

Access to Agricultural Credit and Cassava Production: A Study of Selected Cooperative Farmers in Anambra State

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ABSTRACT

This study examined access to agricultural credit and cassava production: A study of selected cooperative farmers in Anambra State, Nigeria. This study adopted a descriptive survey research design that aimed to determine the relationship between the independent variables and dependent variable in a population. The population of this study was made up of 2978 members of selected thirty six cooperative societies in Anambra State. A sample of 353 was determined for the study using Taro Yamani formula. A structured questionnaire was administered to 353 respondents only 348 responded to the questionnaire. The data collected using the questionnaire was analyzed using descriptive statistics like frequency, mean and standard deviation; and also inferential statistics such as regression analysis and t-test statistics. All analysis was conducted using SPSS version 23. Findings show that all the five coefficients (cost of cooperative credit, amount of credit borrowed, loan repayment period, interest paid and loan repayment performance) significantly influence cassava production in Anambra State. In general, the joint effect of the explanatory variables-independent variables-in the model account for 0.883 or 88.3% of the variations in the influence of cooperative credit on cassava production in Anambra State, Nigeria. This implies that 88.3% of the variations in the cassava production are being accounted for or explained by the variations in the explanatory variables. While other independent variables not captured in the model explain just 11.7% of the variations in cassava production. The study therefore recommends that credit institutions should supervise and spread the repayment period for credit obtained in such a way that the cost will not be heavy. Adequate credit facilities should be provided for farmers to enable them increase their production capacity. The loan repayment period for the farmers should be well spread to enhance their productivity among others. Low interest rate should be charged farmer to enable them reduce their rate of defaulting repayment.

KEYWORDS: Cost of credit, Amount of Credit Borrowed, Loan repayment period, Interest Paid Financial Intermediation

1. INTRODUCTION

Agricultural credit has remained a critical input in agricultural production, thus it is has been describe as a very significant farm input and has also contributed a great deal in improving the income of farmers particularly in developing countries (Linh, Long, Chi, Tam & Lebailly, 2019). Agricultural credit is a vital factor in improving agricultural productivity. Therefore, access to agricultural credit enables farmers increase their production as well as

guarantees the nations with sustainable food security. In the process of agricultural development access to credit is deemed to have positive impact on productivity since it provides farmers with resources needed to start the production process. Thus, greater access to credit can induce agricultural production and support government program for food security (Awotide, Abdoulaye, Alene & Manyong, 2015)

How to cite this paper: Nwafor, Grace Obiageli | Umebali, Emmanuel E. "Access to Agricultural Credit and Cassava Production: A Study of Selected Cooperative Farmers in Anambra State" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-5 | Issue-5, August 2021, pp.957-962, URL: www.ijtsrd.com/papers/ijtsrd45009.pdf



IJTSRD45009

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Access to farm credit possess a very serious challenge to farmers in Nigeria. Yet, it has been described to be a critical farm input that enhances productivity of farmer if adequately supplied (Ukwuaba, Owutuamor & Ogbu, 2020). In developing countries where the majority of farmers are resource-poor rural dwellers, rural credit markets are essential for agricultural growth and development (Awotide, Abdoulaye, Alene & Manyong, 2015). However, a number of factors contain farmers from accessing adequate farm credit where it is even available. Among the factors include cost of credit, amount of credit borrowed, repayment period, interest paid and loan repayment performance. These challenges are occasioned by seasonal pattern of farming activities and the various uncertainties farmers encounter (Aladejebi, Omolehin, Ajiniran & Ajakpovi (2018). One of the groups of farmers that encounter the challenge of access to credit are the cassava farmers and which are the focus of this study. Adeyemo, Amaza, Okoruwa, Akinyosoye, Salman and Adebayo (2019) describe cassava as a food security crop with a potential to provide off-season calories even on low-nutrient soils in many developing countries. Consequently, the important nature of cassava to the growth and development of Africa and Nigeria in particular demands that adequate financing and funding of cassava production is imperative.

Efforts by the present and previous government including donor agencies to improve agricultural production and cassava in particular have not yielded the desired result. Ogbuabor and Nwosu (2017) noted that "some of the policies include the Nigerian Agricultural and Co-operative Bank which was established in the year 1973 as part of government efforts to inject oil wealth into the agricultural sector through the provision of credit facilities to support agriculture and agro-allied industries. Also the Rural Credit Scheme was introduced in 1977 by the Central Bank of Nigeria, whereby commercial banks were required to open rural branches. The Agricultural Credit Scheme was also set up in 1977 with the primary aim of inducing banks to increase and sustain lending to agriculture. There are other policies which were set up by the federal government and linked up with commercial banks for the purpose of encouraging the farmers to produce more food such as National Food Security Programme, Special Programme on Food Security Programme and Fadama which are introduced to diversify agricultural products into other uses. Another great measure for improving the flow of credit to the agricultural sector was an attempt to improve the credit mix by lending in the form of cash and in kind to farmers".

Despite these measures by the government that is expected to grow agricultural sector through cassava production and enable the country feed its growing population, generate employment, earn foreign exchange and provide raw materials for industries, there is still a serious food demand and supply gap. The country still suffer serious hunger and poverty. But there is a serious need to address the perceived serious hunger and poverty challenges in the country through adequate financing of cassava production in the country. The cooperative particularly the agricultural cooperative has been touted by the government as a vehicle for improving agricultural production in Nigeria. This is corroborated by Ekwere (2016) who stated that organization of cassava cooperative farmers has in recent years become one of the most important pre-conditions for effective mobilization of production resources as well as, accelerates farmer's progress. It is therefore imperative to analyze the influence of cooperative credit on cassava production in Nigeria.

Statement of the Problem

This study was informed by the perceived inability of the smallholder cassava farmers to easily assess agricultural credit and also obtain credit at subsidized rates. This perceived farmers outcry has been a serious problem militating against viable approaches to promote worthwhile agricultural-oriented programmes that will enhance cassava production and processing in Nigeria. Presently, the problem of food security and the fight against hunger and starvation have been a topical issue as most of the developing countries including Nigeria is struggling to be liberated from the grip of hunger and starvation. A number of studies on the importance and influence of credit on agricultural production have been carried out by scholars in an attempt to lose grip from the scourge of poverty (Gbigbi & Achoja, 2019; Chandio, Jiang, Wei & Guangshun, 2018; Ayegba & Ikani, 2013; Medugu, Musa & Abalis, 2019) but there seems to be a paucity of research that is carried out on the platform of cooperative. Again, a critical evaluation from extant literature revealed that there are component of credits that can be used as regressors and regressand (independent variables and dependent variables) in evaluating the influence of credit in agricultural production which is lacking in most of the studies. Some of these variables include: cost of credit, amount of credit borrowed, repayment period, interest paid and loan repayment performance. Considering the importance of cassava to food security and fight against hunger and poverty; and also the limited empirical literature on influence of cooperative credit on cassava production particularly in Anambra state, this study is therefore vital to

bridge the literature and knowledge gap, thus warranting an empirical investigation to analyze access to agricultural credit and cassava production: A study of selected cooperative farmers in Anambra State, Nigeria.

Objectives of the Study

The broad objective of this study is to analyze access to agricultural credit and cassava production: A study of selected cooperative farmers in Anambra State, Nigeria. The specific objectives of the study are to:

- A. evaluate the extent to which cost of credit has influenced cassava production in Anambra State, Nigeria.
- B. examine the extent to which amount of credit borrowed has influenced cassava production in Anambra State, Nigeria.
- C. determine the extent to which repayment period has influenced cassava production in Anambra State, Nigeria.
- D. assess the extent to interest paid has influenced cassava production in Anambra State, Nigeria.
- E. ascertain the extent to which loan repayment performance has influenced cassava production in Anambra State, Nigeria.

2. METHODOLOGY

Research Design

This study adopts a descriptive survey research design that involves 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 (Okeke, Olise & Eze, 2008). Descriptive survey research design can be quantitative or qualitative, but this study is quantitative in nature. According to Micheal, Oparaku and Oparaku (2012), in a quantitative survey research design, the researcher's aim is to determine the relationship between the independent variables and dependent variable in a population. Quantitative research design is either descriptive (variables usually measured once) or experimental (variables measured before and after a treatment). The questions asked are to elicit responses that will answer the research questions and address the objectives of the research.

Population of the Study

The population of the study consist of all the Members of Farmers Multipurpose Cooperative societies in Anambra state. Which include Onitsha North, Onitsha south, Oyi, Ogbaru, Agbaru East, Anambra West, and Ayamelum for Anambra North, Ihiala, Nnewi North, Nnewi south, Orumba South,

Orumba North, Aguata and Ekwusigo for Anambra South, Anaocha, Dunukofia, Njikoka, Idemili South, Idemili North, Awka North and Awka south for Anambra Central. Putting the members at 3,557 found in 214 viable societies. Therefore the population of this study is 3,557 members in 214 cooperative societies.

Determination of Sample Size

For various sampling techniques, there are appropriate sample size determination technique, which mostly depends on the confidence level, bound on the error and size of the population. Samples are meant to represent population when the entire population cannot be studied. We used a combination of multi-stage sampling and random sampling techniques in this work. In multi-stage sampling, the target population is first divided into first-stage sampling units. A random sample of these is thereafter taken. This is in line with Cochran's (1977) idea that it is customary to select the first stage sampling units with the probabilities of selection of the units proportional to their size and not equal as in the case of simple random sampling. The first-stage sampling units, which was selected in this sample, are then divided into smaller second random sampling units, which will be sampled again.

Four local governments were randomly selected from each of the three agricultural zones that make up Anambra state. The decision to select only four local governments were largely purposive and for convenience. The local governments selected include Dunukofia, Njikoka, Idemili South, and Awka North from Anambra Central. Ihiala, Nnewi South, Orumba South and Ekwusigo from Anambra South. Oyi, Ogbaru, Anambra East and Ayamelum from Anambra North. From the twelve local governments, three societies each were selected making a total of thirty six cooperative societies with membership strength of 2978. The researcher applied the Taro Yamani formula to obtain the desired sample size for the study. The formula is as stated as below:

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

Where n is the desired sample size
N= Population
I = Mathematical constant
e= Sampling error (5% in this case).

In this case, n=? (Unknown), N=359, e = 0.05 and I= constant

Substituting the above values into the formula we have;

Substituting in the above formula:

$$\begin{aligned}
 n &= \frac{2978}{1+2978 (0.05)^2} \\
 &= \frac{2978}{1+2978 (0.0025)} \\
 &= \frac{2978}{8.4425} \\
 &= 352.6 \\
 &= 353
 \end{aligned}$$

For the purpose of allocation of sample stratum, the researcher adopted R. Kumaison's formula. 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 = 353

Sources and Method of Data Collection

Survey data were collected from cassava farmers, who acquire credit or loan from the cooperative society. The study will make use of both primary and secondary data. Primary data were collected using well structured questionnaires to obtain information from the respondents in the study area and through oral interview. Secondary data was sourced from journals, statistical publications, textbooks, articles, past projects, and the internet.

Description of the Research Instrument

The research instrument used data collection is the structured questionnaire. It was used to obtain data from both the cooperative and non cooperative farmers in the study area. The questionnaire has two sections: Sections A and Section B. Section A seek information on the socio-economic background of respondents while Section B is designed to elicit information relating to access to cooperative credit, other sources of credit, cassava output and cassava revenue, cost of cassava farming and constraints to cooperative credit access. Out of 353 questionnaires distributed only 348 were returned.

Method of Data Analysis

Data collected were analyzed using descriptive statistics (frequencies, percentages, mean, and standard deviation) and the inferential statistics such as test statistics and the linear regression model. The

demographic profiles was processed using descriptive statistics. Thereafter, the seven objectives will be processed using descriptive statistics (like mean and standard deviation) and the regression model of the Ordinary Least Square (OLS). T-test and F-test statistics was used to test the hypotheses of the study and the overall fitness of the model. All the analyses was done using SPSS version 23. Linear regression model of the Ordinary Least Square (OLS) approach was used to analyze the objectives in order to ascertain the influence and also determine the relationship between the independent variables and dependent variable in the conceptualized model of the study. The use of Ordinary Least Square (OLS), is informed by the fact that under normality assumption for α_i , the Ordinary Least Square (OLS) estimator is normally distributed and is said to be best, unbiased linear estimator (Gujarati and Porter, 2008).

Model Specification

The model for this study is anchored on the model developed by Adofu & Audu (2015) the study examined the impact of financial deepening (FIND) proxied by banks credits to agricultural sector development in Nigeria. By adopting Adofu & Audu’s type model and modified it to incorporate cost of credit, amount of credit borrowed, repayment period, interest paid and loan repayment performance.

Thus, the model for the study is specified as:

Thus, the model of this study, is stated as follows:

The functional form of the model is
 $CAP = f(COC, AMC, RPC, INP, LRP).....(1)$

The mathematical form of the model is
 $CAP = \beta_0 + \beta_1 COC + \beta_2 AMC + \beta_3 RPC + \beta_4 INP + \beta_5 LRP (2)$

The econometric form of the model is
 $CAP = \beta_0 + \beta_1 COC + \beta_2 AMC + \beta_3 RPC + \beta_4 INP + \beta_5 LRP + \alpha_i (3)$

Where; CAP = Cassava Production (proxied by farmers' output)

- COC = **Cost of credit**
- AMC = **Amount of credit borrowed**
- RPC = **Repayment period**
- INP = **Interest paid**
- LRP = **Loan repayment performance**

- β_0 = Intercept of the model
- $\beta_1 - \beta_5$ = Parameters of the model
- α_i = Stochastic error term

3. RESULTS AND DISCUSSION

Regression Analysis Result

Table 1: Regression Result on access to agricultural credit and cassava production in Anambra State, Nigeria

Model	B	Std. error	T	Sig.
Constant(C)	0.155	0.034	4.579	0.000
Cost of cooperative credit	-0.136	0.061	-8.749	0.000
Amount of Credit Borrowed	0.160	0.066	-6.991	0.003
Loan repayment period	0.516	0.128	4.046	0.006
Interest Paid	-0.449	0.143	3.143	0.005
Loan Repayment Performance	0.364	0.112	3.254	0.047
R	0.903			
R²	0.883			
Adj. R²	0.850			
F-statistic	78.63			0.000

Source: Field Survey, 2020

Dependent Variable: Farmers' output

In order to also determine the influence of cooperative credit on cassava production in Anambra State, Nigeria, the analysis was also done based on statistical criteria by applying the coefficient of determination (R^2) and the F-test. In general, the joint effect of the explanatory variables-independent variables-in the model account for 0.883 or 88.3% of the variations in the influence of cooperative credit on cassava production in Anambra State, Nigeria. This implies that 88.3% of the variations in the cassava production are being accounted for or explained by the variations in the explanatory variables. While other independent variables not captured in the model explain just 11.7% of the variations in cassava production. All the six coefficients (Cost of cooperative credit, Amount of Credit Borrowed, Loan repayment period, Interest Paid and Loan Repayment Performance) significantly influence cassava production in Anambra State.

4. CONCLUSION

RECOMMENDATIONS

Cost of cooperative credit has a negative relationship with cassava production. This implies that the cost of cooperative credit and cassava production increase in the opposite direction. That is to say that cost of cooperative credit has a inverse relationship with cassava production. In other words, 1% increase in cost of cooperative credit will bring about 13.6% decrease in cassava production. Amount of credit borrowed has a negative relationship with cassava production. In other words, 1% increase in amount of credit borrowed will bring about 16.0% reduction in cassava production. Loan repayment period has a direct and positive relationship with cassava production. As the loan repayment period grows, it increases the cassava production. In other words, 1% increase in loan repayment period will bring about 51.6% increases in cassava production. Interest paid also have direct and positive relationship with cassava production. Therefore, 1% increase in interest paid will bring about 44.9% increase in cassava production. Loan Repayment Performance have direct and positive relationship with cassava production. This implies that loan repayment performance move in the same direction with cassava production. It has a positive influence on cassava production. As loan

AND

repayment performance, cassava production also increases.

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

- In order to address the challenge of cost of cooperative credit, credit institutions should supervise and spread the repayment period for credit obtained in such a way that the cost will not be heavy.
- Adequate credit facilities should be provided for farmers to enable them increase their production capacity.
- The loan repayment period for the farmers should be well spread to enhance their productivity
- Low interest rate should be charged farmer to enable them reduce their rate of defaulting repayment.
- For improved loan repayment performance farmers should be well supervised to ensure that the credit obtained is well utilized. The farmers should plan for a large farm so that the expected income will improve their capacity to repay farm credit.

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