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**ACCESSIBILITY OF FORMAL SOURCE OF CREDIT BY RURAL WOMEN AND THE  
IMPLICATION ON NIGERIA AGRICULTURAL OUTPUT: CASE STUDY OF JEMA'A  
AND KAURA LOCAL GOVERNMENT AREA OF KADUNA STATE**

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**ABSTRACT**

The rural women who constitute the bulk of the agricultural population in Kaduna State are poor and the only alternative for raising capital has continued to elude them. Low investments in agriculture have been traced largely to banks unwillingness to make credit available to women farmers who are perceived by banks as high- risk investors. This problem of inadequate finance has made them to produce at subsistence level. Therefore this study investigated rural access to credit and also the impact on agricultural output in Kaduna State. Primary data were collected through the use of structured questionnaire and Focus Group Discussion (FGD). Two Local Government Areas (LGAs) were selected. They are Jema'a and kaura Local Government Areas of Kaduna state. The selection was based on women involvement in agricultural activities. A multi-stage random sampling technique-was applied in the selection of eighty (80) women farmers. Each Local Government Areas had (40) respondents. The analytical tools used include among others frequencies, means and percentages. The chi-square was also used to test the null hypothesis that there was no significant relationship between amount accessed from formal source and output. It was discovered that 17% of these rural women sourced credit from formal sources like commercial banks, agricultural banks) and 83% of them got theirs from informal sources like friends, relatives, NGOs and personal saving. Women in the study area generally encountered problems in accessing the two sources of credit. The women in the study area encountered problem like inaccessibility of credit institution, lack of collateral security, administrative bureaucracy in accessing formal sources of credit. Therefore, establishment of banks in the rural areas, minimization of procedure in getting loans and implementing programmes that will facilitate women access to credit facilities were solutions preferred to improve women access to credit and increased agricultural output in Nigeria.

**Keywords:** *Accelerator, Adashe, Chi-Square*

**INTRODUCTION**

Research has shown that food and cash crop production in Nigeria has for a long time depended largely on the output of small-scale farmers who are mostly rural women .Rural women are known to produce up to 60% of food consumed and have been described as the backbone of subsistence agricultural in Nigeria (Osuala, 1991). Again, according to (Adawo and Umobang 2003), almost all active women in rural areas engage in agriculture. Most rural women in Kaduna State particularly, the Southern part engages in agricultural production. Jema'a and Kaura Local Government Areas are found in the southern part of Kaduna State. Rural women in Jema'a and Kaura Local Government Areas work under very difficult conditions, they use traditional tools and techniques. These tools are not efficient enough to

generate the required output. They also do other tedious farm work like marketing and processing of the product. Their land ownership pattern is governed by a communal land tenure system of small fragmented holdings. The production input of these farmers consisted mainly of land and family labour. Capital investment is generally small and inputs such as fertilizers and chemicals are rarely used. The level of production technology is low. In addition, opportunities and access to information was limited. They lack collateral security for bank loan and hence, depend heavily on little income they get from farming and other informal sources. Low investment in agriculture has been traced largely to banks unwillingness to make credit available to women farmers who are perceived by banks as high-risk investors. Even where credit is available high lending interest rates is believed to make bank credit unattractive. Given the setting and the importance of farming in State, the State Government over the years adopted several strategies in order to boost food production and obtain raw materials for the agro-allied industries. The very important way of doing this is the adoption of new and appropriate technology for the women activities. Since the average rural women is poor and cannot acquire this costly technology, her output is generally small. In order to expand productivity and to improve the living conditions of women in these two Local Government Areas of Kaduna State, it is important to devise ways of making bank credit available to them. Therefore, this study intends to investigate whether rural women are accessing formal agricultural credit and also examine the impact of credit on their output level. This is with particular reference to women in Jema'a and Kaura local government areas of Kaduna State. Structurally after the introduction, section II is the theoretical framework followed by the literature review. The next is the methodology and field result in section IV. Conclusion is in the last section.

## **THEORETICAL FRAMEWORK**

The theory that relates to this study is the Accelerator theory of investment. The acceleration principle was first introduced in economics by Hicks Samuelson and Brooman. The principle is based on the fact that, the desired stock of capital is proportional to output after allowing for variation in capacity utilization. This means that the level of investment planned is related to the size of the change in income (output) rather than to the level of output. The acceleration principle produces a coefficient which is a ratio between induced investment and changes in consumption expenditure Stated formally, the acceleration principle is  $I_t = a ( Y_{t-1} - Y_{t-2} )$  Where the t indicate time period,  $Y_{t-1}$  = output of current period,  $Y_{t-2}$  = output of previous period and a is the accelerator. The ratio of investment to change to output is assumed to be constant and greater than zero. The assumption that a is constant implies a fixed capital/output ratio, and if  $a > 1$  then in fluctuations in investment, the demand for capital goods will be greater than variations in output. Rural women in Jema'a and kaura Local Government Areas of Kaduna State have problem with accessing credit. This has affected their agricultural output. Credit is used to finance agricultural output which in turn increases agricultural output. If agricultural output of Kaduna State must increase significantly, capital investment must be considered. This is possible if formal source of credit is made available to rural women farmers.

### **A Review of Role of Women in Agriculture**

Generally, the work of women includes child bearing, household management (working, washing etc), in addition to some aspects of agriculture (production, processing, marketing etc). Their specific task varies depending on the culture. Many literatures have testified that women play important roles in the food production. According to Howard (1988), women working on small farms are believed to produce about 90% of the food consumed locally. In Nigeria most researchers maintained that 50 -60 percent of agricultural labour force came from women. This studies carried out in different parts of Nigeria revealed that almost all agriculture production and marketing activities, including animal husbandry are performed by women (Gidarakau, 1999). Furthermore, it is widely agreed that even Muslim who practice purdah are intensely involved in farming activities from the seduction of their compound walls (Maigida, 1992). In Bauchi, Benue, Plateau and some parts of Kaduna State, women that are farmers are responsible for cultivation of food crops or even cash crops for their families. It is therefore, indisputable that women participate in almost all facets of farm activities alongside with men (Howard 1988), only their efforts have not been recognized and it has been an unequal basis. Even the United Nation and other development agencies have emphasized the importance of African women in the development of the continent. African women form an indispensable part of human resources for development. Without their contribution, the economies of Africa countries cannot function effectively even at their present low levels (ECA, 1980). Rural women who produce at least 50% percent of the food have until recently received no agricultural training of any kind, even when attempts have been made to increase productivity in the subsistence sector. Sex stereotyping has led to low productivity, because outside planners have consistently ignored women critical role in agriculture (Adawo and Umobong, 2003). A typical rural woman in Nigeria work in fields, she begins her day by five in the morning and end at between eight and ten in the evening without break (Osuntogun, 1980). As a result of this, the integration of women into development machinery becomes crucial.

### **Women's Access to Credit**

Women rely on income to maintain their families. Most of them are poor lack modern education and have few skills (United Nations, 1992). Manuel (2007) describes rural women as the poorest, most marginalized members of the global village. One major way of improving income is largely in accessible to them. Women's lack of access to credit influences their ability to assure household food security (Nzioki 2003). Credit enables them buy household goods and provide them with start-up capital for micro-enterprises or agricultural purchase. Rural women need 'small' loans that can be paid back in small installments from formal credit institutions forcing women to use informal credit resources (Huppi and Braver 1991). The common in formal credit the rural women patronize is the money lenders who provide credit with excessively high interest leading many women to perpetual indebtedness. Women in many developing countries have little or no access to credits. Ishengoma (2004) confirmed the fact that women have limited access to credit. Consequently, many of them sought alternative means like sale of farm products, paid labour in other people's farm enterprises (Ezumah and Didemenice C. 1995). Therefore, rural women are looking for

opportunities to increase their incomes. Most of which they spend on basic family needs. Women's access and control over resources will affect the extent and mode of performance in carrying out their responsibilities (Ogungbile et al 1991).

## **METHODOLOGY**

### **Source of Data**

The data for this study was primarily sourced. The primary data was collected through administration of structured questionnaire and interviewing method, a Focus Group Discussion was also conducted in regard to the study. Also, information was obtained through persona. Contacts with the ADP (Agricultural Development Project) field enumerators.

### **Sampling Procedure**

The sampling frame for the study consists of only female farmers who engaged in different types of agricultural activities like poultry, fishery, crop production etc. The 2006 census result shows that the two local government areas had an estimated total population of about two hundred and forty thousand (240,000) women. Out of this total, about one hundred and eighty thousand (180,000) were actively in farming. Therefore, to select the sample for this study the two local government areas were divided into districts. These districts were made up of villages. Jema'a is made up of eight (8) districts and one hundred and sixty seven (167) villages. Again, ten (10) farming households were selected from each village by simple random sampling method from each household only female farmers were identified when administering the questionnaire. This gave a total of eighty (80) sample size. It implies that multi-stage random sampling technique was applied in this study.

## **ANALYTICAL TECHNIQUES**

Various statistical methods were adopted for this study. They include descriptive statistical tools, and the chi-square test

### **Field Result**

It is evident that rural women find it difficult to access agricultural credit. This problem could have a spillover effect on their agricultural output. A field work was conducted to verify this fact. The results revealed the following

**Table 4.1 Agricultural Credit from Formal and Informal Sources**

Sources	Types	Jema'a Freq (%)	Kaura Freq. (%)	Total Freq. (%)
Formal	Comm./Agric bank	8 (20)	9 (22.5)	17 (19)
Informal	Friends	4 (10)	2 (5)	6 (7.5)
	Relative	8 (20)	7 (17.5)	15 (21)
	Personal Saving (Adashe)	12 (30)	10 (25)	22 (28)
	NGOs	8 (20)	12 (30)	20 (25)
<b>TOTAL</b>		<b>40 (100)</b>	<b>40 (100)</b>	<b>80 (100)</b>

**Source:** Field survey 2010.

Various sources of credit were identified in table 4.1 formal source were obtained from commercial and agricultural banks, while the informal sources includes personal savings (adashe), friends, relatives and non-governmental organization (NGOs) like fanstwan foundation and pathfinder. Majority of the women in the study area obtained their agricultural finance from the informal sources.

Distribution of Respondent by Problems Faced in Obtaining Credit From Formal source ( Banks)

Problem encountered	Jema'a	Kaura	Total
	Freq.	Freq.	Freq (%)
Inaccessibility to credit institution	18	22	40 (50)
Lack of collateral security	18	14	32 (40)
Untimely Disbursement	11	9	20 (25)
Administrative/Bureaucratic procedure	16	24	40 (50)
Illiteracy	10	8	18 (23)
Interest Rate	9	11	20 (25)
Insufficient amount			

**Source:** field survey 2010

Table 4.2 shows that 50% of the respondent experienced difficulty in getting formal loans. This was due to the fact that credit institutions were inaccessible and there were also long administrative procedures. Again, 40% of these women lacked collateral security for bank loans. The least problem encountered is insufficient amount. This means that, the women had some challenges in accessing credit from the formal source (banks). Again, banks have the capacity of providing sufficient amount of credit to its creditors.

Distribution of Respondents According to problems encountered in obtaining credit from informal sources.

Problems encountered	Jema'a	Kaura	Total
	Freq.	Freq.	Freq. (%)
Interest rate	14	18	32 (40)
Delay in getting guarantor	10	10	20 (25)
Insufficient amount	22	18	40 (50)

**Source:** Field Survey, 2010

Table 4.3 shows that these rural women did not access sufficient amount from the informal sources of credit. This is contrary to that of the informal sources. Since these women accessed more of informal source of credit, it implies their agricultural practice suffered setbacks because of insufficient amount. It is therefore important to improve the access of formal credit in order to increase the agricultural production of rural women.

**Table 4.4** Amount Accessed and Increased Output Crosses Tabulation.

Amount accessed (₦)	Yes (%)	No (%)	Total (%)
10,000 – 50,000	39 (61)	25 (39)	64 (80)
51,000 – 100,000	4 (100)	0 (0)	4 (5)
101,000 – 150,000	11 (100)	0 (0)	11 (14)
201,000 – 250,000	15 (100)	0 (0)	1 (1)
Total	55	25	80 (100)

Source: Field Survey 2010

According to the above table, output of some recipients of 10,000 to 50,000 naira did not increase significantly compare with other higher amount. Those who received higher amount experienced 100% increase in output that is, from 51,000 naira and above. None of them chose "No" response.

## DATA ANALYSIS

### Use of the Chi-Square

Chi-square data analysis was employed to test the relationship between access of formal credit and agricultural output. The test was based on both null alternative hypotheses.

$H_0$  = There is no significant relationship between access to bank credit and increase in agricultural output.

$H_1$  = There is significant relationship between access to bank credit and increase in agricultural Output

The chi-square test the hypothesis at 95% confidence interval. The formula to be used is

$$X^2 = \frac{N(A_1 B_2 - A_2 B_1)^2}{N_1 N_2 N_A N_B}$$

This can be proved using the observed frequency table.

### Observed frequency

Group	Yes	No	Total
A	$A_1$	$A_2$	$N_A$
B	$B_1$	$B_2$	$N_B$
Total	$N_1$	$N_2$	$N$

**Expected Frequency**

The expected frequency is obtained from observed frequency using,

Group	Yes	No	Total
A	$A_1 = \frac{N_1 N_A}{N}$	$A_2 = \frac{N_2 N_A}{N}$	$N_A$
B	$B_1 = \frac{N_1 N_B}{N}$	$B_2 = \frac{N_2 N_B}{N}$	$N_3$
Total	$N_1$	$N_2$	$N$

**Table 4.5** Access to Credit Vs Increase Level of Output

Response	Yes		No		Total
	$O_{ij}$	$E_{ij}$	$O_{ij}$	$E_{ij}$	
Yes	20	15.2	18	22.8	38
No	12	16.8	30	25.2	42
Total	32	32	48	48	80

Source: Field Survey.

Therefore to calculate the expected frequency we use

$$A_1 = \frac{N_1 N_A}{N} = \frac{32(38)}{80} = 15.2$$

$$B_1 = \frac{N_1 N_B}{N} = \frac{32(42)}{80} = 16.8$$

$$A_2 = \frac{N_2 N_A}{N} = \frac{48(38)}{80} = 22.8$$

$$B_2 = \frac{N_2 N_B}{N} = \frac{48(42)}{80} = 25.2$$

Using the formula,

$$X_c^2 = \frac{\sum (O_{ij} - E_{ij})^2}{E_{ij}}$$

$$X_c^2 = \frac{(20-15.2)^2}{15.2} + \frac{(12-16.8)^2}{16.8} + \frac{(18-22.8)^2}{22.8} + \frac{(30-25.2)^2}{25.2}$$

$$X_c^2 = 1.5 + 1.4 + 1.0 + 0.9$$

$$X_c^2 = 4.8$$

The degree of freedom (V) for this 2X2 contingency table is

$$V = (R-1) (C-1)$$

$$V = (2-1) (2-1)$$

$$V = 1$$

Using the Chi-Square distribution table.

$$V = 1 \quad X_t^2_{0.95} = 3.84 \text{ (critical value 5\% level of significance)}$$

$$X_c^2 > 1 X_t^2_{0.95}$$

The table above depicts the relationship between access to credit and increase level of output. Therefore, since the chi-square test shows that  $X_c^2 4.8 > X_{t 0.95}^2 3.84$  it confirms the finding that bank credit increase agricultural output. We accept the alternative hypothesis that credit has a significant relationship with increase in agricultural output.

## **DISCUSSION OF FINDINGS**

In this study, it was discovered that credit is important in agricultural production. It boosts agricultural production. The chi square result confirmed the relationship between amount accessed from formal source and output. The more one is able to access bank credit, the more output an individual would make and vice versa. The null hypothesis that there is no significant relationship between access to bank credit and output is rejected. However, the alternative is accepted. The study also noted that the rural women did not easily access formal credit. It is this formal source of credit that provided sufficient amount needed for increased agricultural output. Factors like in accessibility of financial institution, long administrative procedures affected access to credit from banks. Some places in the study area did not even have banks. Even when banks or formal sources of credit exist, the rural women experience difficulty in accessing such funds. Nevertheless, the banks provided sufficient amount needed for agricultural production.

## **CONCLUSION AND RECOMMENDATION**

### **CONCLUSION**

The major source of credit available to the rural women in the study area is from the informal source of credit. Obtaining loan from the banks (formal) was more difficult than the informal source. This is because the informal sources had fewer problems than formal sources of finance. It was also discovered that access to credit boosted agricultural production. The current food policy in Nigeria is production and improvement in the level of economic and technical efficient. Modern technologies have been introduced for more efficient utilization of farm resources and reduction in risks usually associated with farming. However, there cannot be significant improvement in inputs and output without adequate credit to farmers.

### **RECOMMENDATIONS**

Based on the findings of this study the following recommendation is put forward.

- Zonal branches of banks (formal sources) should be established in villages so as to increase rural women access to bank credit. Proximity of banks is very essential because it reduces the cost of accessing credit and will also encourage interest individuals.
- The procedure of obtaining loan from banks should be minimized. This will in turn reduce transactional cost of borrowing.
- Agricultural development programme should facilitate women access to credit. The rural women should be given priority in disbursement of agricultural loan. This is because the study found out that their access to credit can improve agricultural output.



- The government should provide financial support for the informal sector of the study areas.

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