LOAN REPAYMENT AND CREDIT WORTHINESS OF RICE FARMERS UNDER OGIGE MICROFINANCE BANK IN ENUGU NORTH AGRICULTURAL ZONE OF ENUGU STATE, NIGERIA.

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ABSTRACT

The determinant of loan repayment and credit worthiness of smallholder rice farmers under Ogige Microfinance bank in Enugu North Agricultural Zone of Enugu State, Nigeria was studied. One hundred and twenty respondents were randomly selected for the study using multi stage random sampling technique. The data for the study were collected using a well-structured questionnaire and interview scheduled. Percentage responses, multiple regression analysis and logit analysis were used to address the objectives of the study. The results of the determinant factors to loan repayment were extension services, educational level and distance from the bank to farmers' house. Furthermore, the factors that affected loan repayment ability were educational level and distance from bank. In addition, the factors affecting the farmers' credit worthiness were membership of organization, gender, and distance to the bank, educational level, and age of the farmer.The need to ensure farmers' access to educational programme', extension services and off-farm income employmentis the key for the study.

Keyword; Loan Repayment; Credit Worthiness; RiceFarmers; Microfinance Bank; multiple regression and logit Model Analysis

INTRODUCTION

Rice is the fourth largest crop produced in the world after sorghum, millet and maize in terms of production and areas cultivated (Udemezue, 2019). Literatures show that over 65% of the world's output of rice in 2020 comes from China, India, Bangladesh and Pakistan, and this could be linked to the green revolution in early 1960 in those countries (Food Agriculture and Organization, (FAO, 2022). Africa only accounts for about 22% of the world output of rice with Nigeria being the highest producer on about 2 million hectares of land (Central Bank of Nigeria. (CBN) 2018). Rice is a staple food for over 2.89 billion people in Asia, 40 million people in Africa and 150.3 million people in America, 2011 (De-Graft and Addo, 2011). Nigeria is ranked the highest consumer of rice in the West Africa sub- region with an average of 32kg of rice being consumed annually per person. The enormously rise in rice consumption in Nigeria since mid-70s as reported by RIFAN, (2018)to rapid population growth rate, increase in per capita consumption, rapid urbanization, increased income levels, and changes in family occupational structure. The aforementioned

attributes have contributed in large measures in boosting an average Nigerian consumes at 32 kg per annum, which is unswerving with the Food Agriculture Organization (FAO) estimates in 2000s (FAO, 2021). The upsurge in rice consumption in Nigeria could not be met by domestic production, resulting in enormous imports in the tune of billions of Dollars by successive governments in the country (Udemezue, 2019). These inconsistent trends of the rice production, import and consumption could be ascribed to discrepancy and lack of continuity of various Government programmes on rice production and imports in the country. The truth is that Nigeria is yet to be able to achieve self-sufficiency in rice production despite increasing hectares devoted to production annually (CBN, 2018, Osagie, 2016).To curtail this import surge and pave way towards self–sufficiency in rice production in Nigeria, there is need to enhance farmers' access to credit in order to enhance their productions and productivities (Afolabi, 2017, FAO, 2020)

Attempts using formal institutions such as commercial banks and/or development banks to enhance the access of the small-scale farmers in most developing countries, Nigeria inclusive has not made the desired impact (Anozie, *et al;*2014). The reasons adduced to this are inability to get banking services to the rural poor, high cost of service delivery, information asymmetries, lack of collateral, lack of branch network, high level of rural poverty, low level of farmers' education and financial literacy, high degree of uncontrolled production risk, price risk, and credit and default risk (Eze and Ibekwe, 2007).

Nevertheless, to address these problems, the government of Nigeria made various policies and programs, and one of such is the established of microfinance institutions (MFIs) (Afolabi, 2017). Microfinance grant loan to less privileged people in order to enhance their investments in their enterprises, farming, and other income-generating activities, increase income and consumption levels of households, reduce income inequality, and enhance welfare, building all kinds of assets and lead to the diversification of sources of income for the participants.(Agu and Okoli, 2013, Mwenger, 2013, Morti, *et al*; 2012)

However, one of the features of microfinance banks (MFI) is that its credit is riskier, as the loan is unsecured and easily predisposed to the problem of low repayment by the clients (Bernard*; et al;* 2014, Kwofie; *et al* 2015*).* The default or delinquency in repayment of agricultural credit by the farmers could be linked to the inherent nature of agriculture as related to risks and uncertainties in output production and prices, resulting in poor economic returns to farming households (Beck; *et al*; 2013.

The effect of low repayment scenario by clients is a global problem but more worrisome in most developing countries as the prevalent is very alarming among both commercial banks and microfinance banks (Anozie,*et al;* 2014, Akudugu, 2012; Badiru, 2010). Furthermore, the non-performing loans negates the profitability of financial institutions including microfinance banks, hence has not only adversely affect the financial performance of financial institutions, but other potential borrowers may fail to access credit facilities since part of the funds that could be extended as loans by financial institutions are still tied up somewhere (Aguilleria-Alfred; *et al*; 2013). In addition, the non-performing loan can affect the economy of a country (Olomola, 2001). Some attempts to tackle loan defaults exist and among them is understanding the credit worthiness of the borrowers before loan disbursement. The lending institutions set some criteria to be met and such criteria are lenders' income sources, gender, credibility in the community, age (active age group), permanent residence,

character assessment, willingness to join credit group of self-selected members to co-guarantee the loan of fellow group members, prior experience of saving and loan repayment (Arko, 2012) support letter from their respective peasant association turns out to be the key challenges that small holder farmers face in accessing credit (Ibrahim and Aliero, 2012, Ogbonna and Osondu,2018). Yet as much as this could to a substantial level help in checkmating loan default, but not in its entity as reported by Ngetich and Wanjau, (2011).

However, to adequately address the challenges of loan repayment, there is need to investigate the socio economic factors affecting the loan defaults. For instance, many previous studies established direct correlation among the following factors; farm size, age of farmers, years of farming experience, size of loan, household size and level of education of farmers to loan repayment ability of the clients (Mwenger, 2013, Agu and Okoli, 2013, Afolabi, 2017), whereas others researchers reported inverse relationship(Morti, *et al*; 2012;Ezeand Ibekwe, 2007;).Therefore, the need to establish the aforementioned relationship in the study area is imperative as to the best knowledge of the researcher, there is no known published work on the subject matter. This finding will go a long way in assisting policy makers in government lending agencies and nongovernmental financial institutions in formulating policies and programs aimed at abating probable low repayment by the clients. In addition, this study seeks to include the previously accessible information by exclusively recognizing the factors that hinder repayment of credit in the particular research area and tackle it to alleviate its limitations, thus, providing credible suggestions for policy makers.

The specific objectives of the study are to: describe the socioeconomic character of the respondents. determine the effects of the respondents' socioeconomic characteristics on their loan repayment ability and ascertain the credit worthiness of the respondents in the study area.

Materials and Methods

Study area

Enugu North Agricultural Zone of Enugu State, Nigeria was studied. It is one of the agricultural zones in Enugu State and is located between latitudes 6° 31' and 7° 6' North of Equator and longitude 6° 54' and 7° 54' East of Greenwich Meridian. The population of Enugu North agricultural zone is 1,190,908 persons, which comprise 678,015 males and 700,403 females (National Population Commission (NPC), 2006). The land area is about 3,404km^2 and about 11,000 households. The inhabitants apart from farming are also engage in petty trading, commercial driving, mechanics and tailoring.

Enugu North consists of six (6) Local Government Areas (LGAs) namely; Igbo-etiti, Igbo-eze South, Igbo-Eze North, Nsukka, Udenu and Uzouwani LGAs. Ogigemicrofinance bank commenced in 2006 with branches in Enugu North zone of the State with over 1000 employees. It has it's headquarter at Nsukka. The institution delivers major types of loan like regular loan, agricultural input loan, civil servant loan, rural package loan, urban package loan, business loan, housing loan, and cooperative loan. In general, the institution operates in rural and urban of the zone catering the poorest of the poor segment of the community such as youth marginalized women, physically challenged veterans, graduated, students, contractors,small and medium enterprises.

Sampling Technique and Sampling Size;

The lists of 120 rice farmers that borrowed

money from the Microfinance bank between 2014 to 2019 rice planting seasons were provided by the Ogige Microfinance Bank in Enugu North Agricultural Zone of Enugu State. Out of the 120 rice farmers, 60 non-loan defaulters and 60 loan defaulters were selected for the study.

Method of Data Collection

The data for the study were obtained through the use of structured questionnaires and informal or oral interview.

Method of Data Analysis

The objective i was achieved using percentage responses. The objective ii and iii were achieved using multiple regression and logit model analysis respectively.

Model Specification

Multiple regression analytical technique was used to determine the loan repayment ability by the borrower.

The multiple regression models are implicitly stated:

$Y = (X_1 + X_{2+}X_3 + X_4 + X_5 + X_6 + X_7 + X_8 \text{----------} \text{----}X_n)$ ..... (1)

Y= Amount of loan Repaid (N), X_1 = Age of farmers (years), X_2 = Education (Number of years of schooling), X_4= Debt– Income ratio (Dummy), X_5=Interest Rate (%), X_6= Farm Size (ha), X_n= Error Term

Four functional forms of the multiple regressions were employed in order to select the one that has provided the best fit. The functional forms tried are:

Linear function

Linear function

$Y = b_0 + b_1 x_1 b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + e_i ei$ ..... (2)

Double log fonction :-

$\ln(y) = \ln b_0 + b_1 \ln x_1 + b_2 \ln x_2 + b_3 \ln x_3 + b_4 \ln x_4 + b_5 \ln x_5 + ei$ ..... (2)

Semi log

$Y = \ln b_0 + b_1 \ln x_1 + b_2 \ln x_2 + b_3 \ln x_3 + b_4 \ln x_4 + b_5 \ln x_5 + ei$ ..... (3)

Exponential function;

$\text{Ln}Y = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + ei$ ..... (4)

The choice of the best functional form was based on the magnitude of the R^2 value, the high number of significances, size and signs of the regression coefficients as they conform toexpected result

Logistic regression aims to assign the dependent variable to two groups (0;1), such as predicting credit worthiness of clients. Other predictive credit risk models include Linear probability model, the Probit model, Discriminant analysis and Neural networks (Arko, 2012). Despite the *disadvantage* of the logistic regression of difficult to use ML to estimate the weights, because this requires non-linear optimising techniques using iterative procedures (Akudugu, 2012). , It has favour among scholars because of among others with merits of its not assumption of multivariate normality and equal covariance matrices as discriminant analysis, but incorporates non-linear effects, and uses the logistical cumulative function in predicting a default Osondu, Emerole, Ezeh, and Ogbonna(2015):Statistically, logistics models fit better in explaining the sources of defaults. A common representation of the logistics model in estimating the probability for qualifying for credit worthiness is as follows:

$P_t (Y_i) = Y_i F (\beta X_{i, t-1}) + (1 - Y_{i[}) [1 - F(\beta X_{i,t-1})]$ .....(5)

where is a vector that includes the explanatory variables of the model (1 is for the model's intercept) and is a vector of logistics coefficients corresponding to the explanatory variables. $P_t$takes the value of 1 if firm i^{th}fails in year t and 0 otherwise. According to the above model, the probability that a firm with an attribute vector X being not credit worthy firm is

$P_t(Y_i=1)=F(Bx_{i,t-1})$ .....(6)

and the probability of the firm being credit worthy firm

$P_t(Y_i=O)=1-F(ßx_{i,t-1})$……..…….(7)

Where; $F(ßX_{i,t-1})=\int ß\, xi,t\text{-}1df(z)=1/[1+exp(ßx_{i,t-1})]$… .....(8)
is the cumulative probability for the logistic probability function. The probabilities are determined by a vector of firm specific variables. The variable is related to the dependent dummy $i\ X_{i,t}1\ X$ variable positively or negatively depending on the contribution of i.

The explicit form of the model is:
$Q = B_o + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + B_7X_7 +$……. (9)
Where:
Q_i = Credit worthiness (worthy; 1; 0, not worthy)
.X_1 = Age in years, X_2 = Educational Level (In year), X_3 = Farm Size (Ha), X_4 = Distance to the bank (Dummy), X_5 = All weather road (Dummy), X_6 = Off-Farm Income (Dummy), X_7 = Assert –Liability ratio (Dummy), X_8; Collateral (Yes; 1 and otherwise; 0) and U_i = Error Term

Results and Discussion

Socioeconomic Characteristics of the Respondent

Table1indicates that majority (35.8%) of the respondents were within the age range of 30 - 39 years, followed by 40 – 49; 26.7% and the least, 60 years and above; 9.2%. This is an indication that the large proportions of the respondents were youths which is in line with the finding of Lawal, *et al* (2009). This result shows that youths are often risk averse, agile, productive and able –bodied people and adoptive individuals which are capable of propelling their production frontier, hence indicating higher propensity of loan repayment. In contrary, Ume*, et al*; (2018) reported that aged farmers are more reliable than youths 'in terms of loan repayments. As well, borrower's age is a good proxy for the experience of the borrower; older borrowers are expected to have a better loan repayment performance, ceteris paribus (Rostan and MohdzainiAbd, 2009).

In addition, majority (91.7%) of the respondents were educated, while only 8.3% were not educated. Ume, *et al;* (2018) reported that the level of farmer's education enhances loan repayment through improving his/her resources management, and utilization, receptive to innovations and often risk averse. In addition, 66.7% of the respondents had no access to extension services and only 33.3% had access. Extension services goes beyond technology and information sharing, it could render advice as it related to farm organizational and business risk management; facilitation and brokerage in rural development, leading to high farm productivity and high loan repayment prospect. As well, 65% of the respondents engaged in off -farm activity, while 35% did not. Off-farm income is source of income to take care for household family consumption, thus, giving room for savings from sales of farm proceeds for loan repayment (Chaukie, *et al*; 2013). Moreover, 41.7% of the respondents resided 5.1 –10.1km to the bank, 33.3%; less than 5 and 25%; above 10.1 Km.

Farmers that reside very close to the bank (lending agency) have higher probable of easier monitoring by the bank staff to ensure high odds of loan repayment compared to those living very far away, especially where logistics is a limiting factor (Aguilera, *et al;2003)*. Additionally, most (33.3%) of the farmers studied cultivated farm size ranged from 0.01 – 1.00, while the least (10.8%) cultivated 3.01 – 4.00. This implied that rice production in the study area was at small scale. Farm size plays an important role in farm output and high loan repayment rate. This could because access to land reflects the availability of capital, access to credit and even good management ability (Anozie*, et al;* 2014). The table shows that farmers with high assert - liability ratio were 65%, while those with low were 35%. Farmer with high asset and liability ratio shows the ability of the farmer to take care of the loan he/she is seeking for.

As well, high interest rate as charged by lending agencies was reported by 83.33 % of the sampled farmers, while 16.67% do not. The change in bank policies in the form of change in nominal interest rate is capable of scaring potential borrowers, therefore leading to low rate of loan repayment, as farmers' production frontier are very marginal (Arko, 2012). Further, 66.67 % of the respondents reported problem of high debt- income ratio, while 33.33 % do not. Chaudhary, and Ishfaq, (2003) reported that farmer borrows when his/her income is higher than loan, there is high propensity of low default rate by the farmer and vice versa. More so, 82.5% of the sampled farmers complained about high collateral as charged by the lending agency, 17.5% did not. Collateral is what borrowers provide in order to make credit lending less risky, as it gives loan security in case of defaults, which could be in form of social collateral used under group loans in the absence of physical collateral and use of proxy/ hidden collateral by MFIs offering individual loans Agu and Okoli, (2013).

Table 1: Distribution of Respondents According to Socioeconomic characteristics

Variables	Frequency	Percentages
Age		
20 – 29	20	16.7
30 – 39	43	35.8
40 – 49	32	26.7
Level of Education		
No formal	10	8.3
Primary	50	41.7
Secondary	35	29.2
Tertiary	25	20.8
Extension Services		
Yes	80	66.7
No	40	33.3
Off- farm Activities		
Yes	75	65

No	45	35
Distance from Farm(Km)		
Less than 5	40	33.3
5.1– 10.1	50	41.7
Above 10.1	30	25
Farm Size		
0.01 – 1.00	40	33.3
1.01 – 2.00	33	27.5
2.01 – 3.00	15	12.5
3.01 – 4.00	13	10.8
4.01 – 5.00	14	11.7
5.0 and above	5	4.2
Asset – Liabilities ratio		
Yes	78	65
No	42	35
Interest Rate		
High	100	83.33
Low	20	16.67
Collateral		
Yes	99	82.5
No	21	17.5
Debt – Income ratio		
High	80	66.67
Low	40	33.33

Source; Field Survey, 2021

Factors influencing Farmers' Loan Repayment ability.

The socioeconomic characteristics influencing farmers' loan repayment ability is shown in Table 2. Based on the statistical criteria, Cobb Douglas production function was chosen as lead equation. The coefficient of determination (R^2) was 0.9148, implying that 91.48 % of the variation in the output of the rice farmers were accounted by various inputs included in the model, while the remaining 8.52% were due to error term. Age was negative and statistically significant at 5% significant level, implying that age is not a determinant factor to loan repayment. The reason for the sign of the coefficient perhaps, due to the fact that aged people are usually feeble in terms of manual strength to accomplish tedious tasks involved in farming, leading to low profitability as the farmers' farming horizons are drastically abridged, thus predisposing farmers to high propensity to loan default (Ibrahim and Aliero, 2012). The findings of Aguillera- Alfred, *et al*, (2003) is not in harmony with above affirmation. They opined that youthful farmers are often active, progressive, innovative and energetic to handle farming activities which is often strenuous in order to achieve high productivity, thus increasing the likelihood of loan repayment, if granted such access.

More so, the coefficient of extension services was statistically significant at 5% alpha level and had positive effect on farmers' loan repayment ability. Extension services as asserted by Ogbonna,and Osondu,(2021)assists farmers through educational procedures aimed at improving farming methods and techniques with resultant effects of increasing production efficiency and income, hence boasting their loan repayment capacity. As well, the coefficient of interest rate was positive and significant at 5% probability level.The findings of Richard, (2011) concurred to the above assertion. They reported that bank lending interest rate for loan is capable of swaying both intended borrowers' access to loan as well as their repayment capacity. This is because when the high interest rate is added to sum of the principal amount, the borrower may default, as his or her business cash flow may not be able to foot the bill, they added.Additionally, loan and income ratio were positive and statistically significant at 10% significant level, implying that debt-income ratio is a determinant factor to loan repayment. When debt - income is high, there is high propensity of low default rate by the farmer and vice versa. Ogbonnaand Osondu (2021) reported that debt-income ratio provides an indication of the amount of debt that a potential borrower is obligated to in relation to how much income they have.

Table 2 Factors influencing Farmers ' Loan Repayment ability.

ıble	Linear	Semi-log	+Double log	Exponential
tants	1.348804 (4.12)***	2.27829 (2.96)***	0.95093 (3.02)***	3.04096(3.02)***
	0.0537574(-1.61)	0.969578(5,15)***	-0.348248.(-2.52)**	0.0002248 (0.2O7)
ation	0.7747488(23.36)***	-0.2038984 (-0.56)	0.267690(4.79)***	0.0001869(4.07)***
ˈarm income	0.0363733 (0.58)	-0.0155739(0.07)	0.009577 (1.10)*	-0.005302 (-0.27)
nce to bank	-0.0139918(0.40)	-0.0907944 (-0.51)	-0.0361043(-0.49)	-0.0010455 (-3.38)
ı. Services	-0.0145933 (-0.52)	0.1023274 (0.68)	0.1030999 (2.68)**	0.0001258 (2.07)**
ɛst Rate	0.229507 (1.70)*	0.309532(1.90)*	0.2730955 (2.05)**	0.199507 (1.19)
-Income ratio	0.2295312(1.22)*	0.109345(0.20)*	0.041575(1.15)*	0.209500(0.17)
	0.3942	0.4097	0.9148	0.2912
lue	8. 17***	8.48***	9.95***	5.02***

Source: Field Survey, 2021.

***, ** and * shows 1%, 5% and 10% level of significance respectively. Values in bracket show t-values.

Credit Worthiness of the Respondents

Table 3 reveals that the coefficient of age of the household head in agreement with aprioriexpectation and findingof Rostan and MohdzainiABD, (2009) had a positive impact in accessing credit worthiness of the borrower at 5% probability level. Studies Olomola, 2000; Ume; *et al;* 2018) infer that old people are lookedupon by lending institutions to be credit worthy, as they will spear nothing to religiously guide against denting reputations they have built over life time compared to youths that are anything goes.. The finding of Oladeed and Oladabo; (2008) was not synonymous with aforementioned statement. They are of the view that youths are innovative, risk averse and energetic to make living out of farming and make savings to service debts

As anticipated, the coefficient of all-weather roads had direct effect in being credit worthy farmer by being non-loan defaulter in accord to expected reasoning and at 95% confidence level. The all-weather road among others allows for ease of market accessibility of farm inputs and evacuation of output. Such farmers have tendencies of having high productivity with high propensity to pay back the loan (Ume, *et al;* 2018). The findings of Olomola; and Ade, (2002) concurred to the above assertion. They opined that farmers far away from all-weather roads to the lending agency tend to be less market-oriented and pursued subsistence-oriented objective, hence not credit worthy as they reap misery in their production. In addition, the coefficient of educational status had a negative and significant effect on credit worthiness, which agrees with a priori expectation at 1.0% level of probability The educational attainment of a farmer does not only enhance farm production and productivity but also elevate the aptitude to appreciate the essence of credit and also comprehend and appraise the information on improved innovation disseminated by extension agents (Afolabi, 2017). Several studies (Turvey, 2001, Benerd, 2011, Ogbonna and Osondu,2018) corresponded to this affirmation.

More so, in line with a prior expectation, distance from the bank was positive in correlation to rate of loan re payment and was significant at 10% risk level. The distance from the borrower's area to the microfinance bank according to Turvey, (2001) is used to estimate the transactions costs associated with loan repayment (actual expenditure on transport costs and time lost during travelling). He opined that borrowers from more distant areas possibly have higher transactions costs and hence are more liable to be in arrears (transactions costs are higher relative to the penalty for default). This finding gave credence to statement by Turvey, (2001) but contradicted Afolabi, 2017), who found a negative sign of the coefficient. He remarked that farmers that live far from the lending house being less defaulting rate, may be due to interest and integrity to protect. Additionally, the coefficient of collateral was positively signed and significant at 5% alpha level. Proxy collateral can help to evaluate the creditworthiness of a borrower as it is an indicator of income generating capability and ability to pay by the borrower (Olomola, 2000). Thus, marketability, life, and riskiness according to Benard, (2011) determine the attractiveness of various types of collateral to a lender and, hence, the amount of financing available to borrower.

Table 3: Determinant of the Credit Worthiness of the Respondents

Variable	Coefficient	Z -value	p-value
Constant	10.00309	2.82	0.005***
Farm size	0.3366882	1.93	0.026
Education	0.7750969	2.62	0.009***
Distance from bank	0.8068959	2.59	0.010***
Assets and liability	0.8454344	2.91	0.004
Off-farm income	0.0439408	1.96	0.029**
Extension contact	0.7265309	2.43	0.014
Age	-0.4320279	-2.59	0.010**
Collateral	0.6754345	2.61	0.024**

Pseudo R^2 =0.4970Prob> Chi = 0.0000 LR Chi (9) = 75.21

***, ** and * shows significant at 1%, 5% and 10% level of probability respectively.

Source, Field Survey, 2021

Conclusion and Recommendation

In conclusion, based on the findings, the results of the determinant factors to loan repayment were extension services, educational level and distance from the bank to farmers' house. Furthermore, the result indicated that the factors that affected loan repayment ability were educational level and distance from bank. In addition, the factors affecting the farmers' credit worthiness were membership of organization, gender, distance to the bank, educational level, and age of the farmer.

Based on the findings, the following recommendations were proffered

For easy of loan monitoring and evaluation by bank staff, farmers that have their farms close to the bank should be considered in loan administration more those far away.

Farmers with high level of education should be considered for loan approval, since level of education is positively related to credit worthiness. The farmers' educational status could be achieved through adult education, seminars and workshops.

Banks should give more preferential treatment to relatively aged farmers in loan approval, since they had positive relationship to loan repayment and credit worthiness.

The need to improve the infrastructures of the rural areas by government and non-governmental Organization in order that farmers could earn extra income from their farm income through engaging in off- farm income. The fund generated could serve as a panacea in loan servicing.

There is need to boost borrowers' repayment capacity by giving rebate to good borrowers.

6 Extension agents should be motivated through provision of incentives and prompt payment of their salaries for effective performances of their responsibilities.

REFERENCES

Afolabi, F. (2017). Analysis of loan repayment among rice farmers in Oyo State Nigeria. *Journal of social science, 22920;115:119.*

Agu, O.C., and Okoli, B.S. (2013). Credit management and bad debt in Nigeria commercial banks – Implication for development. *IOSR Journal of Humanities and Social Sciences, 12*(3), 47-56.

Aguilera-Alfred, N and Gonzalez – Vega, C. (2003): A multinomial logit analysis of loan targeting and repayment at the Agricultural Development Bank of the Dominican Republic. Agricultural Finance Review Vol 53:55-64

Akudugu, M. (2012). Estimation of the determinant of credit demand by farmers and supply by rural banks in Ghana's Upper East Region. *Asian Journal of Agriculture and Rural Development;*2012; 2(2):189-200.

Anozie, R O, Ume, S I, Okelola, O E, Anozie, S N and Ubani, S I (2014) Determinant factors in loan disbursement to yam (DiscoreaSpp)farmers in Ehime Mbano, ImoState. A case study of Nsu Micro finance Bank. Taraba *Journal of Agricultural Research*. 3: 14 - 18.

Arko, S.K. (2012). Determining the causes and impactsof non-performing loans on the operation of microfinance institutions. A case of Sinapi Aba Trust: *An executive MBA thesis*. Kwame Nkrume University of Technology, Accra, Ghana.

Badiru, I. O. (2010). Review of small farmer access to Agricultural Credit in Nigeria. International Food PolicyResearch Institute (IFPRIP, Nigeria Strategy Support Program. Policy Note 25.

Beck, R., Jakubik, P and Piloiu, A. (2013). Non-performing loans; what matters in addition to the economic cycle? *European Central Bank WorkingPaper Series*,1515, 1-32.

Benard, A. (2011*). Effect of Interest Rates onLoan Repayment; A Case Study of Equity Bank Masindi Branch*. Master Thesis. Makerere University

Bernard, B., Sare, Y., and Musah, A. (2014). The Effects of Interest Rate on Micro, Small and Medium Enterprises Financing Decision in Wa Municipality of Ghana. *International Journal of Business, Humanities and Technology* Vol. 4 No. 4; July 2014.

CBN (2018): Central Bank of Nigeria annual report and statement of account for the year end 31st Dec, 2017.

Chaudhary, M. A., and Ishfaq, M. (2003). Credit worthiness of rural borrowers of Pakistan. *The Journal of Socio-Economics*, 32,675-684.

Chauke, P.K., Motlhatlhana, M. L.Pfumayaramba, T.K. and Anim, F. D.K(2013). Factors influencing Access to Credit: A Case Study of Smallholder Farmers in the Capricorn District of South Africa. *Africa Journal of Agriculture Research* Vol. 8(7), pp. 582-585

De-Graft, AH and Addo J (2011). Socio-economic determinants of rice farmers' loan size in Shama, Ghana. *Middle-East J Sci Res.*; 1:210–215.

Emma-Ajah, J. A1, Ume, S I, Ucha, S.O1 and Chukwu, M (2021). Economic Efficiency of Small holder Swamp Rice Farmers across Gender in Anambra State, Nigeria. An application of Stochastic Production Frontier Function. International Journal of Research and Innovation in Applied Science (IJRIAS) |Volume VI, Issue XI, November 2021|ISSN 2454-6194.

Eze, C. C and Ibekwe, U. C. (2007).

Determinants of loan repayment under the Indigenous Financial System inSoutheast, Nigeria. The Social Sciences, 2(2), 116-120, 2007.Hill,

Food and Agriculture Organization production year book (FAO) (2022): FAOSTAT, statistics division of the food and agricultureorganization.http://faostat.fao.org/site/567/desktopdefaultaspx Accessed march 03, 2022, Data base results.

F.A. O (2020) the state of food scarcity in the world, 4th edition.Fless, Karen, weir, Roberts M, stoney, Samuel G. (1998) the Carolina Rice Kitchen. The African connection university of SouthCaroline press.

F.A.O (2021) FAOSTATA Statistics Division of the food and Agricultural Rome

Ibrahim SS and Aliero HM (2012). An analysis of farmers' access to formal credit in the rural areas of Nigeria. *African J Agric Res*.;7(47):6249–6253.

Kwofie, C; Owusu-Ansah, C and BoadiKothari C.R. (2015) Predicting the probability of loan-default: An Application of Binary Logistic Regression Research Journal of Mathematics and Statistics 7(4): 46-52, 2015.ISSN: 2042-2024, e-ISSN: 2040-7505

Lawal, J O, Omonona, B T, Ajani OI Y and Oni OA (2009). Determinants of constraints to credit access among cocoa farming households in Osun State. *Pakistan J Soc Sci;*6:159–163.

Moti, H.O., Masinde, J.S., Mugenda, N.G., &Sindani,M.N. (2012). Effectiveness of credit managementsystem on loan performance: Empirical evidence frommicrofinance sector in Kenya. *International Journal of Business, Humanities and Technology, 2*(6), 99-108.

Mwengei, K.B.O. (2013). Assessing the factors contributing to non-performing loans in Kenyan banks.*European Journal of Business Management, 5*(32), 155-163.New York, Hafner Press.

NPC (National Population Commission) (2006). Population Census of Federal Republic of Nigeria: Analytical Report at the National Level. National Population Commission, Abuja.

Ng'etich, J.C.and Wanjau, K. (2011). The effects of interest rate spread on the level of non-performing assets: A case of commercial banks in Kenya.*International Journal of Business and Public Management, 1*(1), 58-65.

Ogbonna, S. I. and Osondu, CK (2018). Analysis of supply structure and trends of formal funding of agriculture in Nigeria (1992-2012). *Scientific Papers Series, "Management Economic Engineering in Agriculture and Rural development.*18 (1):277-285, 2018.

Ogbonna, S.I. and Osondu, C.K. (2021). Comparative Analysis of Savings Behaviour of rural and urban Farm Households in Umuahia Agricultural Zone of Abia State, Nigeria. FUAM *Journal of Pure and Applied Science,* 1(2): 89-98.

Oladeebo .J.O and Oladeebo O.E, (2008) Determinants of loan repayment among smallholder Farmers in Ogbomoso Agricultural Zone of Oyo state. *Journal of Social Science* 17(1): 59-62.

Olomola, A.S. (2000). Determinants of smallholder loan repayment performance: evidence from the Nigeria micro-finance. *Journal of financial management,* 45: 65-82

Olotomola S and Ade, A. (2002) Determinant of Smallholder loan repayment

performance, Evidence from Nigerian Micro financesystem, Nigeria. *Am Journal of Agric Econ* 69(4); 645 - 656.

Osagie, C., (2016) Rice importation ban: Disregard US report, FG urged. Available from http://www.thisdaylive.com/articles/2015-rice-importation-ban-disregard-us-report-fg-urged/168731/ [Accessed 17/05/14]. Priscilla N. W., (2011). Factors that Influence the Demand for Credit among Small-scale Investors: a case study of Meru Central District, Kenya. *Research Journal of Finance and Accounting*. 2(2).

Osondu C. K., Emerole, C.O., Ezeh, C.I. and Ogbonna, S.I. (2015. Informal Micro Financing and Implications on Status of Poverty of Women Farmers in Abia State, Nigeria. *Journal of Global Economics, Management and Business Research*. 4(1): 23-32.

Rice Farmers' Association of Nigeria (RIFAN) (2018) Rice production in Nigeria increases to 5.8m tones. RIFAN Annual Report 2019

Richard, E. (2011). Factors that cause non-performing loans in commercial banks in Tanzania and strategies to resolve them. *Journal of Management Policy and Practice, 12*(7), 50-58.

Roslan, A.H. and MohdZainiAbd K. (2009), "Determinants of Microcredit Repayment in Malaysia: The Case of Agrobank," Universities Utara MalaysiaIDOSI,2009).http://www.idosi.org/hssj/hssj4(1)09/6.pdf

Turvey, C.G. (2001). Credit scoring for agricultural loans: A review with applications. *Agricultural Finance Review*, Vol 51:43-54.

Udemezue, J.C (2019), Analysis of Rice Production and Consumption Trends in Nigeria. Journal of Plant Sciences and Crop Protection 1(3); 23 -38.

Ume S I, Ezeano C, I, Edeh O N and UdefiIO. (2018); Resource Use Efficiency of Upland Rice Farmersin Ivo Local Government Area of Ebonyi State *Asian Research Journal of Arts & Social Sciences7(2):1-10*.

Ume, S I, Ezeano, C I, Obiekwe, N J (2018) Analysis of Determinant Factors to loan repayment among broiler farmers in Enugu State, Nigeria. *International Journal of Environmental & Agriculture Research* (IJOEAR) 4 (6), 1 – 10.