DETERMINANTS OF LOAN REPAYMENT AMONG COOPERATIVE FARMERS IN AWKA NORTH L.G.A OF ANAMBRA STATE, NIGERIA

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Abstract

This study examines the Determinants of Loan Repayment Among Cooperative Farmers in Awka North L.G.A of Anambra state, Nigeria. The study provides empirical evidence on the farmers' socio-economic characteristics as well as determine which of the characteristics that influence loan repayment, the range of amount of loan applied for, amount received and amount repaid by the cooperative farmers and organizational factors affecting the farmers' credit repayment ability. Findings reveled that the joint effect of the explanatory variable in the model account for 91.9% of the variations in the factors affecting the farmers' credit repayment ability. Four coefficients (educational qualification, farm size, , loan application cost, and collateral value) are significant at 5%, 1% respectively. Age, membership duration and income of the farmers were not significant but it shows a positive relationship with loan repayment. There is a significant difference between the amount of loan received and amount repaid by the cooperative farmers. All the Organizational factors affecting the farmers' credit repayment ability are significant at 0.000 significant level**.** The study recommends that farmers can be made to improve on their repayment of farm credit by adoption of income support measures which would serve as panacea. Lending institutions should ensure that whoever they are lending to meets a minimum threshold in asset value before loans are accessed. This will help to reduce defaulters.

Keywords: Loan repayment, Cooperative, Regression, Farmers, Awka north

Introduction

Utilization and repayment of borrowed agricultural funds has been one of the numerous of agricultural development in the developing world and Nigeria is no exception (Nwachukwu, Alamba, and Oko-Isu,2010). Borrowed agricultural fund which is also described as agricultural credit is one of the pre-requisites for farmers to increase the agricultural output in the process of agricultural development of a country. As cited by Oladeebo and Oladeebo (2008), agricultural lending involves giving out of credit (in cash and kind) to small- scale farmers for the purpose of farming. There is no doubt about the crucial roles of credit in economic development. According to Nwachukwu et al (2010) Credit is an important instrument for improving the welfare of the poor directly through consumption smoothening that reduces their vulnerability to short term income. It also enhances the production capacity of the poor resource farmers through financing investment in their human and physical capital. There is no doubt that in recent times, considerable interest has been shown by agricultural economists, planners, policy makers, agribusiness managers, agriculturists, and financial institutions on the need to pay more attention to farmers in Nigeria.

With these renewed interests in improving the status of the rural resource poor farmers through credit extension, a key issue that has cropped up is the question of credit repayment. Credit is not obtained without some cost implications. Certain factors are considered before it is availed to the beneficiary and one of such factors is the beneficiaries ability to repay the loan which in turn is also determined by many factors. According to Ugbomeh, Achoja, Ideh and Ofuoku (2008), credit repayment performance could be influenced by a myriad of factors such as interest rate, unstable prices of agricultural commodities, and the social relations and responsibilities of the borrower. Many other factors abound including membership of self – help group (SHG); a voluntary association of people at the grass roots level to meet the challenges of economic and business activities in the rural cash economy, like cooperative societies which has been described as a user-owned and democratically controlled enterprise in which benefit is received according to use. Such platform has been used by the governments at various levels to improve the productivity of the farmers and also alleviate the poverty and sufferings of the rural resource poor famers. Accordingly, Dadson (2012) noted that In developing countries, improvement in productivity through investment in productive ventures, especially in the agricultural sector where majority of the population derive their livelihood is necessary for accelerated economic growth. At low levels of income, the accumulation of savings may be difficult. Under such

circumstances, access to loans can help poor farmers to undertake investment and increase productivity.

Agricultural household models suggest that farm credit is not only necessitated by the limitations of self-finance, but also by uncertainty pertaining to the level of output and the time lag between inputs and output (Kohansal and Mansoori, 2009, Dadson, 2012). Also, facilitation of access to credit for the rural poor plays a role in alleviating rural poverty. Despite these advantages, small scale farmers have mostly been locked out of the formal financial system. This is primarily due to the lack of 'bankable' collateral, high administrative costs and perceived high risks associated with agricultural and small scale farmers (Awoke, 2004).

Thus, in order to increase agricultural productivity especially among the rural poor and to assist rural households in maintaining food security, many governments in developing countries initiated credit programmes with the idea that rural smallholder farmers will have access to formal sources of credit (Dong and Feathersone, 2010; Dadson, 2012). The resolve by various stakeholders in improving the status of the rural resource poor farmers through credit extension has informed a new policy dimension and question. According to Dadson (2012), the question of repayment of loan by farmers is one of the important issue since it influences access to credit by the farmers.

Statement of the Problem

Farm credit has been described as one of the pre-requisites for farmers to increase the agricultural output in the process of agricultural development of a country and it is also very important for sustainable agricultural development in any country of the world. In Nigeria, agricultural credit has long been identified as a major input in the development of the agricultural sector (Nwankwo,2008; Ekwueme, Adrika and Umebali, 2007; Onyebinama,2007; Oladeebo and Oladeebo, 2008). Despite the crucial role of credit in agricultural production and development, farmers still have limited access to farm credit. Awoke (2004), noted that its acquisition and repayment are fraught with a number of problems especially in the small holder farming. Osakwe and Ojo (1986) had earlier reported that large rate of default has been a perennial problem in most agricultural credit schemes organized or supported by Nigerian government. Most of the defaults arose from poor management procedures, loan diversion and unwillingness to repay loans. According to Saleem and Janm (2014) Various researchers have put forward the benefits, problems, access and role of credit for increased productivity. But prompt repayment of credit is necessary for good credit worthiness.

Inability of borrowers to repay amount of loans collected is crucial for the long-term sustenance of the credit institutions. As a result, many

studies have tried to examine loan repayment performance of many socio-economic groups. A number of empirical studies (Oladeebo and Oladeebo, 2008; Eze and Ibekwe, 2007; Kohansal and Mansoori, 2009; Chirwa, 1997; Kohansal at al 2009; Olagunju and Adeyemo, 2007; Adeyemo and Agbonlahor (2007) revealed income, sex,farm size, age of farmers, years of farming experience with credit, size of loan, household size, timeliness of loan disbursement, level of education of farmers, sales of crops, degree of diversification, income transfer and the quality of information as significant determinants of agricultural credit repayment and have also contributed positively to the credit worthiness of farmers. Although some had a negative influence on repayment.

Considering the socioeconomic and environmental peculiarities across regions it is therefore necessary to carryout thorough investigation of the determinants of loan repayment, particularly at the smallholder farmer level because of its importance to policy makers and the lending institutions. Hence, the major concern of this study in supplementing previous research and bridging the knowledge gap is to ascertain the major socio-economic and organizational factors that affect loan repayment capacity of cooperative farmers. According to Onyeagocha, Chidebelu and Okorji (2012) one way to tackle the loan repayment challenges is to investigate the factors which affect the loan repayment. This study is driven by these quests.

Objectives of the Study

The main objective of this study is to ascertain the determinants of credit repayment among cooperative farmers in Awka north L.G.A of Anambra state, Nigeria. Specifically the study intends to:

i. Identify the farmers' socio-economic characteristics as well as determine which of the characteristics that influence loan repayment.
ii. Examine the range of amount of loan applied for, amount received and amount repaid by the cooperative farmers.
iii. Ascertain organizational factors affecting the farmers' credit repayment ability.

Statement of Hypotheses

Ho_1: There is no significant difference between the amount of loan received and the amount of loan repaid by the cooperative farmers.

Ho_2: Socioeconomic profiles of the cooperative farmers are not significant determinant of their credit repayment ability.

Ho_3: Organizational factors supporting the cooperative farmers operations are not significant determinants of their credit repayment ability.

Literature review

Various researchers have put forward the benefits, problems, access and role of credit for increased productivity. But prompt repayment of credit is necessary for good credit worthiness. The review in this section is done under the following sub headings:

- Conceptual framework
- Empirical Literature

Conceptual Framework

- **Imperatives for Agricultural Credit**

Agricultural credit as noted in the literature (Gandhimathi, 2006) is one of the pre-requisites for farmers to increase the agricultural output in the process of agricultural development of a country. According to Ololade and Olagunju (2013), agricultural credit is very important for sustainable agricultural development to be achieved in any country of the world. Rural credit has proven to be a powerful instrument against poverty reduction and development in rural areas. Farmers are particularly in need of such instrument (ie credit), because of the seasonal pattern of their activities and the important uncertainty they are facing. Agricultural credit enhances productivity and promotes standard of living by breaking vicious cycle of poverty of small scale farmers.

Imoudu and Onaksapnome (1992) contended that agricultural loan is a crucial input in small holder agriculture because it enables small scale farmers to establish and expand their farms as this would increase their income and ability to repay loan. Farmers need credit to meet the fixed capital requirements for creating adequate infrastructure to adopt new strategy of production and also to meet the variable expenses (Modi and Raj, 1999) and thus enhanced the demand for agricultural credit. The increased demand for agricultural credit can be met by a systematic expansion of rural credit system (Kumar et al., 1987). Farmers access to credit facilities is supported to be an accelerator of agricultural development through a wide spread break away from traditional technology and by fostering the generalized adoption of developed and improved technology (Bolarinwa and Fakoya, 2011). Flores (2004) corroborating this assertion "stated that institutional credit if made available to farmers could ameliorate some of the farmers problems such as small farm size, low output, low income and low social –economic status. It can also relieve farmers of the excessive interest impose on them by the informal creditors who usually charge high interest rate of between 100-300 percent per annum. Based on the above consideration and the vital role of credit in agricultural development, government initiated different policy measures for extending financial

assistance to small-scale farmers through a farm credit scheme at low interest rates. Some of the credit institutions established are the: Agricultural Credit Guarantees Scheme; Nigeria Agricultural Insurance Scheme; Rural Banking Scheme; Agricultural Credit Corporation; Cooperative Thrift and Credit Society (Bolarinwa and Fakoya, 2011).

It has been confirmed that a well-managed institutional credit scheme aided agricultural development while poorly managed credit programme has been instrumental to agricultural stagnation in many developing countries (Alabi et al. 2007). These farm credit schemes have been functioning for many years; it has therefore become pertinent to ascertain their impact on the beneficiaries.

- **Farmers Repayment Capacity**

Small farm households have different characteristics from big enterprises or companies. They are family-based, carry out multiple economic activities and share income and expenditure. There is no clear distinction between the farm business and the household.

The repayment capacity of the farm household depends on whether there is enough cash available in the "family pot" to service the loan. Loan repayments are not made from specially earmarked funds, but are simply taken out of the cash reserves of the household. Thus the lender needs to figure out if there will be sufficient cash inflows to offset all the outflows, including loan repayment.

Analyzing the cash flow of a farm household is a crucial task for a lender. Although the diversity of income-generating activities and expenditure patterns makes it somewhat complicated, it must be done. Some of the cash flows will be regular, while others will be irregular. For farmers most production-related cash flows are irregular, i.e. are seasonal in nature. Regular income may come from petty trade activities or off-farm employment, although even these may be affected by seasonal variations (Food and Agriculture Organization of the United Nations, 2010).

Based on the above premise, we therefore propose and develop two conceptual models to guide the present research effort. see figure 1 .

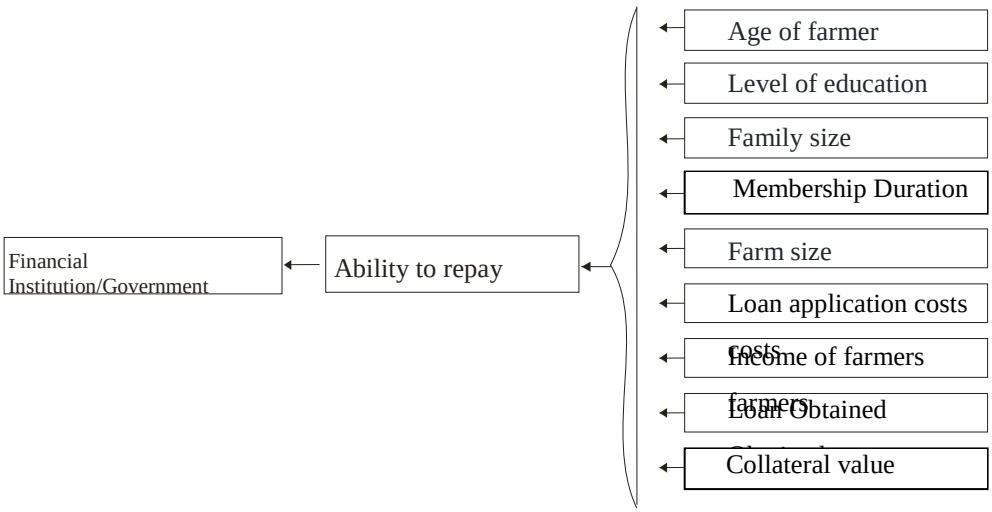

Fig 1. Schema on determinants of credit repayment ability among cooperative farmers
Source: Authors' Conceptualization

Theoretical Framework

In the literature, there is a paucity of theory explaining loanable fund at the microeconomic level. But important theories relating to interest rate that can be applied include: the classical theory of interest rate, loanable funds theory, the keynesian and the modern theory of interest (Jhingan, 2010). But of interest to this study is the loanable funds theory. The famous Swedish economist, Knut Wicksell, expounded the loanable-funds theory of interest, also known as the neo-classical theory of interest.

The loanable funds theory is an attempt to improve upon the classical theory of interest. It recognizes that money can play a disturbing role in the saving and investment processes and thereby causes variations in the level of income.

Thus, it is a monetary approach to the theory of interest, as distinguished from that of the classical economists. In fact, the loanable funds theory synthesises both the monetary and non-monetary aspects of the problem. According to the loanable funds theory, the rate of interest is the price that equates the demand for and supply of loanable funds. Thus, fluctuations in the rate of interest arise from variations either in the demand for loans or in the supply of loans or credit funds available for lending. This implies that interest is the price that equates the demand for loanable funds with the supply of loanable funds. Loanable funds are "the sums of money supplied and demanded at any time in the money market."

Applying this theory to our study, we can deduce that loanable fund is not without some cost(interest). The implication here is that the interest

element of a credit facility is an important determinant of its repayment by the beneficiary. cooperative farmers that are capable of paying up the interest element of loan administered to them are likely to get the nest time they apply. At the microeconomic level, factors other than the interest rate influence credit access and consequently repayment. Some of this include institutional factor and socioeconomic factors. The important ramification of this study is that it will develop a theoretical model to explain and highlight the important determinants of repayment ability of loanable funds to farmers especially the cooperative farmers in the rural areas.

Empirical Literature

The review revealed that there are many factors that influence repayment of credit. Oladeebo et al (2008) examined socio-economic factors such as amount of loan repaid, amount of loan collected and spent on agricultural production, annual net farm income, age, farm size cultivated, farming experience with credit use, and level of education influencing loan repayment among small-scale farmers in Ogbomoso agricultural zone of Oyo State of Nigeria. Among them amount of loan obtained by farmers, years of farming experience with credit use and level of education were the major factors that positively and significantly influenced loan repayment. However, age of farmers influenced loan repayment negatively but significantly. At the end it was concluded that for increase in agricultural production, further disbursement of loans should be targeted at young and better-educated farmers who are more likely to adopt new innovations in agricultural production than their older Counterparts. Data was collected from 100 farmers from 10 villages in 2 Local Government Areas from the zone through multistage random sampling techniques with the help of structured questionnaire and were analyzed using descriptive Statistics and Ordinary Least Square multiple regression analysis.

Kohansal at al (2009) studied the factors influencing on repayment performance of farmers in Khorasan-Razavi province of Iran during 2008. The logit model was used to explain the probability of loan on time repayment as a result of any of the identified independent variables. The signs of the coefficient of independent variables and significance of the variables were used determining largely the impact of each variable on probability of dependent variable. Results showed that farmer's experience, income, received loan size and collateral value have positive effect while loan interest rate, and total application costs and number of installment implies a negative effect on repayment performance of recipients. Comparison of the elasticity of significant variables indicated that loan interest rate is the most important factor in our model. Farming experience and total application costs are the next factors respectively.

Olagunju and Adeyemo (2007) studied factors that determine loan repayment decision among farmers in Southwestern Nigeria during 2005.Data from 180 respondents were collected through multistage sampling technique. Tobit regression results showed farming experience, farm location, cost of obtaining loan, visitation, borrowing frequency and education as important factors in determining loan repayment with coefficients of –0.0285, -0.0661, -0.1196E, 0.1048,0.0518 and 0.0112 respectively. Farm size and dependence showed no significant effect.

Koopahi and Bakhshi (2002) Identified defaulter farmers from non-defaulters of agricultural bank recipients in Iran by using a discriminate analysis. They found use of machinery, length of repayment period, bank supervision on the use of loan had significant and positive effect on the agricultural credit repayment performance. In the other hand incidence of natural disasters, higher level of education of the loan recipient and length of waiting time for loan reception had a significant and negative effect on dependent variable.

Chirwa (1997) specified a probit model to assess the determinants of the probability of credit repayment among smallholders in Malawi. The model allows for analysis of borrowers as being defaulters or non-defaulters. Various specifications of the X-vector were explored by step-wise elimination. However, only five factors (sales of crops, size of group, degree of diversification, income transfer and the quality of information) were consistently significant determinants of agricultural credit repayment. The explanatory power of the model is plausible with the log likelihood statistically significant at 1- percent. Four independent variables – gender, amount of loan, club experience and household size were not statistically significant in various specifications.

Eze and Ibekwe (2007) studied determinants of loan repayment under the Indigenous Financial System in Southeast, Nigeria During (2005). 180 respondents were selected randomly for primary data collection. Data were collected by means of questionnaire and observation. Descriptive statistics and multiple regression techniques were used for analysis. Age of beneficiaries, household size, year of formal education, and occupation were found significant under the system. Amount of loan borrowed and loan duration were found insignificant.

Adeyemo and Agbonlahor (2007) provides empirical analysis of microcredit repayment in Southwestern Nigeria. Multi-stage stratified random sampling procedure was used to collect data from 200 members of microfinance institutions (MFIs) in the study area. Linear multiple regression was used to determine the variables that affected microcredit repayment. The variables that significantly influence repayment: income, distance between dwelling place and bank, amount of business investment, socio-cultural

expenses, amount of loan borrowed, access to business information, penalty for lateness to group meetings, membership of cooperative society, number of days between loan application and disbursement and poverty indicator were analyzed. Poverty was found to hamper repayment.

Saleem and Janm (2010) examined the impact of farm and farmers' characteristics on repayment of farm credit user for agricultural growth in D.I.Khan district during 2007-09.A total of 320 respondents were selected by using stratified random sampling technique. For analysis of data T-Test and ANOVA was used. The result was significant for impact of age, education, marital status, farm type, farm size, farm status and numbers of times credit obtained. But regression result showed significant influence of marital status, farm type and numbers of times credit attained on repayment of farm credit. Collectively all farm and farmers characteristics used in present study are significantly affecting repayment of credit.

Lilian, Stanley, and Simoyan (n.d) evaluates socio-economic factors that could predict repayment ability, quantify the effects of those factors and device a method to curb or manage default in agriculture and/or other credit lending. Data for the analysis were obtained by interviewing a sample of loan beneficiary farmers cooperative society members and non cooperative society members in three local government areas in Kogi State. The major factors that affect repayment ability were identified and the extent of the effect was assessed using the marginal and elasticity of probability. Participation in cooperative societies, non-farm income; farming experience had major effect on repayment ability while family size, farm size and return on investment, had a minimal effect on repayment ability. Poor record keeping, low literacy, and fear of high interest rates were some of the problems and constraints encountered by the farmers and the credit institutions. it is recommended that farmers should be encouraged to keep good records, financial institutions should also ease the process of loan acquisition to enable farmers with low educational background better access to funds. It is also recommended that credit worthiness of to be beneficiaries should be calculated in advance to reduce the frequency of loan default.

Acquah And Addo2 (2011) this study investigated factors influencing loan repayment performance of fishermen. A survey of 67 randomly sampled fishermen was conducted using a standard questionnaire. An interview schedule was the main tool of data collection while descriptive statistics and multiple regression analysis were the main analytical techniques. The study showed that majority of the fishermen interviewed were in the productive age range, had high average annual income and were experienced fishermen. Empirical results indicated that 70.1% of the fishermen interviewed had delayed repayment and this was partly attributed to low catch and high debts from fishmongers. Regression estimation results reveals that loan repayment

increased with years of education, fishing income, years of fishing experience and amount of loan whilst the age and investment made negatively influenced the amount of loan repaid. The regression analysis finds the fishing income, loan and amount of investment made as
significant predictors of the amount of loan repaid. The covariates in the model explained 77% of the variation in the loan repaid. It is recommended that allocation of loans to fisheries sector be increased to stimulate fishing activities and improve repayment performance of fishermen.

Oladeebo and Oladeebo (2008) examined socio-economic factors influencing loan repayment among small scale farmers in Ogbomoso agricultural zone of Oyo State of Nigeria. Data collected from 100 farmers from 10 villages in 2 Local Government Areas from the zone through a multistage random sampling techniques were analyzed using descriptive statistics and Ordinary Least Square multiple regression analysis. Results revealed that farmers were on the average 47years with fewer years of farming experience with credit use (average of 4 years). The average farm size of 3 hectares cultivated by the respondents indicate the small scale nature of their farming business. Results of multiple regression analysis showed that amount of loan obtained by farmers, years of farming experience with credit use and level of education were the major factors that positively and significantly influenced loan repayment. However, age of farmers influenced loan repayment negatively but significantly. The study recommends that for effective farm management and increase in agricultural production, further disbursement of loans should be targeted at young and better educated farmers who are more likely to adopt new innovations in agricultural production than their older counterparts.

Awunyo-Vitor (2012) investigated the determinants of loan repayment default among farmers in Brong Ahafo region of Ghana. Data used in this study was gathered through a survey of 374 farmers in five districts within Brong Ahafo region of Ghana. The study employed Probit model to investigate factors that influence farmer's loan repayment default. The results showed that farm size, and engagement in off farm income generating activities reduces the likelihood of loan repayment default significantly. Also, larger loan amount and longer repayment period as well as access to training are more likely to reduce loan repayment default. Thus, any policy that aimed at improving farm sizes, farm income and cultivation of cash crops would significantly reduce loan repayment default. In addition, loan repayment default would reduce if lenders train their loan beneficiaries and offer them adequate amount of loan and longer repayment period.

Onyeagocha et al Okorji2(2012) the study investigated the loan repayment, its determinants and socio-economic characteristics of microfinance loan beneficiaries in the Southeast states of Nigeria. It was

carried out in three states of the five southeast states. Using a multistage sampling technique, a total of 144 loan beneficiaries in the three segments of MFIs, namely; formal (commercial and development banks); semi-formal (NGOs-MFIs) and informal (ROSCAS, "Isusu" and co-operative societies) were randomly selected and interviewed in the three states. An ordinary least square (OLS) multiple regression analysis was carried out to isolate and examine the determinants of loan repayment from the respondents' perspective. Results showed that beneficiaries had low level of education, operated enterprises at a relatively small scale, had large family size and were of middle age. Further, it was found out that the majority of the respondents were involved in farming enterprise (crop and poultry) even though trading was the most prominent single non-farming enterprise (trading, processing and artisanship). The result affirmed that the informal sector respondents recorded the best repayment rate, followed by the respondents of semi-formal and the banks brought the rear. Outstanding among the determinants of loan repayments from the respondents' perspective were; loan size, level of education, experience, profitability and portfolio diversity. These, therefore deserve special attention in loan administration of MFIs.

Nwachukwu, Alamba, and Oko-Isu (2010) examined determinants of loan repayment performance among farmers in Afikpo North Local Government Area (LGA) of Ebonyi State, Nigeria. The study employed purposive sampling technique in the selection of location and respondents. A sample of 100 small holder agricultural loan beneficiaries from Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB) served as respondents for the study. A set of pretested and structured questionnaire was used to elicit data and information from the respondents. Data were analyzed using discriminant analysis. The discriminant function analysis result showed that 72% of the beneficiaries were operating performing loans while 28% were non-performing loan beneficiaries. On the basis of the results, the study suggested extensive loan periods and adoption of income support measures as panacea for efficient credit delivery and utilization among farmers.

From the empirical literature reviewed, a myriad of factors have been identified to have influence loan repayment. All the studies reviewed were conducted in different socio-economic, cultural and geographical settings which arguably can influence the performance or repayment rate of loan beneficiaries. Therefore, Considering the socioeconomic and environmental peculiarities across regions it is therefore necessary to carryout thorough investigation of the various aspects of loan default because of its importance to farmers, policy makers and the lending institutions. Hence, the major concern of this study in supplementing previous research and bridging the

knowledge gap is to replicate the study in Awka North Local Government Area which is in one of the agricultural zones of Anambra State in order to identify the major socio-economic and institutional factors that affect loan repayment capacity of cooperative farmers. According to Onyeagocha, Chidebelu and Okorji (2012) one way to tackle the loan repayment problem is to investigate the factors which affect the loan repayment.

Methodology

Research Design

This study is a descriptive survey which aims to ascertain the determinants of credit repayment ability among cooperative farmers in Awka north L.G.A of Anambra state. Survey research according to Okeke, Olise and Eze (2008), consists of asking questions, collecting and analyzing data from a supposedly representative members of the population at a single point in time with a view to determine the current situation of that population with respect to one or more variable under investigation.

Area of Study

The area of the study is Awka North Local Government area of Anambra State. The towns that make up the local government are Awba Ofemili, Ugbene, Ebenebe, Achalla(the capital), Urum, Amanasa, Amanuke, Isu Aniocha, Mgbakwu, and Ugbenu. Awka North is in one of the acclaimed agricultural zones of the state. It is created in 1991 and is located in the Anambra North Senatorial Zone of the State. The inhabitants of the areas are mostly subsistence farmers.

Population of the Study

The population of the study is made up all the agricultural cooperatives in Awka North local Government Area of Anambra State. Awka North local Government Area has 99 registered cooperative societies out of the 99 registered cooperative 61 of them are agricultural cooperative societies with a membership size of nine hundred and twenty-seven (927) members (Cooperative Department Ministry of Commerce and Industry, Awka, Anambra State).

Sample Size and Sampling Procedure

One society each was randomly selected from the ten communities that make up Awka North Local Government. The selected societies include:

To determine the sample size, for the purpose of questionnaire distribution; the Taro Tamani formula was used. The formula is stated thus:

$$n = \frac{N}{1+N(e)^2}$$

Where: n=sample size
N=population
e=Margin of error (5% or 0.05)
I=Constant

For the purpose of allocation of sample stratum, the researcher adopted R. Kumaisons (1997) formular. Below is the R. Kumaisons formula for sample size distribution:

$$Nh = \frac{nNh}{N}$$

Where
n =Total sample size
Nh=The number of items in each stratum in the population
N=Population size
nh=The number of units allocated to each stratum
n =19

Table 1: membership size of selected cooperatives

Name of societies	Male	Female	Total	Sample size
Amansea Star FMSC Ltd	16	9	25	16
Country Farmers Mgbakwu FMCS Ltd	17	8	25	16
Ofuobi Amanuke FMCS Ltd	21	4	25	16
Idemili Achalla FMCS Ltd	16	9	25	16
Ebenebe FMCS Ltd	6	7	13	9
Ngwoma Awba Ofemili FMCS Ltd	11	5	16	11
Ugbenu FMCS Ltd	9	8	17	11
Igwedimma Urum FMCS Ltd	5	2	7	5
Isu Aniocha FMCS Ltd	8	7	15	10
Achalla FMSC Ltd	5	5	10	7
Total	**109**	**64**	**178**	**117**

Source: Cooperative Department Ministry of Commerce and Industry, Awka, Anambra State

Description of Questionnaire

The instrument used for the data collection is the questionnaire which was designed and administered to cooperative farmers in the societies. The questionnaire was titled Determinants Of Credit Repayment Among Cooperative Farmers in Awka North L.G.A of Anambra state, Nigeria. The questionnaire has two sections. Section A and Section B. Section A sought information on socio-economic background of respondents. Section B was made up of items designed to elicit information relating to Determinants Of Credit Repayment Among Cooperative Farmers in Awka North L.G.A of Anambra state, Nigeria. Using a close ended questions and a four (4) likert summative scale question of Strongly Agree (SA) 4 points; Agree (A) 3 points; Disagree (D) 2 points; and Strongly Disagree (SD) 1 point.

Administration and Collection of the Questionnaire

The instrument was however administered to the respondents with the assistance of two trained research assistants and the Divisional Cooperative Officers in the selected L.G.A who is also knowledgeable in the field of cooperative. The administration and collection of the instrument took the researcher a period of about four (4) weeks. 117 questionnaires that were administered to the respondents were dully completed and returned. The number returned was used for the analysis.

Data Analysis

Data collected were analyzed using descriptive statistics (frequencies, percentages, mean, and standard deviation) independent t-test statistics and the linear regression model so as to elicit information on the demographic profile of the respondents and also evaluate determinants of credit repayment ability among cooperative farmers in Awka North L.G.A of Anambra state, Nigeria. The demographic profile were processed using descriptive statistics such as frequency and percentages, objectives two and three were analyzed using mean and standard deviation, hypothesis one was processed using the regression model while hypotheses two and three were tested using the paired t-test statistics and independent t-test statistics respectively. All the analysis were done using SPSS version 17.

Linear regression models of the ordinary least square (OLS) approach was used to test hypothesis one in order to ascertain the effect of socio-economic variables on the credit repayment ability among cooperative farmers. The use of (OLS) is informed by the fact that under normality assumption for ei, the OLS estimator is normally distributed and are said to be best, unbiased linear estimator. Gujarati (2008).

The model one is implicitly specified as follows;

$Y = f(x_1, x_2, x_3 \ldots\ldots. X_n + ei)$ …….eq(1)

The model is explicitly specified as follows;

$Y = \alpha+\beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 \ldots\ldots \beta_kx_k + ei$ …….eq(2)

Where:

α = intercept

Y = Amount of loan repaid (In naira).

β_1-β_9=Regression coefficient

ei = Error term designed to capture the effects of unspecified variables in the model

X_1=Age of farmer (yrs)

X_2 =Level of education (yrs)

X_3 =Family size (number of persons)

X_4 =Membership Duration (yrs)

X_5=Farm size (ha)

X_6= Loan application costs (₦)
X_7= Income of farmers (₦)
X_8= loan Obtained (₦)
X_9= collateral value (₦)
ei = Constant term

The α and β_S are the parameters for estimation and these are the error terms s.

The regression analysis was run using SPSS package so as to determine the order of importance of the explanatory variables in explaining the variation observed in the dependent variables. The t-test was also performed to test the significance of each of the explanatory variables at the alpha levels of 5%.

Nh **Presentation of Empirical Results**

Table 2: Distribution according to socioeconomic profile of respondents

Items	Frequency	Percentage(%)	Cumulative(%)
Gender			
Male	76	65.0	65.0
Female	41	35.0	**100**
Total	**117**	**100.0**	
Age (Years)			
≤ 20	1	0.9	0.9
21 - 30	4	3,4	4.3
31 - 40	15	12.8	17.1
41 - 50	70	59.8	76.9
51 - 60	23	19.7	96.6
≥ 60	4	3.4	**100.0**
Total	**117**	**100**	
Marital status			
Married	83	70.9	70.9
Single	15	12.8	83.8
Divorced	1	0.9	84.6
Widow/widower	18	15.4	**100.0**
Total	**117**	**100.0**	
Educational Qualification (in years)			
Primary	82	70.1	70.1
Secondary	24	20.5	90.6
Tertiary	11	9.4	**100.0**
Total	**117**	**100**	
Duration of membership (in years)			
1 - 5	13	11.1	11.1
6 - 10	24	20.5	31.6
11 - 15	49	41.9	73.5
15 - 30	31	26.5	**100.0**
Total	**117**	**100.0**	
Farm size (in hectares)			

1 - 2	64	54.7	54.7
3 - 5	47	40.2	94.9
6 - 8	4	3.4	98.3
9 - 15	2	1.7	**100.0**
Total	**101**	**100**	
Family size (in numbers)			
1 - 3	11	9.4	9.4
4 - 6	52	44.4	53.8
7 - 9	51	43.6	97.4
10-12	3	2.6	**100.0**
Total	**117**	**100**	
Income of farmers (Monthly)			
₦1,000 - ₦ 10,000	1	0.9	0.9
₦ 10,100 - ₦ 20,000	11	9.4	10.3
₦ 20,100 - ₦ 30,000	25	21.4	31.6
₦ 30100 - ₦ 40,000	44	37.6	69.2
₦ 40,000 and above	36	30.8	**100**
Total	**117**	**100**	

Source: field survey January, 2014.

Socioeconomic characteristics of the respondents were presented in Table 2. As regards to the gender of the respondents as shown in table 4.1, 65.0%(76) of the respondents are males while 35.6%(41) are females indicating that the male folks participate in cooperative activities than the female folk in Awka North local government area. All the farmers cuts across the whole age brackets, but majority of them fall with the age bracket of 41-50years and above. This is accounted for more than 80% of the respondents. 70.9%(83) of the respondents are married. 12.8%(15) of the respondents are single. 9% are divorced while 15.4% are widows. All the respondents had formal education. Majority of the respondents 70.1% (82)has primary education. 20.5%(24) has secondary education. While 9.4%(11) has tertiary education. Over 65% of the respondents have above 10years of cooperative experience. Majority of the farmers54.7%(64) have between (1-2) hectares of farm size. Thus indicating that they are small holder farmers. Over 80% of the respondents have above three person in the family. Thus indicating a high level of dependency ratio among the farmers. With respect to income of the farmers, major over 80% of the farmers earn above ₦20,000. Although relatively low considering the high level of dependency ration and loan repayment burden.

Table 3: Distribution according to the range of amount of loan applied for, amount received and amount repaid by the cooperative farmers.

Options	N	Minimum ₦	Maximum ₦	Mean ₦	Std. dev.
Amount of loan applied	117	₦ 50500	₦ 350500	₦ 200927.35	₦ 94343.404
Amount of loan approved	117	₦ 50500	₦ 450500	₦ 238534.19	₦ 100139896
Amount of loan received	117	₦ 50500	₦ 450500	₦ 238534.19	₦ 100139896
Amount of loan repaid	117	₦ 50500	₦ 450500	₦ 173576.92	₦ 106175.372

Source: field survey January, 2014.

As shown in table 3, with respect to the range of amount of loan applied for, amount received and amount repaid by the cooperative farmers, the minimum amount of money applied for , approved, disbursed and repaid was fifty thousand five hundred naira (₦50,500) respectively. The maximum amount of money applied for , approved, disbursed and repaid was four hundred and fifty thousand, five hundred naira (₦450,500). On the average the amount of money applied for , approved, disbursed and repaid by the applicants was two hundred thousand, nine hundred and twenty-seven naira, thirty-five kobo (₦ 200927.35), two hundred thirty eighty thousand, five hundred and thirty-four naira, nineteen kobo (₦238534.19), two hundred thirty eighty thousand, five hundred and thirty-four naira, nineteen kobo (₦238534.19) and One hundred and seventy three thousand, five hundred and seventy six naira, ninety-two kobo (₦ 173576.92) respectively.

Table 4: Distribution according to organizational factors affecting the farmers' credit repayment ability.

Variables	**N**	**Mean**	**Std. dev.**
i. Unprofitable scale of operations	117	3.63	0.714
ii. Defective management and shortage of skilled man power	117	3.45	0.846
iii. Inadequate and ill-time supplies of required production	117	3.74	0.618
iv. Inadequate storage and service inputs	117	3.44	0.855
v. Administrative bottlenecks	117	2.48	0.772
vii. Corrupt and dishonest staff	117	3.59	0.721
viii. Poor educational status of member patron	117	2.44	0.759
ix. Low membership strength	117	3.72	0.555
x. Financial problems	117	3.74	0.532

Source: field survey January, 2014.

Table 4, shows all the organizational factors affecting the farmers' credit repayment ability: Unprofitable scale of operations, Defective management and shortage of skilled man power, Inadequate and ill-time supplies of required production, Inadequate storage and service inputs, Administrative bottlenecks, Corrupt and dishonest staff, Poor educational

status of member patron, Low membership strength and Financial problems. They were all identified as factors affecting the farmers' credit repayment ability. However, Inadequate and ill-time supplies of required production and Financial problems were identified to be the major organizational factors affecting the farmers' credit repayment ability.

Test of hypothesis one

Ho_1: Socioeconomic profiles of the cooperative farmers have no significant influence on the farmers' credit repayment ability

Regression Result

Table 5: Socioeconomic factors influencing cooperative farmers loan repayment

Model	B	Std. error	t	Sig.
CONSTANT	-111410.425	23721.009	-4.697	0.000
AGE	122.919	683.911	0.179	0.858
EDUQUA	14254.736	2126.529	6.703	0.000
FAMISIZE	-3765.288	5074.751	-0.742	0.460
MEMDURA	2602.924	2053.858	1.269	0.207
FARMSIZE	15311.937	3878.798	3.948	0.000
LOANAPCOST	3.254	0.864	3.768	0.000
INCOME	1.698	1.241	1.368	0.174
LOANOBTAINED	-0.016	0.143	-0.114	0.909
COLLATERAL	-0.204	0.090	-2.260	0.026
R	0.959			
R^2	0.919			
Adj. R^2	0.912			
F-statistic	135.160			0.000

Source: Computation from field survey January, 2014.

In other to evaluate socioeconomic factors affecting the farmers' credit repayment ability the result of the regression analysis was ran. Table 5 showed the precision of the model. In general the joint effect of the explanatory variable in the model account for 91.9% of the variations in the factors affecting the farmers' credit repayment ability.

Four coefficients (educational qualification, , farm size, , loan application cost, and collateral value) are significant at 5%, 1% respectively. Age, membership duration and income of the farmers were not significant but it shows a positive relationship with loan repayment.

Test of hypothesis two

Ho_2: There is no significant difference between the amount of loan received and amount repaid by the cooperative farmers.

Table 6:Pared sample t-test statistics between the amount of loan received and amount repaid by the cooperative farmers.

Item	Mean diff	Std. dev	Std. Error	95% confidence interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Amount of loan disbursed and amount of loan repaid	64957.265	47915.585	4429.797	56183.493	73731.037	14.664	116	0.000

Source: Computation from field survey January, 2014.

Hypothesis two states that There is no significant difference between the amount of loan received and amount repaid by the cooperative farmers. To test the hypothesis the t-test statistics was employed. Table 6 is a summary of the t-test values on the mean differences between the amount of loan received and amount repaid by the cooperative farmers. The result of the test shows that the t-calculated value was significant at 0.000 significant level. This implies that there is a significant difference between the amount of loan received and amount repaid by the cooperative farmers.

Test of hypothesis three

Ho_3: Organizational factors affecting the farmers' credit repayment ability are not significant.

Table 7: t-test statistics of organizational factors affecting the farmers' credit repayment.

Variables						**95% confidence interval of the difference**	
	t	**df**	**sig**	**Mean diff.**	**Std. Error**	**Lower**	**upper**
Unprofitable scale of operations	55.002	116	0.000	3.632	0.066	3.50	3.76
Defective management and shortage of skilled man power	44.157	116	0.000	3.453	0.078	3.30	3.61
Inadequate and ill-time supplies of required production	65.520	116	0.000	3.744	0.057	3.63	3.86
Inadequate storage and service inputs	43.553	116	0.000	3.444	0.079	3.29	3.60
Administrative bottlenecks	34.713	116	0.000	2.479	0.071	2.34	2.62
Corrupt and dishonest staff	53.852	116	0.000	3.590	0.067	3.46	3.72
Poor educational status of member patron	34.820	116	0.000	2.444	0.070	2.31	2.58
Low membership strength	72.500	116	0.000	3.718	0.051	3.62	3.82
Financial problems	75.993	116	0.000	3.735	0.049	3.64	3.83

Source: Computation from field survey January, 2014.

Hypothesis three states that Organizational factors affecting the farmers' credit repayment ability are not significant. To test the hypothesis

the t-test statistics was employed. Table 7 is a summary of the t-test values on the Organizational factors affecting the farmers' credit repayment ability. The result of the test shows that all the factors (Unprofitable scale of operations, Defective management and shortage of skilled man power, Inadequate and ill-time supplies of required production, Inadequate storage and service inputs, Administrative bottlenecks Corrupt and dishonest staff, Poor educational status of member patron, Low membership strength and Financial problems) are significant. All the t-calculated values were significant at 0.000 significant level. This implies that the Organizational factors affecting the farmers' credit repayment ability are not significant**.**

Summary of Findings

i. From the analysis, the joint effect of the explanatory variable in the model account for 91.9% of the variations in the factors affecting the farmers' credit repayment ability. Four coefficients (educational qualification, farm size, , loan application cost, and collateral value) are significant at 5%, 1% respectively. Age, membership duration and income of the farmers were not significant but it shows a positive relationship with loan repayment.

ii. There is a significant difference between the amount of loan received and amount repaid by the cooperative farmers.

iii. All the Organizational factors (Unprofitable scale of operations, Defective management and shortage of skilled man power, Inadequate and ill-time supplies of required production, Inadequate storage and service inputs, Administrative bottlenecks Corrupt and dishonest staff, Poor educational status of member patron, Low membership strength and Financial problems) affecting the farmers' credit repayment ability are significant at 0.000 significant level**.**

Conclusion

This study has examined the farmers' socio-economic characteristics as well as determine which of the characteristics that influence loan repayment. It has also examined the range of amount of loan applied for, amount received and amount repaid by the cooperative farmers and ascertained organizational factors affecting the farmers' credit repayment ability. The findings are rife with insightful empirical results indicating that farmers credit repayment ability is based on many factors.

Recommendations

Based on the analysis and findings of this study, the researcher therefore recommends that:

- Farmers can be made to improve on their repayment of farm credit by adoption of income support measures which would serve as panacea.
- Lending institutions should ensure that whoever they are lending to meets a minimum threshold in asset value before loans are accessed. This will help to reduce defaulters.

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