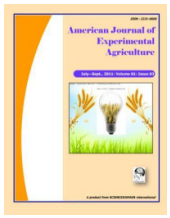

*American Journal of Experimental Agriculture*
*5(1): 36-43, 2015, Article no.AJEA.2015.005*
*ISSN: 2231-0606*

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# The Role of Informal Credit on Agriculture: An Assessment of Small Scale Maize Farmers Utilization of credit in Jema`a Local Government Area of Kaduna State, Nigeria

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***Authors' contribution***

*This work was carried out in collaboration between all authors. Authors HOY and PI prepared the questionnaire and collected the data for the research. They also wrote the first draft of the manuscript and managed the analyses of the data. Authors OY, HAY and HS managed the research design, literature searches, and report writing. All authors read and approved the final manuscript.*

***Article Information***

DOI: 10.9734/AJEA/2015/12099
Editor(s):
(1) Anonymous Editor.
Reviewers:
(1) Anonymous, Rajagiri Centre for Business Studies, India.
(2) Anonymous, Shenyang Agricultural University, China.
Peer review History: http://www.sciencedomain.org/review-history.php?iid=654&id=2&aid=6056

***Original Research Article***

***Received 18th June 2014***
***Accepted 28th June 2014***
***Published 11th September 2014***

## ABSTRACT

Carried out to Assess the roles of informal credit to small scale maize farmers in Jema`a Local Government Area of Kaduna State. The data were obtained primarily by administering questionnaires to 75 farmers that were purposively selected from 4 villages in Jema`a Local Government Area. Data were collected on socio-economic characteristics of maize farmers, cost and returns of maize production and constraints militating against informal credit acquisition. The study showed that maize production in the study area was profitable. It was recommended that Suitable mechanism should be explored to provide coordination of various informal credit sources existing in the study area in order to streamline their basic operation with a view to instituting common conditionality and guidelines for lending of credit to small scale farmers.

*Keywords: Role, informal credit; maize farmers; Kaduna state; Nigeria.*

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## 1. INTRODUCTION

Agriculture is important to the economy of most countries for its wellbeing and this demands an extra source of finance for the sector. In Nigeria, 70% of the total credits received by Nigerian farmers is non-institutional and takes an informal platform. Due to farmer's poor resource endowment, most farmers are unable to meet the stipulated criteria for formal credit. As a result, poor farmers are left with no option other than to source credit from informal sources. According to [1], agricultural credit is the present and temporary transfer of purchasing power from a person who owns it to a person who wants it. This allows the owner (informal credit source) the opportunity to command another person's capital for agricultural purposes and with willingness to repay (the borrower) at a specified future date. Agricultural credit is also the monetization of promises and exchanging of cash in the present for a promise to repay in future with or without interest [2]. Agricultural credit services are provided by both formal and informal institutions. The informal sector remains the leading provider of agricultural credit.

It has been recognized that the absence of adequate credit for financing small scale agriculture in Nigeria is one of the major impediments to the development of the sector [3]. The provision of credit is considered necessary for small scale agricultural production activities. It has been observed that a high percentage of small scale farmers depend wholly on informal credit largely due to the encumbrances involved in the procurement of formal or institutional credit. Therefore, owing to the fact that most small scale farmers in Nigeria depend on informal credit in difference to formal credit for agricultural production and economic sustenance of their households especially while the crop is on the field before harvest. This study takes a concise look into the various sources and credit utilization of informal credit among small scale maize farmers in the study area.

### 1.1 Objectives of the Study are to

i. Describe the socio economic characteristics of small scale maize farmers in the study area;
ii. Identify the various sources of informal credit to small scale maize farmers and the utilization of credit in the study area;
iii. Determine the profitability of maize production to maize farmers in the study area;
iv. Identify the various challenges experienced by the farmers in obtaining credit.

## 2. LITERATURE REVIEW

### 2.1 Agricultural Credit

The term credit, loan and borrowing are often assumed to refer to the process of obtaining control over the use of money, goods or services in the present time in exchange for a promise to repay at some future dates. [3] defined credit, as the means by which entrepreneurs are enabled to acquire commodities against a promise to repay later. They further argued that credit is predicated upon confidence in the sense that the request for a loan is usually met on the basis of a promise of repayment by the borrower at a stated time and under given condition of repayment.

### 2.2 Importance of Credit in Agriculture

The main barriers preventing the transformation of traditional agricultural technologies to move to an improved productive form is the inability of purchasing the necessary technology (ies). If funds are made available to facilitate the purchase of production inputs, productivity will be enhanced and hence income of small scale farmers will improve and journey towards improved agricultural production system will have begun [4]. According to [5], considerable amount of capital investment is required for the modernization of agriculture through the use of improved technologies in developing countries and rural areas. Credit enables farmers to advantageously use inputs and factors of production, by granting farmers more access to resources through the removal of financial constraints. The availability of credit is likely to increase the use of improved seeds and fertilizer leading to higher crop output. This may in turn encourage the adoption of labour-saving technology (ies), such as animal traction in crop production. Credits enable farmers to improve farming activities for profitability. The urge to improve profitability leads to the improvement of practical agricultural production techniques and the adoption of new technologies which makes agricultural production to be more efficient.

### 2.3 Methodology

#### 2.3.1 The study area

Kaduna state shares common borders with zamfara, kastina, Niger, kano, Bauchi and

Plateau state. The global location of the state is between longititude of 30" east of the Greenwich meridian and also between latitude 0900 and 11 30" north of the equator. The state occupies an area of approximately 48,473.2square kilometers and has a population of more than 6million [6].The research was conducted in Jema'a local government area of Kaduna state. It is situated in the southern part of the state bounded to the north by Zango- kataf local government area, The local government area has a land mass of 3,923km2 and lies between latitudes 9º00``-9º30"N and longitudes 8º00`` - 8º30"E [6]. The annual rainfall on the average is about 1,532mm. The temperature ranges between 20ºc and 30ºc. Soil of the area is predominately clay-loam and crops cultivated are maize, millet, sorghum, groundnut, ginger, yam, cocoyam, sweet potatoes, sugar cane, cassava and tomatoes. Apart from crop production farmers also engaged in keeping livestocks such as goats, sheep, cattle and poultry [6].

#### 2.3.2 Data collection and sampling technique

Primary data used in this study was collected through the use of structured questionnaire administered to the small scale farmers. A multi-stage sampling technique was adopted for this study, Jema`a LGA was purposively selected in the first stage. In the second stage, four wards were purposively selected based on the concentration of farming activities in the villages. The villages are: Ungwanfari, Kagoma, Godo-godo and Kafanchan. Random technique was employed to select a total of seventy five (75) respondents from the four (4) villages.

#### 2.3.3 Analytical technique

The analytical tools that were used in achieving the objectives of the study are descriptive statistics and farm budgeting.

*2.3.3.1 Descriptive statistics*

These are in form of frequency distribution and percentages. It was used to achieve objectives i, ii and iv.

*2.3.3.2 Gross margin*

Gross margin was used to evaluate the cost and return to obtain profit. It represents the difference between the value of output and total variable cost. It is simply calculated as the difference between the total revenue and the total variable cost which is expressed as follows:

Return to investment = GI/TVC

Where GM = GI – TVC
GM: Gross Margin; TVC: Total Variable Cost; GI: Gross Income;
This tool was used to achieve objective iii

## 3. RESULTS AND DISCUSSION

### 3.1 The General Characteristics of Small Scale Maize Farmer

The general characteristics of small scale farmers considered in the study area are age, sex, marital status, house hold size, educational qualification, size of farm land for maize production, farming experience and mode of land ownership.

The result of this study showed that, about 29.33% are between the ages of 31 – 40 and 38.67% are between 51 and above Table 1. Age is very important in agricultural production and livelihood activities. This implies that about three quarter of the respondents are young and middle aged which make them to be more flexible in their decision to obtain informal credit. [7] argued that age has a positive influence on the decision making process of farmers.

Findings of this study showed that Table 1 86.67% of the respondents were males. This implies high level of responsibility which could be the reason why small scale maize farmers use informal credit to improve and increase yield. This situation could be explained by the fact that in the study area, men were more engaged in farming activities than women. It was also observed in the study that 73.33% of the respondents are married. This implies high level of responsibilities to cater for their families, which could be the reason why the farmers opted to the use of informal credit which will help to increase their yield. The significance of marital status on agricultural production can be explained in terms of the supply of agricultural family labour. This is in line with the expectation that more farming activities will be carried out by people that have many dependents then those who have fewer dependents.

The household size was determined by the total number of wives, children and other dependents living with the respondents at the time of investigation. Distribution of the respondents by household size as shown in Table 1 indicates that, the respondents with 0 – 4 members constituted 21.33%, those with 10 – 14 members constituted 33.33%, and those with 15 – 19

members constituted 9.33%. This implies that respondents in the study area have access to family labour since in traditional society the primary source of labour is the family. The result of this study also conforms to [7], that the significance of household size in agriculture hinges on the fact that the availability of labour for farm production, the total area cultivated, the amount of farm produce retained for domestic consumption, and the marketable surplus are all determined by the size of the farm household.

Table 1 shows the distribution of respondents according to their level of formal education. 21.33% of the respondents had no formal education. Generally, almost all the respondents have one form of formal education or the other (78.67%). [8], in a similar study found that education had significant and positive relationship with household production. This indicates that households with relatively better educated household heads are more likely to produce more than those headed by uneducated household heads. A shift in educational level from illiterate to literate will therefore increase the probability of a household being productive.

Twelve percent (12%) of the respondent had farming experience of between 0-5 years, 22.67% had experience between 11-15 years and 36% of the respondent had experience of between 16years and above. This result indicates that majority of the farmers had a lot of experience in maize production and they are able to determine when, how to acquire and manage credit for their maize production. Farming experience is an important factor in determining both the productivity and the production level in farming. [7]observed that up to a certain number of years, farming experience would have a positive effect; after that, the effect may become negative. The negative effect may be derived from aging or reluctance in acquiring and managing of informal credit.

## 3.2 Land Ownership and Size of Farm Land Cultivated

Table 1 showed that 33.33% of the farmers inherited their farm land which means they did not spend much on land acquisition while about 40% rented the land. The amount used to acquire the farm lands in the study area ranged from ₦1000.00 to ₦9000.00. Hectare(s) of farm land owned by respondents is presented in Table 1.

**Table 1. Socio economic characteristics of the respondents**

| **Age** | **Frequency** | **Percentage (%)** |
|---|---|---|
| 20-30 | 9 | 12 |
| 31-40 | 22 | 29.33 |
| 41-50 | 15 | 20.00 |
| 51 and above | 29 | 38.67 |
| **Total** | **75** | **100** |
| **Sex** | **Frequency** | **Percentage (%)** |
| Male | 65 | 86.67 |
| Female | 10 | 13.33 |
| **Total** | **75** | **100** |
| **Marital status** | **Frequency** | **Percentage (%)** |
| Single | 3 | 4.00 |
| Married | 55 | 73.33 |
| Divorced | 8 | 10.67 |
| Widowed | 9 | 12.00 |
| **Total** | **75** | **100** |
| **Household size** | **Frequency** | **Percentage (%)** |
| 0-4 | 16 | 21.33 |
| 5-9 | 24 | 32.00 |
| 10-14 | 25 | 33.33 |
| 15-19 | 7 | 9.33 |
| 20 and above | 3 | 4.00 |
| **Total** | **75** | **100** |
| **Educational qualification** | **Frequency** | **Percentage (%)** |
| No formal | 16 | 21.33 |
| Primary | 24 | 32.00 |
| Secondary | 21 | 28.00 |
| Tertiary | 14 | 18.67 |
| **Total** | **75** | **100** |
| **Years of experience** | **Frequency** | **Percentage (%)** |
| 0-5 | 9 | 12.00 |
| 6-10 | 22 | 29.33 |
| 11-15 | 17 | 22.67 |
| 16 and above | 27 | 36.00 |
| **Total** | **75** | **100** |
| **Size of farm land** | **Frequency** | **Percentage (%)** |
| 0-1 | 18 | 24 |
| 1-2 | 29 | 38.67 |
| 2-3 | 28 | 37.33 |
| **Total** | **75** | **100** |
| **Land ownership** | **Frequency** | **Percentage (%)** |
| Inheritance | 25 | 33.33 |
| Rented | 30 | 40.00 |
| Purchase | 14 | 18.67 |
| Gift | 6 | 8.00 |
| **Total** | **75** | **100** |

The result also showed that 24% of respondents had 0-1 hectare, 38.67% had 1-2 hectares and 37.33% had 2-3 hectares. This indicates that majority of the respondents had less than or equal to 2 hectares. This is an indication of low economic status which leaves them with option of sourcing informal credit to help increase their yield. Maize production can be increased through expansion of area under cultivation. Therefore,

farm size is expected to play a significance role in influencing the rate at which informal credit is being sought for and used by small scale farmers for maize production.

## 3.3 The Various Sources of Credit

It was found in the study area, Table 2 that 28% of the respondent use money lenders as the source of their informal credit, 33.33% of the respondents use friends and relatives as their source of credit, 14.67% of the respondents acquire credit from traders in their area, 6.67% of the respondent acquire informal credit from shop keepers and 8% of the respondent acquire their informal credit from other sources such as pawn brokers, credit associations and self-help organizations, while 9.33% of the respondents did not use informal credit for their maize production. Thus, this study revealed friends and relatives to be the major source of informal credit in the area.

### 3.3.1 Utilization of informal credit by small scale maize farmers

Analysis of utilization of informal credit by farmers in the study revealed that, acquiring inputs for maize production was 26.67%, 20% of the respondents use informal credit for payment of labour services, 13.33% of the respondent used informal credit for household consumption, 13.33% of the respondent also used informal credit for payment of school fees, 12% of the respondent used the credit for health bills and 8% of the respondents use it for transportation of products. [9] stated that informal credit is demanded for both productive investment (agriculture production or business) and consumption. The infusion of credit to finance the purchase of inputs and other farm investments is the key requirement for modernizing and transforming agriculture to bring about increased production. Therefore access to credit has given maize farmers advantage to purchase input which shows that informal credit play an important role to small scale maize farmers productivity.

### 3.3.2 Sources of labour used for maize production

The distribution of the respondent according to labour sources is shown in Table 2. This study revealed that 13.33% of the farmers used family labour, 49.33% used hired labour, 14.67% used exchange labour and 22.67% of the farmers used both family and hired labour. Further analysis on hired labour shows that 40% of the hired labour used was animal labour while 29.33% of hired labour is human labour, and 2.67% of hired labour used comprises both animal and human labour. The amount paid for hiring labour ranges from ₦100 to ₦400 per day in the study area. The result show that more of the respondent used hired labour. This observation support [10], who also observed that small scale agriculture, is characterized by labour- intensive and small scale farmers lack the complementary inputs that will raise their labour productivity. Therefore, access to informal credit is necessary to enable the small scale maize farmers to use more hired labour.

**Table 2. Distribution of respondents according to sources of informal credit**

| Sources of informal credit | Frequency | Percentage |
|---|---|---|
| Money lender | 21 | 28.00 |
| Friends and relatives | 25 | 33.33 |
| Traders | 11 | 14.67 |
| Shop keeper | 5 | 6.67 |
| Others | 6 | 8.00 |
| Did not borrow | 7 | 9.33 |
| **Total** | **75** | **100. 00** |
| **Utilization of informal credit** | **Frequency** | **Percentage (%)** |
| Input acquisition | 32 | 42.67 |
| Household consumption | 10 | 13.33 |
| Payment of school fees | 10 | 13.33 |
| Health bills | 9 | 12.00 |
| Payment for labour | 15 | 20.00 |
| Transportation | 6 | 8.00 |
| **Total** | **75** | **100** |
| **Sources of labour** | **Frequency** | **Percentage (%)** |
| Family labour | 10 | 13.33 |
| Hired labour | 37 | 49.33 |
| Exchange labour | 11 | 14.27 |
| Family and hired labour | 17 | 22.67 |
| **Total** | **75** | **100** |

## 3.4 Costs and Returns of Maize Production

The profitability of any business can be deduced from the relationship between the cost incurred and the returns accruing from it. The cost and returns analysis of maize production as shown in Table 3 clearly shows that maize was profitable as indicated by the gross margin of ₦33424/ha, ₦33513/ha ₦27565/ha and ₦29885/ha forUngwanfari, Kagoma, Godo-godo, and Kafanchan respectively. The average yield per

hectare was 14 bags while the average price per bag (100kg) was ₦3000.00.

Return to investment for Ungwanfari is 1.043 implying that for every naira invested, a gain of ₦1.4k was made, for Kagoma was shown to be 1.115 implying that for every naira invested, a gain of ₦1.12k was made, for Godo-godo is .989 implying that for every naira invested a gain of 99 kobo was made while for kafanchan was shown to be 1.015 implying that for every naira invested a gain of ₦1.2 kobo was made. The result shows that the investment is profitable in the study area.

### 3.5 Challenges Experience by Farmers in Obtaining Informal Credit

Despite their popularity or potentials, most forms of informal credit are known to have limitations which cannot be ignored or overlooked. The problems enumerated by the farmers affecting the informal credit acquisition in the study areas are present in Table 4. About 9.33% of the respondents had non- formal education or have only primary education and this make them unable to read or write properly and this is a problem to them.

Twenty percent (26.66%) of the respondent had the problem of high interest rate. That is, the rate at which interest is charge by the informal credit lenders is high due to the fact that the lenders do not request for collateral from the small scale farmers before they lend the farmers. 54.67% of the respondent had problem of short repayment time. Most of the respondents complained of not being able to repay back the credit collected at the stipulated time. The farmers explained that, due to failure in crop yield or low market price of produce, the farmers are not able to realize enough money. 2.67% of the respondent had the problem of restriction on the use of the credit. The explanation given is that, the lenders gave the small scale farmers directives, and restrict them on how to use the credit or on what to use the credit for, while 6.67% of the respondents do not encounter problems in sourcing for credit, because they get their credit easily.

**Table 3. Average cost and returns analysis of maize production in Ungwanfari, Kagoma, Godo-godo, and Kafanchan**

| Items of costs and returns | Average value ₦/ha | | | |
|---|---|---|---|---|
| | **Ungwanfari** | **Kagoma** | **Godogodo** | **Kafanchan** |
| **Gross Income (GI)** | 65440 | 63560 | 55440 | 59317 |
| **Variable Inputs** | | | | |
| Seeds | 2070 | 1950 | 2070 | 2342 |
| Pre-planting Operations | 13067 | 12067 | 10357 | 11932 |
| Planting | 3680 | 4650 | 2977 | 4883 |
| Weeding | 4050 | 3200 | 3667 | 3054 |
| Fertilizer application | 6782 | 5880 | 6782 | 4246 |
| Harvesting | 2367 | 2300 | 2022 | 2975 |
| **Total Variable Cost (TVC)** | 32016 | 30047 | 27875 | 29432 |
| **Gross Margin (GI – TVC)** | 33424 | 33513 | 27565 | 29885 |
| **Return to Investment GI/TVC** | 1.043 | 1.115 | 0.989 | 1.015 |

*Return to Investment per naira = GI/TVC – 1.00;Return to Investment for Ungwanfari: 65440/32016 = 1.043; Return to Investment for Kagoma: 63560/30047= 1.115; Return to Investment for is Godo-godo: 55440/27875= 0.989; Return to Investment for is Kafanchan: 59317/29432 = 1.015*

**Table 4. Distribution of respondents according problems face in informal credit acquisition**

| Problems in acquiring Informal credit | Frequency | Percentages (%) |
|---|---|---|
| Education | 7 | 9.33 |
| high interest rate | 20 | 20.66 |
| short repayment time | 41 | 54.67 |
| restriction on use of credit | 2 | 2.67 |
| Not aware of any | 5 | 6.67 |
| **Total** | **75** | **100** |

## 4. RECOMMENDATIONS AND CONCLUSION

Agricultural credit has for long been recognized as a strong mover in agricultural transformation and economic development. Based on the findings of this study the following recommendations were made:

(1) Suitable mechanism should be explored to provide coordination of various informal credit sources existing in the study area in order to streamline their basic operation with a view to instituting common conditionality and guidelines for lending of credit to small scale farmers.

(2) It is important that farmers be educated on the necessity of saving and building up their financial reserves to strengthen their self- financial capabilities so that informal credit become merely complementary for financing to increased working capital and new investment.

(3) For informal credit to be meaningful it has to be available in reasonable amounts and the interest rate should be reduced. Minimum advance should be such that the average farmer will be able to use it reasonably on some input.

(4) Repayment period should be long enough to allow farmers adequate time to sell their products at favourable prices and they should allow using the credit other things that is there should not be restriction in the use of credit.

In conclusion, the informal credit constituted the major avenue for farmers in the study area to be able to develop their farm and consequently themselves. Given the reasons for farmers preference for informal credit and also acting based on the recommendations above, farmers not only in Jema`a Local Government Area, will be able to contribute their quota to the realization of government vision of the national food security in the country.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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*The peer review history for this paper can be accessed here:*
*http://www.sciencedomain.org/review-history.php?iid=654&id=2&aid=6056*