	**Farm size**	*W*					
	0 – 4	194	87.39				
	5 – 9	22	9.91	3.27	2.42	0.5	20
	10 – 14	5	2.25				
	15 – 19	1	0.45				
7	**Level of Education**						
	Non Formal	12	5.41				
	Primary	38	17.12				
	Secondary	116	52.25				
	Tertiary	56	25.23				
8	**Off-farm Activities**						
	Yes involve	175	78.83				
	Not involve	47	21.17				
9	**Membership of Cooperative Society**						
	Yes member	119	53.60				
	Not member	103	46.40				
10	**Loan Amount collected for rice farming in 2019 ('000Naira)**						
	1-100	33	14.86				
	101-200	125w	56.29	169418.92	121922.5	40000	360000
	201-300	53	23.87				
	Above301	11	4.95				
11	**Loan Amount Utilized in 2019 ('000Naira)**						
	1-100	44	19.24				
	101-200	135	60.79	150950.45	64444.19	30000	350000
	201-300	41	18.47				
	Above301	2	0.90				

12	**Nearness to Loan Source**		
	0-4km	57	25.68
	Above 4km	165	74.32
13	**Repayment Period**		
	12 months	118	53.15
	24 months	104	46.85
14	**Interest Rate Charge**		
	10%	82	36.94
	15%	101	45.50
	20%	39	17.57

Source: Field Survey, 2019

The Level of Loan Utilization Among the Respondents

Result on level of utilization on a 4-piont rating scale shows that most of the mean scores were above the decision mean cut-off (Mean 2.5). Mean scores on the farming variables include: purchase of farm machinery (Mean=2.68); purchase of seeds (Meanw=3.25); purchase of farm land (Mean=2.91); hiring of laborers (Mean=2.98); processing /storage of rice (Mean=2.80); early planting of crops (Mean=2.98); early harvestiwng/threshing/winnowing (Mean=3.03); and for transportation (Mean=2.97) of farmers' produce and inputs to and from the farm. Also for non-farm activities like settlement of domestic needs such as: payment of children school fees (Mean=2.50); health care (Mean=2.60) and household consumption needs (buy clothes) (Mean=2.62). However, respondents' disagreed utilizing the procured loan for marriage (Mean=2.23) purposes in the study area. This implies that, majority of the respondents utilized agricultural loan/credit obtained for farming purposes which may positively affect the agricultural growth and productivity.

Table 3: Level of Loan Utilization Among Respondents (n=222)

S/N	Variable (L)	Frequency	Percentage	Mean	Std. Dev.	Min	Max
1	**Purchase Farm Machinery**						
	Strongly Agree	23	10.36				
	Agree	114	51.35				
	Disagree	77	34.68	2.68	0.71	1	4
	Strongly Disagree	8	3.60				
2	**Purchase of Seed**						
	Strongly Agree	64	28.83				
	Agree	151	68.02				
	Disagree	7	3.15	3.25	0.51	1	3
3	**Purchase of Farmland**						
	Strongly	12	5.41				
	Agree	178	80.18				
	Disagree	31	13.96	2.91	0.45	1	4
	Strongly Disagree	1	0.45				
4	**Hire Laborers**						
	Strongly Agree	31	13.96				
	Agree	160	72.07				
	Disagree	26	11.71	2.98	0.59	1	4
	Strongly Disagree	5	2.25				
5	**Storage/Processing of Rice**						
	Strongly Agree	23	10.36				
	Agree	137	61.71				
	Disagree	56	25.23	2.80	0.65	1	4
	Strongly Disagree	6	2.70				
6	**Marriage**						
	Strongly Agree	14	6.31				
	Agree	39	17.57				
	Disagree	153	68.92	2.23	0.67	1	4
	Strongly Disagree	16	7.21				
7	**Pay Children School fees**						
	Strongly Agree	11	4.95				
	Agree	98	44.14				
	Disagree	103	46.40	2.50	0.66	1	4
	Strongly Disagree	10	4.50				
8	**Health Care**						
	Strongly Agree	14	6.31				
	Agree	115	51.80				
	Disagree	83	37.39	2.60	0.68	1	4
	Strongly Disagree	10	4.50				

9	**Household need/consumption**						
	Strongly Agree	13	5.86				
	Agree	126	56.76				
	Disagree	68	30.63	2.62	0.70	1	4
	Strongly Disagree	15	6.76				
10	**Early Planting**						
	Strongly Agree	16	7.21				
	Awgree	188	84.68				
	Disagree	16	7.21	2.98	0.43	1	4
	Strongly Disagree	2	0.90				
11	**Early Harvesting/Threshing/Winnowing**						
	Strongly Agree	22	9.91				
	Agree	185	83.33				
	Disagree	14	6.31	3.03	0.42	1	4
	Strongly Disagree	1	0.40				
12	**Transportation**						
	Strongly Agree	14	6.31				
	Agree	187	84.23				
	Diswagree	21	9.46	2.97	0.40	1	3

Source: Field survey, 2019

Test for Significant Influence of Socioeconomic Characteristics of Farmers on their Loan Utilization in the Study Area: Hypothesis 1

The OLS multiple regression result on the influence of socio-economic characteristics of small-scale rice farmers on loan utilization is presented in Table 3. The double-log function was selected as the lead equation. The selection was based on the magnitude of R^2, the *a priori* expectation, and the large number of statistical significances of the estimated regression coefficients. The double-log function had the best fit and was selected as the lead equation for the analysis. The result in Table 3 shows that 64.77% of the variation in loan utilization was explained by the independent variables included in the double -log regression model as shown by the R^2. The implication is that 35.23% of the variations in the level of loan utilization was caused by factors not included in the model. The F-value (23.55) was significant at 1% level.

The coefficient of age was significant at 5% and positively related to loan utilization. The positive sign of the coefficient implies that as the farmer advances in age, his/her level of loan utilization increases by 0.09%. Aged farmers are more likely to have gathered long years of experience in

farming, have better knowledge of farming, as well as the capacity to use necessary inputs including loans collected efficiently. This finding is in tandem with Riaz *et al.* (2012) who observed that aged farmers were more inclined towards proper utilization of credit as compared to the younger farmers.

The coefficient of farm size was significant at 5% and negatively related to loan utilization. The negative sign of the coefficient indicates that as the farm size of the farmer increases, his/her loan utilization decreases by 0.10%. Credit utilization is expected to be high among farmers with large farm size. However, large scale farmers with low level of credit utilization are those with large household size. Such large household size increases the non-farm expenditure and divert the concentration of the farmer from farm expenditure to family welfare. This finding is in consonance with Okeke (2018) who observed a negative relationship between farm size and credit utilization. The amount of loan collected had a positive relationship with credit utilization and its coefficient was significant at 1%. This shows that as the amount of loan received increases, the level of its utilization by the farmer increases by 0.41%. Low loan amount that seems inadequate for meaningful farm work tends to be easily diverted for non-farm activities. In other words, farmers who receive large amount of credit are likely to allocate more of the credit to the farm sector than those who receive small amount of credit. This finding corroborates Kuwornu *et al.* (2012) who observed a positive relationship between amounts of credit received and credit allocation to the farm sector.

This credit repayment period had a positive relationship with credit utilization and its coefficient was significant at 1%. This shows that as the credit repayment period decreases, the level of credit utilization by the farmer increases by 0.03%. Credit repayment period that is shorter, motivates farmers to efficiently utilize the credit compared to credit repayment period that is longer. This is an agreement with Asogwa *et al.* (2014) who revealed that lack of well-planned debt repayment schedule as one of the factors militating efficient procurement and utilization of credits from formal sources. The coefficient of interest rate was significant at 5% and positively related to credit utilization. This implies that as interest on credit increases, the level of its utilization by the

farmer increases by 0.19%. High interest rate discourages farmers from accessing credit (Ololade and Olagunju, 2013; Ijioma and Osundu, 2015). However, farmers who obtain credit with high interest charge are usually motivated to efficiently allocate the credit to the farm sector in order to recoup the money spent in the form of interest in accessing the credit. This finding is in consonance with Isitor *et al.* (2014) who observed a positive relationship between loan interest and loan utilization. Thus, the null hypothesis that, Farmers Socio-economic characteristics have no significant influence on their loan utilization in the study area was rejected.

Table 7 Test for Significant Influence of Socioeconomic Variables of Farmers on their Loan Utilization Using OLS Multiple Regression Analysis n=222

Variable	Linear	Exponential	Semi-log	Double-log†
Gender	-2980.32^{NS}	-0.02^{NS}	-2284.46^{NS}	-0.01^{NS}
	(6419.06)	(0.04)	(5784.35)	(0.04)
Marital Status	-1950.50^{NS}	-0.0021^{NS}	-4418.93^{NS}	-0.02^{NS}
	(6605.02)	(0.04)	(5968.98)	(0.04)
Age	7054.72^{NS}	0.065^{NS}	10484.58^{NS}	0.09**
	(7108.66)	(0.05)	(6436.18)	(0.04)
Household size	-6767.17^{NS}	-0.05^{NS}	-6780.54^{NS}	-0.05^{NS}
	(7265.10)	(0.05)	(6568.11)	(0.04)
Farmer's experience	3278.94^{NS}	0.004^{NS}	5783.08^{NS}	0.02^{NS}
	(6653.28)	(0.04)	(6034.90)	(0.04)
Farm size	-9133.26^{NS}	-0.11**	8373.53^{NS}	-0.10**
	(7029.76)	(0.05)	(6337.46)	(0.04)
Level of education	-13468.21*	-0.08^{NS}	-10637.28^{NS}	-0.06^{NS}
	(7507.55)	(0.05)	(6801.04)	(0.04)
Off-farm activities involvement	-7046.02^{NS}	-0.06^{NS}	-3329.17^{NS}	-0.03^{NS}
	(7376.46)	(0.05)	(6699.69)	(0.04)
Membership of cooperative	313.79^{NS}	-0.01^{NS}	-2597.62^{NS}	-0.03^{NS}
	(6534.25)	(0.04)	(5923.44)	(0.04)
Loan Source	7298.44^{NS}	0.01^{NS}	6341.12^{NS}	-0.00032^{NS}
	(15281.11)	(0.10)	(13811.68)	(0.09)
Distance from loan source	-1610.42^{NS}	-0.01^{NS}	-1023.52^{NS}	-0.0095^{NS}
	(6992.53)	(0.05)	(6315.19)	(0.04)
Amount of loan collected	0.10***	5.95×10^{-7}***	59506.81***	0.41***
	(0.03)	(1.82×10^{-7})	(7675.62)	(0.05)
Repayment period	6567.78***	0.04***	5072.93***	0.03***

	(569.46)	(0.0038)	(557.26)	(0.0037)
Interest rate	2523.82***	0.02***	20901.47^{NS}	0.19**
	(939.27)	(0.0063)	(11946.88)	(0.08)
Extension contact	2996.02^{NS}	-0.02^{NS}	279.44	-0.04^{NS}
	(6222.00)	(0.04)	(5641.66)	(0.04)
Duration to access loan	2775.63^{NS}	-0.0083^{NS}	2709.42^{NS}	-0.0094^{NS}
	(6920.46)	(0.05)	(6257.92)	(0.04)
Constant	19745.23^{NS}	11.05***	-675653.90***	6.13***
	(17520.21)	(0.12)	(87307.86)	(0.58)
R^2	0.5926	0.5535	0.6663	0.6477
Adjusted R^2	0.5608	0.5186	0.6402	0.6202
F-value	18.63***	15.88***	25.58***	23.55***

Source: Field survey data, 2019. * = significant @ 10%; ** = sig @ 5%; * = sig @ 1%; NS = Not Significant; † = Lead equation. Values in bracket are standard errors**

CONCLUSION

Based on the findings of the study; it was concluded that, male farmers have dominance in the utilization of loan resources for rice farming over the female in the study area. Also, that, married farmers utilized loan resource for rice farming more than farmers that are single in the study area. Also, that, farmers that are in their average age and with many years of experience, utilized loan resources better than those that are teenagers and very old with less experienced. The study also concludes that educated farmers though could divert loan to other businesses but knows how to utilize it than the illiterate farmers in the study area. It was concluded that, the factors that significantly influence credit utilization among small-scale rice farmers in the study area were age (β = 0.09), farm size (β = -0.10), amount of loan collected (β = 0.41), repayment period (β = 0.03), and interest rate (β = 0.19) hence, alternative hypothesis accepted.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made:

i. Relevant laws and institutional adjustments should be made by both the government and traditional rulers to favour the female gender too like the male in terms of agricultural resource acquisition and utilization so as to remove the imbalance in productivity, income and standard of living in the study area.
ii. Credit is recommended for small-scale rice farmers in Benue state because of their peculiar financial vulnerability to enable them purchase land, seeds and other inputs to increase productivity.
iii. It is recommended that, government should formulate realistic and suitable policies that would be adequately implemented to assist small-scale farmers that are the major producers of large quantity of food for the teeming national population via agricultural financing, adequate and proper awareness creation to farmers on credit facilities availability and utilization. These would relieve farmers from constraints of loan utilization hence boosting food productivity.
iv. Educated farmers should concentrate use of loan resources on farm activities more than other businesses to increase productivity.

v. It is finally recommended that, loan period for small-scale be extended to cover at least two growing seasons at minimum interest rate to enable them utilized the resources and expand their farm size in the study area.

REFERENCES

Adekoya, O.A. The Patterns and Determinants of Agricultural Credit Use among farm Households in Oyo State, Nigeria. Asian Econ. Fin. Rev. 2014, 4, 1290–1297.

Adesina, A.A. (2011). Press Conference Titled Transformation Agenda at Agriculture Stakeholders" Forum at the International Institute of Tropical Agriculture. 12th August 2011, Ibadan in The Guardian 15, August, p. 15.

Ahmad, M. (2017) Rice production in Nigeria hits 15million tones, premium times, August 15, 2017. www.premiumtimes.ng.com/agriculture/agric_news/240287-rice-production-nigeria-hits-15-million-tonnes-official.html

Alabi, R.A. (2004). Economic Efficiency of Cocoa-based Agro forestry System in Oyo State, Nigeria Unpublished Ph.D Thesis. Department of Agricultural Economics & Extension, Federal University of Technology, Akure.

Aladejebi, O.J.; Omolehin, R.A.; Ajiniran, M.E.; Ajakpovi, A.P. Determinants of credit acquisition and utilization among household farmers in the drive towards sustainable output in Ekiti state, Nigeria. Int. J. Sust. Dev. 2018, 11, 25–36

Alfred. S.D.Y. (2005). Effect of extension information on credit utilization in a democratic and deregulated economy, by farmers in Ondo state of Nigeria. *Journal of Agricultural Extension*, 8:135-140.

Asogwa, B.C., Abu, O. and Ochoche, G.E. (2014). Analysis of Peasant Farmers' Access to Agricultural Credit in Benue State, Nigeria. *British Journal of Economics, Management and Trade*, 4(10): 1525-1543.

Azeem.M.M and Bashir, M.K (2008). agricultural credit in Pakistan: constraints and options. *Park.J. life soc sci.* 6(1): 47-49.

Babalola, D. A. (2014). Determinants of Farmers' Adoption of Agricultural Insurance: the Case of Poultry Farmers in Abeokuta Metropolis of Ogun State, Nigeria. *British Journal of Poultry Sciences*. 3 (2), 36-41, 2014.

Babalola, D. A. and Babalola, Y. (2013). Economic Effects of Media Campaign against Pandemic diseases: The Case of Bird Flu (H5N1) on poultry business in Ogun state, Nigeria. *Arabian Journal of Business and Management Review*. 2(12), 80-88.

Bank of Agriculture (BOA) (2019) annual report Makurdi.

Bashir, M.K, Yasir M and Sarfraz .H. (2010). Impact of agricultural credit on productivity of wheat crop: evidence from Lahore, Punjab, Pakistan, *"Pakistan journal of agricultural science,* vol.47 (4): 405-409.

Benue Agricultural and Rural Development Authority (BNARDA) (1999) crop Area and yield survey report by Benue Agricultural and Rural Development Authority (BNARDA). SIPP.

Boansi D. (2014). Yield response of rice in Nigeria: a co-integration analysis. *American journal of agriculture and forestry,* 2(2): 15-24.

Central Bank of Nigeria (2013). Annual Report and Statements of Accounts for the year ended 31st December, 2013.

Central Bank of Nigeria (CBN) (2005). Poverty Reduction though micro-Financing. Bullion publication of CBN:30 (3).

Daramola, A.G. (2004). Competitiveness of Nigeria Agriculture in a Global Economy; Any Dividends of Democracy? Inaugural Lecture Series 36, Federal University of Technology, Akure

Esobhawan, A.O. and Alabi, R.A. (2011). Small Scale Farmers and Technical Efficiency Differentials: The Case of Male and Female Pineapple Producers in Esan West and Uhunwwode Local Government Areas of Edo State. *International Journal of Agriculture* 3 (2) 93 – 99.

Etonihu, I.K.I., Rahman, L, S.A. and Usman. S (2013). Determinants of access ti Agricultural credit among crop farmers in a farming community of Nassarawa state, Nigeria, *journal of development and agricultural economic*.5 (5), 192-196, doi: 10.5897/JDAE 11.126 LSSN 2006-9774.

Ezeh, I & Chidozie, A. (2013). The impact of micro financing on poverty levels of rural women farm households in Abia State, Nigeria; implication for policy intervention. *Journal of Central European Agriculture*. 14. 168-180. 10.5513/JCEA01/14.2.1245.

Federal ministry of Agriculture and Water Resources (FMA&WR) (2009). National policy for agricultural development for Nigeria FMAWR 41PP.

Food and Agricultural Organization (FAO) (2010). Food insecurity in the world: addressing food insecurity in protracted crisis. Food and agricultural organization of the United Nations Rome.

1. Goronyo, A. (2017). Rice production in Nigeria increases to 5.8m tones in 2017. The PunchNews Paper. www.punch.ng.com/rice-production-in-Nigeria- increase-to-5.8m- tonnes-in-2017-rifan.

Iganiga, B.O. (2008). Much ado about nothing the case of the Nigerian microcredit policy measures, institutions and operations;

Ijioma, J.C. and Osondu, C.K. (2015). Agricultural Credit sources and Determinants of Credit Acquisition by Farmers in Idemili Local Government Area of Anambra State, Nigeria. *Journal of Agricultural Science and Technology*, 5: 34-43

Isitor S.U., Babalola, D.A., Obaniji, KS. (2014). An analysis of credit utilization and farm income of arable crop farmers in Kwara state, Nigeria. *Global journal of science frontier research*. 14 (10), 27-23.

Iwuchukwu, J. C., Udoye, C. E. and Onwubuya, E. A. (2013). Training Needs of Pineapple Farmers in Enugu State, Nigeria. *Journal of Agricultural Extension*, 17(1): 102-110.

Kohansal, M.R. and H. Mansoori (2009). Factors affecting loan repayment performance of farmers in Kharagan - Razavi province of Iran. A paper presented in a conference on international research on food security. *National resource management and rural development University of Hamblurg*. October 6-8, 2009.

Kuwornu, J.K.M., Ohene-Ntow, I.D. and Asuming-Brempong, S. (2012). Agricultural Credit Allocation and Constraint Analysis of Selected Maize Farmers in Ghana. *British Journal of Economics, Management and Trade*, 2(4): 353-374.

National Bureau of Statistics, NBS. 2009. Annual Abstract of Statistics. 2009. Abuja, Nigeria. Nyanga, P.H. 2012.

National Population Commission (NPC) (2006). The population census of Federal republic of Nigeria agricultural report Abuja, Nigeria.

Nsikakabasi, A.E. and O.O. Ukoha (2010). Analysis of poverty profile of rural households: Evidence from South-South Nigeria. *Journal of Agriculture and Social Sciences*. Available on line at: http://www.fspubishers.org accessed on 12/10/2011.

Okeke, A.M. (2018). *Effect of Anchor Borrowers' Programme on the Income and Productive Assets Acquisition among Rice Farmers in Benue State, Nigeria*. PhD Dissertation submitted to the Department of Agribusiness and Management, Michael Okpara University of Agriculture, Umudike. Pp. 237

Okwoche, VA, Asogwa, B.C &Obinne. PC. (2012). Evaluation of agricultural credit utilization by cooperative famers in Benue State, Nigeria. *European journal of economics, finance and administrative science* 47: 123- 133.

Oladele, O.I and Wlakatsuki, .T. (2008) social factor affecting wet lands utilization For agriculture in Nigeria: a case study of Sawah rise production: rise science.15 (2), 150-152

Olaleye, R. (2000). Effectiveness of Development Intervention for Economic Empowerment on Rural Women in Ondo Nigeria. Ph.D. thesis, Department of Agricultural Extension and Rural Development, University of Ibadan, Ibadan.

Olawepo, R. A. (2010). Determining rural farmers' income: A rural Nigeria experience. *Journal of African Studies and Development,* 2(4): 99–108

Ololade, R.A. and Olagunju, F.I. (2013). Determinants of Access to Credit among Rural Farmers in Oyo State, Nigeria. *Global Journal of Science Frontier Research Agriculture and Veterinary Science,* 13(2): 16-22.

Osondu, C.K., Ezeh C.I., Emerole C.O and Anyiro C.O. (2014). Comparative analysis of technical efficiency of small holder Fadama II and Fadama III cassava farmers in Imo State.

Nigeria Journal of Rural Extension and Development, University of Ibadan, Nigeria. 8(1), 26-37.

Philip, D., Ephraim, M. M., & John, O. A. (2009). The Impact of Interest Rates and Credit Access on Agricultural Productivity: A Study of Smallholder Farmers. *Journal of Agricultural Finance and Economics*, 12(2), 45-60

Price waterhouse Corpers (PWC) (2017). Promoting economic prosperity: analysis of the state-level business environment in Nigeria, PWC, Nigeria.

Riaz, A., Khan, G.A. and Ahmad, M. (2012). Utilization of Agriculture Credit by the Farming Community of Zarai Tariqiati Bank Limited For Agriculture Development. *Pakistan Journal of Agricultural Science*, 49(4):557-560

Siah, M.H, MS. Awan and M. Wagas . (2011a). Role of institutional credit on agricultural productivity: A time series analysis of Pakistan. *International. J . Economic and finance*. 3 (2): 126-132.

Siah, M.H., Awan and M. Wagas. (2011b). Institutional credit and agricultural production nexus. *International. J . Business and social science*. 2 (13): 279-284.

Ukeje, B. O. (2005). "Programming Even Development Through Policies. In E.J Nwosu (ed) Achieving Even Development in Nigeria: *Problems and Prospects*. Enugu: Fourth Dimension Publishers.