Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development
Vol. 18, Issue 3, 2018
PRINT ISSN 284-7995, E-ISSN 2285-3952

ENHANCING FOOD CROP PRODUCTION THROUGH ROTATORY CREDIT SAVINGS AMONG SMALL HOLDER FOOD CROP FARMERS IN DEMSA LOCAL GOVERNMENT AREA OF ADAMAWA STATE, NIGERIA

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Abstract

Enhancing Food Crop Production through Rotatory Credit Savings among Small holder Food Crop Farmers in Demsa Local Government Area of Adamawa State, Nigeria was the focus of this research. A random sample of 120 respondents were collected and data subjected to descriptive and inferential statistics. Findings revealed that 81.67% of the respondents fall within the age range of 25 to 49 years with mean age of 35 years, males dominated the association (66.67%), 70.83 % were married with mean annual saving of N31, 345.50. Regression analysis revealed that about 71.21 % of the differences in the savings of respondents were explained by the variables included in the model (R^2=0.7121). Age, education, income and farm size were the determinants of savings among respondents.

Key words**:** *rotatory savings, formal credit, financing, small scale, regression*

INTRODUCTION

The rural sector, with the abundance of human and natural resources, has remained the treasury base of Nigeria because of substantial contribution to gross domestic product (GDP) by its major activity, agriculture [6] yet, it receives a share of less than 5 percent of the total banks' credit to the private sector annually. Programmes and schemes were also established to address the issue of provision of rural finance. Amongst the policies employed to make credit available by formal financial institutions to the rural and micro entrepreneurs were the sectoral allocation of credit and concessionary interest rate. Succesive government efforts towards financing agriculture were through agencies like the Nigerian agricultural and co-operatives bank (NACB), the peoples bank of Nigeria (PNB), the rural banking scheme (RBS) and family economic advancement programme (FEAP). Subsequently, in 2010, bank of agriculture limited (BOA) was established [7].

Agricultural credit is used to finance agricultural transaction. Various types of financing could be adapted by farmers according to their needs and purpose of production. Agricultural credit are classified into short, medium and long term [2, 5].

Previous studies indicate that paucity of credit had stiffled agricultural development in Nigeria [9]. Yustus *et al.* (2010) [10] reported that most agricultural innovations were not developed on farmers' fields and needed to be purchased. Farmers require capital or financial resources to purchase inputs and impose the need for credit to enable them adopt these innovations. Asset endowments of farmers are one of the variable factors associated with the adoption and continued use of improved technologies. With more income, farmers are likely to expand their scope of production and employ labour and other saving technologies. The study was conducted on enhancing food

crop production through rotatory credit savings among small holder food crop farmers in Demsa Local Government Area of Adamawa state, Nigeria. The specific objectives were to identify and describe the socio-economic characteristics of the respondents and to identify factors influencing rotatory savings among respondents [8].

MATERIALS AND METHODS

The Study Area

The study was conducted in Demsa Local Government Areas of Adamawa State. Mayah District was purposively selected based on large number of small scale farmers involvement in rotatory credit savings popularly referred to as local bank for the poor (*Bankin Talaka*). A total of five villages namely Tagombali, Bali, Kpasham, Dakli and Kpankwai were purposively selected. List of rotatory credit contributory groups were obtained out of which 130 members were selected in proportion to their population and served with structured questionnaires, 120 questionnaires were correctly filled, returned and were used for analysis.

Methods of Data Analysis

Data collected were subjected to descriptive and inferential statistics. Exponential function gave the best fit and is explicitly stated as:

$$LnY = \beta_o + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5$$

where:
Y = Amount saved (naira),X_1 = Age of farmers (years) X_2 = Farm size (hectare),
X_3 = Income (₦),
X_4 = Education (years spent in school)
X_5 = Membership of cooperative society (1 if member, 0 not a member).

RESULTS AND DISCUSSION

Socio- economic Characteristics of the Respondents

Table 1 shows the socio-economic distribution of respondents and revealed that 81.67% of the respondents were within the age range of 25 to 49 years with a mean age of 35 years. This shows that the farmers are relatively young. The preponderance of young farmers engaging in rotatory credit savings association portends positive signal as their productivity are likely to be higher resulting to increased production. Males dominated the association (66.67%). This result is a further confirmation of empirical evidences that men are more favoured than the women in agricultural production (Adebayo *et al.,* 2010) [1]. Marital status distribution of the respondents indicated that 70.83 % were married. The above result shows that married people are more into rotatory savings than those who are single. Family sizes of farmers provide sources of labour for production especially in African agriculture where production is not mechanized. Analysis in Table 1 revealed that 58.33 % of the respondents had between 1 and 6 family members with a mean family size of 5 people. Large family size of respondents could be used as a vital source of labour for food crop production and other productive activities, but can put pressures on family heads in devising means of obtaining income to meet family needs.

Also, all the respondents (100%) were educated and had one form of formal education or the other. Ogundari and Ojo (2007) [7] reported that education provided a measure of managerial ability of the farmers through which the Nigerian agricultural productivity could experience a push into new direction of growth and development. Of course such reposition depends on the right policy measure that addresses human capital development of the farmers which can be achieved through education. Respondents' farm size showed that 63 % had farm size between 1.5 to 1.99 hectares while about 37 % had 2 and above hectares of farm land. The mean farm size was 1.15 hectares. This implies that farmers operated at different levels of farm sizes which tend to affect their production levels. This result indicates that majority of the farmers are small holders. The result is line with several studies conducted which showed that small scale farmers produced the bulk of food and cash crops in Nigeria [3]. Adebayo *et al.* (2010) found that access to productive resources especially land

served as a source of collateral security in the acquisition of credit for farmers in Africa [1]. Distribution of respondents based on occupation indicated 78% had farming as their major occupation.

Table 1. Socio- economic Distribution of Respondents (N= 120)

Variable	Frequency	Percentage
Age Range (years)		
≤ 25	10	8.33
25 – 39	38	31.67
40 – 49	60	50.00
50 – 59	10	8.33
> 60	2	1.67
Sex		
Male	80	66.67
Female	40	33.33
Marital status		
Married	85	70.83
Single	35	29.17
Family size		
1-6	70	58.33
7- 10	35	29.17
> 11	15	12.50
Education		
Primary School	30	25.00
WASCE/ GCE	80	66.67
OND	10	8.33
Farm size		
≤ 1.5	40	33.33
1.6 – 1.99	35	29.17
2.0 –2.99	23	19.17
3.0 – 3.99	8	6.67
> 4.00	14	11.67
Occupation		
Farming	93	77.50
Trading	13	10.83
Civil service	6	5.00
Technician/ Artisan	8	6.67

Source: Field survey, 2015.

Respondents' Savings and Purpose of Savings

Table 2 shows the annual savings of the respondents.

Mean annual saving was N31, 345.50.

Those that saved below N 20, 000.00 were 8.33% , 46.67% were from N 21,000.00 to N 30,000.00, followed by 22.50% and had savings between 41,000.00 and 50,000.00.

Furthermore, analysis in Table 3 showed that majority of respondents saved for agricultural purpose followed by petty trading in the study area.

Table 2. Distribution of Respondents based on Annual savings

Range of amount saved (Naira)	Frequency	Percentage
≤ 20,000.00	10	8.33
21, 000 .00 - 30, 000.00	56	46.67
31, 000.00 - 40, 000.00	27	22.50
41, 000.00 - 50, 000.00	15	12.50
51, 000.00 - 60, 000.00	8	6.67
61, 000.00 - 70, 000.00	3	2.50
>70, 000.00	1	0.83
Total	120	100.0

Source: Field survey, 2015.

Table 3. Utilization of Annual savings from local banks

Type of activity	Frequency	Percentage
Farming	90	75.00
Petty Trading	12	10.00
Others	8	6.67
Total	120	100.0

Source: Field survey, 2015.

Determinants of Savings

The determinants of savings among respondents were evaluated using production function analysis. Exponential function gave the best fit and the result is presented in Table 4.

The coefficient of multiple determination (R^2) was 0.7121 implying that about 71.21 % in the differences in the savings of respondents were explained by the variables included in the model.

The F. value was statistically significant at 1% signifying model fit. The coefficient for age was statistically significant ($p>0.01$). This implies that age is positive and influences savings among respondents. Farm size was statistically significant ($p>0.01$) and positively related with rotatory savings. Farm size has been found to be one of the most important factors of production and critical in the adoption of innovations in agriculture [4].

The coefficient for education was statistically significant at one percent. Educated farmers are innovative and the transformation processes by extension agents are likely to be easier. Education obviously will improve production efficiency as it will enable farmers to access improved technology and best practices available to them. The estimated coefficient for income was statistically significant ($p>0.05$).

Table 4. Result of multiple regression on the determinants of savings among Food crop Farmers

Variable	Coefficient	Std. Error	t-Statistic
X_1 Age	0.0004906	0.0001447	3.39***
X_2 Farm size (hectare)	0. 005369	0.0011647	4.61***
X_3 Income (₦)	0.0007863	0.0002862	2.75**
X_4 Education (years spent in school)	0.0729896	0.01087	6.71***
X_5 Membership of cooperative	6.54e-08	3.33e-07	0.20
C	3.127112	0.0621198	50.340***

Source: Field survey 2015 R- square 0.7326 Adjusted R-square 0.7121 F. value = 25.98***
S.E. of regression 0. 10027 ***, ** indicate significance at 1% &5% probability levels.

CONCLUSIONS

Males dominated rotatory credit savings, who are, experienced and are mostly smallholder farmers with a mean farm size of 1.15 hectares. Education, age, farm size and income were the determinants of savings among respondents. Government should encourage rural banking to enhance farmers access to formal credit to enhance food crop production.

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