



Assessment of Agricultural Credit Sources for Food Crop Marketing in Ondo State of Nigeria

O. A. Olofinsao^{1*}, F. M. Oluwatusin¹ and O. S. Ojo²

¹*Agricultural Economics and Extension Services, Ekiti State University, Ado-Ekiti, Ekiti State, Nigeria.*

²*Agricultural Economics and Extension, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria.*

Authors' contributions

This work was carried out in collaboration between all authors. Author OAO designed the study and wrote the protocol and the first draft of the manuscript. Author FMO did the statistical analysis and interpretation. Author OSO helped in the source for data. All authors read and approved the final manuscript.

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ABSTRACT

Marketing of food crops in Nigeria is on a declining trend due to the inability of marketers to access proper and efficient agricultural credit to expand their marketing network. Hence, this study aimed to assess the sources of agricultural credit for food crop marketing in Ondo State, Nigeria. Well structured questionnaire was administered to 120 marketers of food crops in the study area. Descriptive analysis was used to ascertain the socio-economic characteristics of the respondents. Regression analysis was used to determine the relationship between the crop marketer's economic characteristics and the amount of loan accessed in the study area. The main determinants of the amount of loan collected by the marketers were education, cost of marketing operation and marketers' income. It was recommended that government should put in best policies that would help to lessen the marketing cost especially transport cost, thus improving the net income of the food crop marketers. Also, extension officers and research institutes should help in training marketers on the conditions and regulations governing the issues and use of credit.

*Corresponding author: E-mail: tosinolofin14@gmail.com;

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1. INTRODUCTION

Food security is achieved when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life [1].

Food is the most essential need of every man. Omotesho [2] noted that the ultimate aim of agricultural production is to get agricultural products to the consumers in the form that will be valuable to them. Food items including meat, fish, milk and products, eggs and products, fruits, vegetables, cereals, legumes, roots and tubers are some of the common agricultural products.

Ojo and Adebayo [3] stated that any system where food demand does not appropriately grow as the supply is no doubt one with pending food crisis. Despite pretensions to the contrary, Nigeria is far from being completely food secured. At the global level, somewhere in the world, a child dies of hunger every ten seconds UNO [4] although the planet has more than enough food for all.

Food problems in Nigeria have been quite numerous and complex over the years both at the micro and macro level. This can be categorized into two namely demand constraints and food production (supply) constraints.

Food production constraints have been grouped into three:

- Constraints created by the soil and climatic environment in which production takes place.
- Problem arising from the status of factors of production.
- Constraints covered by the poor technological base such as the uses of hoe, cutlass and illiteracy.

Demand constraint: the major constraint here is that food demand which is the highest demand of this sector has generally grown faster than either food production or total food supply. This was not the case during 1960's and 1970's when Nigeria was thought to be self – sufficient in food production.

Etonihu et al. [5] noted that there are two major sources of agricultural credit (formal and informal sources). Formal source, involves institutions

providing intermediation between depositors and lenders charge relatively low rates of interest that usually are government subsidized. Informal source involves money been lent by private individuals.

One of the factors that have contributed to the declining productivity of the sector is marketers' limited access to credit facilities. According to Alfred [6] acquisition and utilization of credit for agricultural purposes promote productivity and subsequently improved food security status of a community.

The crucial role of credit in agricultural production and development can also be evaluated from the perspective of the quantity of problems emanating from the lack of it. In modern farming business in Nigeria, provision of agricultural credit is not enough, but efficient use of such credit has become a major factor in order to increase food marketing.

1.1 Statement of the Problem

Idachaba [7] observed that food insecurity could be caused by supply-side factors and demand-side factors. One of the supply side causes of food insecurity as identified by Idachaba [8] is food crop marketing problem. For this reason, it is very imperative to assess the sources of credit for food crop marketing. The demand for agricultural credit is high in small market communities mainly because of the poverty cycle, in which the credit is needed to help in breaking the vicious cycle. The farm is a social, political and economic entity and hence, credit is required for other purposes which though not directly related to farm production but indirectly influence it.

Answers to the following questions would help in achieving the objectives of assessing the sources of credit for food crop marketing operations.

1. What were the sources of agricultural credit for food crop marketing?
2. What were the factors responsible for the inability of marketers to get sufficient funds or credit for food crop marketing?
3. What were the problems encountered by the marketers in the sourcing for credit?
4. What are the factors determining the amount of loan collected by marketers?

1.2 Objectives of the Study

The main objective of this research work was to assess the sources of Agricultural credit for food crop marketing in Ondo state, Nigeria.

The specific objectives were to:

1. Identify the socio-economic characteristics of the respondents (food crop marketers).
2. Identify the various sources of agricultural credit available to food crop marketers in the study area.
3. To ascertain the problems encountered by the marketers in sourcing for credit.
4. Identify the factors determining the amount of loan collected by marketers.

1.3 Justification of the Study

This study was very crucial in many respects. First, an understanding of the process of financial intermediary is important in linking producers to consumers. Second, this understanding facilitated the promotion of marketing efficiency. Finally, the study offered recommendations on the ways of alleviating the financial problems facing food crop marketers in the study area and in Nigeria at large.

2. RESEARCH METHODOLOGY

2.1 Study Area

The study was carried out in Ondo State, Nigeria. Ondo State has eighteen local governments area and located on coordinates 7°10'N 5°05'E. Ondo state has a tropical climate with agro-climatic conditions suitable for farming. It has abundant land area of 15,500 sq Km which extends to the Atlantic Ocean in the south [9]. The state is endowed with a variety of vegetation zones from the coast of the Atlantic Ocean to the derived savannah zone of the north that is suitable for utilization for varieties of agricultural purposes.

Agriculture (including fishing) constitutes the main occupation of the people of the state. Indeed, Ondo State is the leading cocoa producing state in Nigeria. Other agricultural products include yam, maize, palm produce (oil and Kernel), cassava, poultry birds, pigs, cattle, goat, etc. The coastal areas and the inland waterways provide for fish production, thus, the state has a high potential for impressive agricultural productivity and is blessed with abundant human and material resources.

2.2 Sampling Techniques and Sample Size

The multistage random sampling technique was used. The interview was carried out through the aid of a well- structured questionnaire consisting of some open-ended questions. The first stage selection involved the random selection of two Local Government Areas in Ondo State. In the second stage, three (3) local communities were randomly selected from each Local Government Area to give a total of 6 communities. Twenty food crop marketers were randomly selected from each community to give a total sample size of 120 respondents.

2.3 Data Collection and Sources

Data for this research work were obtained from primary and secondary sources. Primary data were collected with the aid of a well-structured questionnaire. It was administered to food crop marketers (wholesalers and retailers) within the stipulated study areas. The 120 questionnaires were collated and analyzed. The secondary data were gotten from journals, textbooks, and other relevant texts.

2.4 Data Analysis Tools

Data collected from the field were analyzed using both descriptive statistics and regression analysis. Descriptive analyses used were mean, frequency table, percentage, pie-chart and bar chart. These were used to analyze the socio-economic characteristics of the respondents, the various sources of agricultural credit available to food crop marketers in the study area and the problems encountered by the marketers in sourcing for credit.

The regression analysis was used to determine the effect of socio-economic characteristics on the amount of loan acquired by the respondents. The dependent variable was an amount of loan collected and the independent variables were the factors responsible for assessing agricultural credit.

Model specification

Implicitly it was stated as:

$$Y = F(X_1, X_2, X_3, X_4, X_5, X_6, X_7, U_1) \quad (1)$$

Where Y = Amount of loan collected
 X_1 = Educational level
 X_2 = Cost of marketing operations (Naira)
 X_3 = Age in years
 X_4 = Sex
 X_5 = Marketers income (Naira)
 X_6 = Type of seller (wholesaler or retailer)
 X_7 = Household size
 U_i = Error term

Explicitly as:

SEMI-LOG

$$Y = \beta_0 + \beta_1 \text{Log}X_1 + \beta_2 \text{Log}X_2 + \beta_3 \text{Log}X_3 + \beta_4 \text{Log}X_4 + \beta_5 \text{Log}X_5 + \beta_6 \text{Log}X_6 + \beta_7 \text{Log}X_7 + U_i \quad (2)$$

EXPONENTIAL

$$\text{Log} Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + U_i \quad (3)$$

COBB-DOUGLAS

$$\text{Log} Y = \beta_0 + \beta_1 \text{Log}X_1 + \beta_2 \text{Log}X_2 + \beta_3 \text{Log}X_3 + \beta_4 \text{Log}X_4 + \beta_5 \text{Log}X_5 + \beta_6 \text{Log}X_6 + \beta_7 \text{Log}X_7 + U_i \quad (4)$$

Where:

X_1, \dots, X_7 as defined earlier.
 β_0, \dots, β_7 are the parameters to be estimated.
 U_i = Error term

2.5 Evaluation Criteria

Trial analyses were carried out on three specified models (Semi-Log, Exponential and Cobb-Douglas) to determine which of the model fit the data most.

The following criteria were used to select the lead equation.

1. The magnitude of the standard error (S.E).
2. The goodness of the fit (R^2)
3. The appropriateness of the sign of the regression coefficient.
4. The significance of F-value as a measure of significance for the entire function.

The equation with the best fit after taking all the above into consideration was selected as the lead equation.

3. RESULTS AND DISCUSSION

3.1 Socio-economic Characteristics

The socio-economic characteristics of the respondents considered were gender, age, marital status, educational level, household size, nature of crop marketing, marketing experience, types of crops marketed, access to credit, interest rate, the amount borrowed and loaning period.

The gender distributions of the respondents revealed that majority of the respondents (75%) were female while the remaining (25%) were male. It implies that crops marketing were dominated by female. Hence female seem to be better marketers than their male counterparts. Also, women are good canvassers. Thus, they indirectly promote agricultural marketing activities.

The results show that 25.5% of the respondents were below 31 years, 35% were within 31 and 40 years of age, 29.2 were within 41 and 50 years, and 13.4% respondents were above 50 years of age. The mean age was 42.3 years. The majority (74.2%) of the respondents were between the ages of 31 and 50 years which imply that they were in their productivity ages. Marketing activities are efficient when respondents have the strength to carry out the task of marketing which ranges from buying, sorting, value addition, transportation and other facilitative functions.

The result showed that 12.5% of the respondents were single, 22.5% were divorced or widowed, and the majority (65%) been married. Majority of the respondents were married implies that there could be the availability of labour for marketing. It is however noted that marital status is a function of a household size of respondents. Those that are single may rely on hired labour to perform marketing activities.

The educational levels of the respondents were defined as follows, 14.2% had no formal education, 29.2% had primary education and 52.5% had secondary education, while 4.1% had tertiary education. This implies that majority of the respondents were marginally educated, thus, the possibility of observing efficiency in the marketing of crops among the respondents that are educated.

Table 1. Socio-economic characteristics of the respondents

Characteristics	Frequency	Percentage	Mean
Gender			
Male	30	25.0	
Female	90	75.0	
Age (Years)			
Below 31	27	22.5	
31- 40	42	35.0	
41 -50	35	29.1	
51 -60	8	5.7	
Above 60	8	6.7	
Marital status			
Single	15	12.5	
Married	78	65.0	
Divorced	17	14.2	
Widowed	10	8.3	
Educational level			
No formal education	17	14.2	
Primary education	35	29.2	
Secondary education	63	52.5	
Tertiary education	5	4.1	
Household size			
Below 3	19	15.8	6.8
3 -5	40	33.4	
6 -8	48	40.0	
Above 8	13	10.8	
Nature of crop marketing			
Full-time	87	72.5	
Part-time	33	27.5	
Marketing experience (years)			
Below 5	2	1.7	
5 -10	46	38.3	
11 -15	37	30.8	
16 -20	9	7.5	
Above 20	26	21.7	
Crops marketed			
Cereal crops	30	25.0	
Legumes	28	23.3	
Root and Tuber	25	20.8	
Vegetables	04	3.3	
Combination	33	27.6	
Access to credit			
Yes	120	100.0	
No	0	0.0	
Interest rate (%)			
2 -5	68	56.7	
5 -10	52	43.3	
Amount borrowed (N)			
Below 50,000	65	54.2	
50,000 -70,000	48	40.0	
Above 70,000	7	5.8	
Loaning period (Months)			
Below 6	58	48.3	
6-12	50	41.7	
Above 12	12	10.0	
Monthly cost			
Marketing			₦ 4,327.15
Packaging			₦ 1,200
Sorting			₦ 1,060
Storage/ warehousing cost			₦ 800
Transport cost			₦ 5,150

Source: Field Survey, 2017

The household size distribution of the respondents showed that 15.8% had household size below 3, 33.4% had household size between 3 and 5, 40% had household size in the range of 6 to 8, while 10.8% had household size above 8. The mean household size was 6.8, implying a fair large household size, and thus, availability of free family labour if marketers employ their family in the activities.

Majority of the respondents (72.5%) were full-time crop marketers, while the remaining (27.5%) engaged in other occupation apart from crop marketing. Full-time marketers will have more access to credit and perhaps high concentration on their job, thus, enhancing their marketing efficiency and creditworthiness. Unlike crop marketers that operate on a part-time basis, there could be diversion of fund to non-agricultural activities.

The respondents were distributed according to their marketing experience as follows: 1.7% had below 5 years, 38.3% had between 5 and 10 years, 30.8% had between 11 and 15 years, 7.5% had crop marketing experience between 16 and 20 years, while 21.7% had above 20 years of marketing experience. The mean crop marketing experience was 14.3 years. This implies that majority of the respondents were had adequate experience in food crop marketing. It is possible to observe an increase in their marketing efficiencies, thus predisposing them to access different sources of credit.

The respondents were distributed by types of food crops they market as follows, 25% were into cereals (staple) marketing, 23.3% were legumes marketers, 20.8% marketed roots and tuber crops, 3.3% were vegetable marketers, and the majority of them had a combination of different food crops they market. This implies that there are virtual all the food crops in the marketing chain of agricultural commodities in the study area. Also, these crops are necessity goods, thus there is a continuous demand for them.

The respondents are grouped with respect to the interest rate charged on their credit, 56.7% of the respondents were charged between 2 and 5% as interest on credit, while the remaining 43.3% were charged between 5 and 10% as an interest rate. This implies that the credit is a serviceable one, thus recurring charges as time or loaning period become extended.

The majority (54.2%) of the respondents borrowed below ₦ 50,000, 40% borrowed

between ₦ 50,000 and ₦ 70,000, while 5.8% of the respondents borrowed above ₦ 70,000. The mean amount of loan borrowed was ₦ 47,999.48. This implies that soft loans available to the marketers are small. This could also be due to the fact that, most of the marketers were operating on a small scale.

Majority (48.3%) of the respondents' payback below 6 months, while the loaning period of respondents below 6 and 12 months constituted about 41.7 percent of the distribution. Only 10% of the distribution had above one year as loaning period. The implication of this is that the loan is provided on short-term basis.

The average monthly cost incurred on marketing was ₦ 4,327.15, with packaging cost been ₦ 1,200, sorting cost been ₦ 1,060 and storage/warehousing cost of ₦ 800 on monthly basis. The highest share of cost incurred in marketing of food crop was transportation. This implies that transportation cost is moderately higher when compared to the other cost incurred, thus affects marketer's revenue.

3.2 Sources of Agricultural Credit

All the respondents had shown that they have access to credit facilities either formal or informal. About 13% of the respondents obtained their credit from financial institutions (banks, microfinance, etc.), 38% got their credit through cooperatives, 8% obtained their credit from family members and friends, and majority of the respondents obtained their credit from thrift called 'esusu or ajo'. This has been an ancient form of accessing credit and still in use today by marketers mainly because of its simplicity. This finding is in accordance with Oluwatusin and Olofinsao [10].

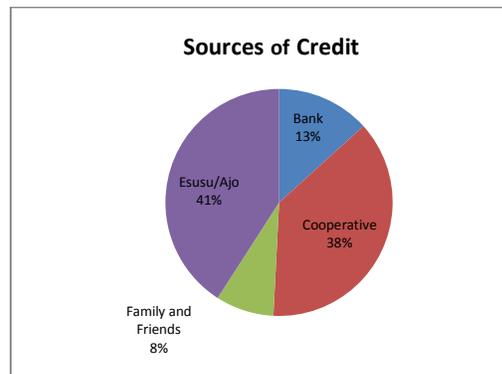


Fig. 1. Sources of agricultural credit
Source: Field Survey, 2017

3.3 Problems Encountered by the Marketers in the Sourcing for Credit

The results in Fig. 2 showed that, 56.7% of the respondents viewed the request for guarantor as the major constraint hindering access to credit then followed by proper record and documentation (33.3%), collateral (27.5%), capital investment of business (23.3%) and finally scale of production (19.2%). This implies that obtaining of loans is quite difficult mainly due to request of guarantor.

3.4 Factors Determining the Amount of Loan Collected by Marketers

Table 2 shows the factors determining the amount of loan been assessed by the food marketers. It reveals that the regressors accounted for 98% of the variation in the amount of loan accessed, while error term attributed to the remaining 2%. The result is significant at 1% as indicated by the F-value 0.00. The factors that

affect access to the loan are educational level (5% significant), cost of marketing operations (5% significant) and marketers' income (5% significant).

Educational level positively and significantly (5%) influenced the amount of credit accessed by the marketers. This is as a result that literacy boosts the understanding of the benefits and the lending pattern of the credit institutions by the marketers. This is in-line with the *a-prior* expectation and also with the finding of Etonihu et al. [5].

The cost of marketing operations is found to have negative influence on the amount of credit accessed by the marketers. The more the cost incurred in marketing the lesser the amount of loan that will be accessed by the marketers. This is because the excess spending may not lead to corresponding profit, thus making payback difficult.

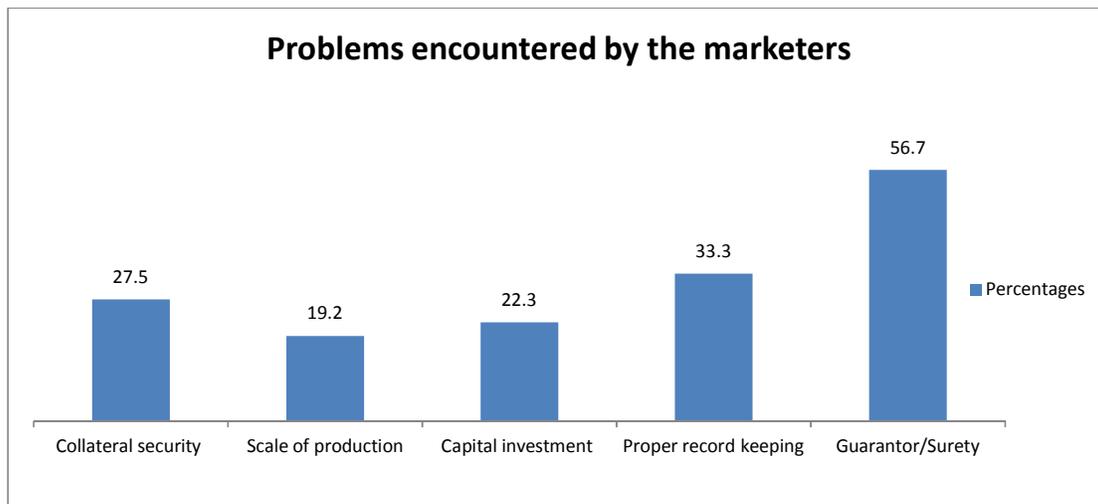


Fig. 2. Problems encountered by the marketers in the sourcing for credit

Source: Field Survey, 2017

Table 2. Semi-log regression table

Variables	Co-efficient (Standard Error)	p-value
Educational level	0.713** (0.353)	0.045
Cost of marketing operations (Naira)	-0.506** (-0.235)	0.031
Age in years	-0.189 (-0.521)	0.557
Sex	-0.096 (-0.126)	0.330
Marketers income (Naira)	0.863** (0.436)	0.048
Type of seller (wholesaler or retailer)	4.007 (0.544)	0.735
Household size	-0.829 (-0.924)	0.529

$R^2 = 0.981$, F- Value =0.000, ** 5% significant

Source: Field Survey, 2017

The income realized by the marketers is highly significant at 5%. The higher the income realized by the marketers the higher the loan amount requested by them. This is due to the fact that any amount will yield more than corresponding increase, thus making payback easy. This is consistent with the findings of Ololade R.A. and Olagunju [11].

4. CONCLUSION

The role of credit in an efficient and effective distribution of food to the ultimate consumers is very crucial. Findings showed that the respondents prefer informal sources of credit than the formal credit sources.

From the study, it was discovered that marketers borrow less than ₦ 50,000, which is low for the expansion of marketing operations in the study area. It was also discovered that marketers devoted their time, energy and resources to food crop marketing, which they have been engaged in for an average period of 14.3 years. Furthermore, it was discovered that the marketers do not market one type of food crops, but a combination of food crops, as this will help to increase their profit margin. From the regression analysis, the main determinants of the amount of loan collected by the marketers were education, cost of marketing operations and marketers' income.

5. RECOMMENDATIONS

The preceding analysis has brought some findings that have implications for this research work. Based on these findings, the following recommendations were made to tackle the difficulties of agricultural credit to food crop marketing:

1. The government should put in best policies that would help to lessen the marketing cost, especially transport.
2. Government should provide good roads in the rural areas.
3. Extension officers and research institutes should help in training marketers on the conditions and regulations governing the issues and use of credit.
4. Informal sources of credit should be empowered through government intervention.
5. Formal financial institutions should create marketers-friendly loan scheme.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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