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Socio-Economics and Saving Patterns of Cooperative Farmers in South-Western Nigeria

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Abstract: Nigerian farmers are faced with numerous problems that hinder them from attaining their full potential in food production. They operate small and fragmented farm land using crude implements and methods of production. They have to contend with high input price, low mechanization, high transportation cost, infertile land, pest and diseases, inadequate fund, unstable policies and general poverty. Determined to help themselves, the farmers have resulted to formation of farmers' cooperative societies. One of the economic obligations of members of the society is saving. The savings are given as loan to needy members who are expected to pay back within specified period of time. This study examined the determinant of saving among cooperative farmers in Ondo state, south-western Nigeria. One-hundred and fifty cooperative farmers were selected from fifteen cooperative societies across 2 local government areas of the state in 2004. Data were collected using structured questionnaires. Data were analyzed using descriptive statistics and multiple regression technique. Results showed that cooperative farmers in the area are of average age of 48.6 years and have an average of 5 persons in the household. The average farm size was 1.04 ha and about 80% have less than 3 ha of farm land. The average monthly income was N11,684 while the average monthly saving was N736.2. The average loan collected was N9,420 and 82.8% of the cooperative farmers received loan during the last one year. Household size, year of cooperative membership, interest rate on loan, gender and amount of money borrowed were significant variables that determined the amount of saving by cooperative farmers. The saving level of the cooperative farmers can be increased if loans are adequately made available and proper monitoring of funds for specific production purposes are put in place. A flexible loan repayment policy would also encourage farmers to save more.

Key words: Cooperatives, cooperative farmer, saving, socio-economic, South-Western Nigeria

INTRODUCTION

In Nigeria, agriculture has remained the largest sector of the economy. It generates employment for about 70% of the population and contributes about 40% to the Gross Domestic Product (GDP) with crop accounting for 80%, livestock 13%, forestry 3% and fishery 4%. Agriculture accounts for over 70% of the non-oil export and provides over 80% of the food needs of the country (Adegboye, 2004). Nigeria has a total land area of 98.3 million hectares, but at present about 34 million hectares or 48% are under cultivation. Agriculture is practiced at subsistence level in Nigeria. This is characterized by numerous farmers operating several scattered small and fragmented plots of land using traditional methods like land rotation and bush burning and crude implements like hoes and cutlasses. Most farmers have limited resources, a factor that limits their productivity, investment, savings and income. In the midst of these, farmers have resulted to a number of options to enhance their farm production and improve their well-being. One of these options includes pooling their resources and working together as a member of cooperative society.

Cooperative is a voluntary association of people with common goals who have come together to do business for the good of all the members (Ihimodu, 1988). Although cooperation-where people working together for mutual benefits has been practiced since man existence, the cooperative as a form of business organization began during the era of industrial revolution (Adetunji, 2002). Cooperative societies were believed to have originated from Europe before they spread to other part of the world.

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Modern day cooperative societies are often traced to the Rochdale Equitable Society of 1844 in England (Ihimodu, 1988). The present day cooperatives in Nigeria derived their origin from the traditional informal financial organization variously refered to as ''adashi'' or ''esusu'' in the local language. The ''adashi'' or ''esusu'' is a widespread indigenous system of thrift and credit which seems to be well-managed and successful (Seibel, 2004). In 1934 however, C.F Strickland, a british cooperative expert, examined the ''adashi'' and ''esusu'' systems as a possible basis for introducing modern day cooperative societies in Nigeria (Strickland, 1934). Following the recommendations of Strickland, the Cooperative Societies ordinance was introduced in 1935 and modeled after the British-Indian cooperatives as the blueprint for the British colonies in Africa (Siebel, 2004). In the following 2 decades-1936-1956, formal cooperative societies have spread from the western to the eastern and northern regions of Nigeria (Ihimodu, 1988).

Farmers cooperatives are association of farmers who voluntarily come together to achieve a common goal through a democratically controlled business organization. Members contribute equitably to the capital and personnel requirement of their cooperative and accept a fair share of the risks and benefits of their undertakings (Ukaga, 1992). Nweke (1979) noted that various problems of Nigerian small farmers like land, labour and capital problems were solved generally through cooperatives efforts. Usually, the cooperative goals are economic in nature but may also be educational and social. Adeyemo (1994) reported that members of cooperative societies performed better in terms of gross margin than individual farmers who were non-members. This according to Adeyemo (1994) had been due largely to the involvement of the government through the provision of financial and technical assistance to cooperative farmers. Most farmers join cooperative societies to be able to obtain needed inputs like credit, while loan assurance made women cooperators to patronize their organization.

The most important economic obligation of members of a farmer cooperative society is saving. Farmers are expected to save a specify amount of money either daily, weekly, monthly or quarterly as it is convenient for the group and the individuals. The saving is important for agricultural production of the cooperative farmers because it is used as credit for lending to needy members and the principal and interest are calculated to be repaid back either installmentally or otherwise. This arrangement allows members access to credit at the onset of the farming season for example which could boost farm production andincome of the farmer. The amount of loan that a farmer could obtain however depends on the amount of saving he has in the society. The amount that individual farmers could save also depends on a number of factors (Adeyemo and Banire, 2005).

Ayanwale and Banire (2000), claimed that the saving behaviours of the farmers in developing countries is less dependent on the absolute level of aggregate income, but more dependent among other factors on the relationship between current and expected income, the nature of business, household size, wealth and demographic factors like age. Adeyemo and Akala (1992) showed that there is a high degree of responsiveness of saving to changes in income among fishermen in the riverine areas of Nigeria. Information on the determinants of saving patterns among cooperative farmers could help policy makers and credit agencies for effective targeting and efficient credit service delivery of cooperative lending schemes that could increase agricultural production and well-being of cooperative farmers. The objectives of this present study are; to examine the demographic characteristics of cooperative farmers and identify the determinants of saving by cooperative farmers in Ondo state, south-western Nigeria.

MATERIALS AND METHODS

This study was carried out in Ondo state in the south-western region of Nigeria. Ondo state is an agrarian state with a total land area of 14,788.7km^2 and a population of 2,255,723 people in 1991 (NPC, 1991). The state is located within the tropical humid climate characterized by wet and dry seasons. The average annual rainfall ranges between 1200 and 1800 mm and the temperature ranges between 26 and 36°C. The state has a large arable and fertile land which support the cultivation of cash and food crops such as Maize, Rice, Sorghum, Yam, Plantain, Cassava, Cocoyam, Cocoa, Palm, Coffee and Kola-nut. In selecting the respondents, 2 local government areas were randomly selected in Ondo state. The list of all registered and functioning farmers cooperative societies in these 2 local governments were obtained from the state Ministry of Commerce. From this list, fifteen cooperative societies were randomly selected. The official list of all members of the 15 societies was obtained from their office assistants. Finally, one hundred and fifty cooperative farmers were selected based on 10 farmers from each society.

Data were collected through the administration of structured questionnaires to the selected cooperative

farmers. The questionnaire contains questions about age, education, family size, income, farming activities, cooperative experience, loan information and household's expenditure. Data were analyzed using descriptive statistics to describe the socio-economic variables. Multiple regression technique was used to identify the determinant of saving by cooperative farmers. The regression model specified was of the form:

$$Y = \beta_0+\beta_1 \text{ hhinc}+\beta_2 \text{ hhsize}+\beta_3 \text{ yrmem}+\beta_4 \text{ intrate}+\beta_5 \text{ gender}+\beta_6 \text{ foodexp}+\beta_7 \text{ amtbor}+e \quad (1)$$

Four functional forms the linear, double-logarithm, semi-logarithm and exponential were fitted to the data.

Total annual household saving (Y): This is the dependent variable and it is the total amount of money in naira which the household saved in the farmer's cooperative society in a year. Households with higher income, other thing being equal areexpected to save a higher amount. However, other factors also affect this variable as we are going to see later.

Household income (hhinc): This refers to the sum total of the earnings of the household in a year from farm and off-farm sources. The income is expected to boost household's food production by increasing access to more productive resources. The expected effect of this variable on saving is positive (i.e., $\beta_1 > 0$).

Household size (hhsize): This is the number of adult individual members in the household. Since food requirements increase with the number of persons in the household, food expenditure and non-food expenditure increase with increase in household size and this could reduce the saving of the household. The expected effect of household size on saving is negative (i.e., $\beta_2 < 0$).

Year of membership of the cooperative society (yrmem): This is the length of time, measured in year, that the cooperative farmer had been a member of the society. Old members could have enjoyed certain benefits and trust of the society which could have effect on their saving behaviours. The expected effect of this variable on saving is positive (i.e.,$\beta_3 > 0$).

Interest charged on borrowed money (intrate): This is the amount of interest to be paid on borrowed money from the society. The rate of interest could encourage or discourage members from borrowing from the society and this could inturn influence their willingness to save money with the society. The interest rate could also affect the society's surplus and dividend to members at the end of a year. The interest was expressed in naira and not in percentage and the expected effect of interest on saving is positive (i.e., $\beta_4 > 0$).

Gender of the cooperative farmer (gender): The gender of the cooperative farmer could also be important factor in saving behaviour. This is because gender could determine the income level and production of the farmer. It could also affect access to other resources which could influence the income and well-being. This variable was expressed as a dummy and female farmers = 1 and male farmers = 0, the expected effect of gender on saving could be positive or negative.

Household food expenditure (foodexp): This is the total amount in naira spent on food in a year. This variable is important because studies have shown that rural households in developing countries spend between 70-80% of their income on food. Households which spend a larger amount of their income on food are expected to save little amount of money. The expected effect of food expenditure on saving is negative (i.e.,$\beta_6 < 0$).

Amount of money borrowed (amtbor): This is the total amount that the cooperative farmer had borrowed from the society in the last one year. This variable is dependent among other factor, on the amount of saving that the farmer has in the society. Farmers who have borrowed a larger sum of money and have to pay back the principal and the interest might not be able to save as much as farmers who have no outstanding loan. The expected effect of amount of loan on saving is negative (i.e.,$\beta_7 < 0$).

RESULTS AND DISCUSSION

Socioeconomic characteristics of cooperative farmers: The mean age of the farmers was 48.6 years. None of the respondents was less than 20 years and about 29.1% were older than 50 years while 70.9% were aged between 20 and 50 years. About 51.5% of the farmers have between 1 and 5 people in their household and 2.6% have more than 10 peoples in their household. The average household size was about 5 persons. The distribution of farm size shows that the average farm size was 1.04 ha. About 12.6% of the cooperative farmers have less than 1 ha of farmland.

Majority of them (67.3%) have between 1 and 2 ha and only 2.6% have more than 4 ha of land. This result probably confirms that cooperative farmers in the area were small-scaled. Given the fact that about 82.8% of the farmers have received loan in the last one year, it is expected that the size of the farmland cultivated would be larger, but this was not the case. The average annual household income was N140,215 and about 20% of the respondents earned above N300,000 per annum. The summary of the socioeconomic characteristics is presented in Table1.

Table 1: Summary of the descriptive statistics of cooperative farmers

Variables	Frequency	(%)	Mean	S.D.
Age (year)				
20-30	18	11.9		
31-40	31	20.4	48.6	8.76
41-50	57	37.6		
> 50	44	29.1		
Household size (number)				
1-5	78	51.5		
6-10	68	44.9	5.3	2.01
> 10	4	2.6		
Farm size (ha)				
< 1	19	12.6		
1-2	102	67.3	1.04	0.12
3-4	25	16.5		
> 4	4	2.6		
Household income (naira/annum)				
1000-150,000	57	37.6		
151,000-300,000	61	40.3	140,215	96370
301,000-500,000	23	15.2		
> 500,000	9	5.9		
Monthly saving (naira)				
1-500	89	58.7		
501-1000	30	19.8	736.2	201.5
>1000	31	20.5		
Amount of loan collected (naira)				
1000-15,000	87	57.4		
15,100-30,000	24	15.8		
> 30,000	13	8.6	9,420	1258
Has not received loan	26	17.2		
Year of cooperative membership (year)				
<3	23	15.2		
3-12	92	60.7	6.5	2.49
> 12	35	23.1		
Education of farmer (level)				
No education	28	18.5		
Primary school education	30	19.8		
Secondary school education	47	31.0		
Tertiary school education	45	29.7		

Source: Field survey, 2004. Note: ₦120 is equal to 1 US Dollar, S.D. = Standard Deviation

Table 2: Regression estimates for determinants of saving by cooperative farmers

Variables	Coefficients	t-values
Household income	0.060	99306.5***
Household size	-16989.9	-2.70***
Years of cooperative membership	2584.3	2.87***
Interest charge on loan	234087.2	12362***
Gender	269045	11.20***
Household food expenditure	-0.193	-0.631
Amount of money borrowed	-0.542	-4.21***
Constant	90732.9	99306.5***
R^2	0.597	
R^{-2}	0.520	
F-statistic	34.22***	

Source: Field survey, 2004, *** indicates significant at 1% level, Dependent variable = Total household saving

The average monthly saving by the cooperative farmers was N736.2. About 80% of them saved between N1 and N1000 while 20.5% saved more than N1000 monthly. It can be seen that the average monthly saving (N736.2) is 6.3% of the average monthly income (N11, 684) of the cooperative farmers. This low saving percentageould be as a result of factors such as, poor saving attitude of cooperative farmers, high household's expenditure and presence of other saving institutions in the rural communities where the farmers live. The low saving generally confirms the notion of vicious cycle of poverty among peasant farmers-low income, low saving, low investment. On the average, 82.8% of the farmers have collected loan from their society in the last one yearThe average amount of loan collected was N9420 and only 8.6% collected more than N30,000 loan in the last one year. More than half (57.4%) collected between N1000 and N15,000. About 15.2% of the farmers have not spent up to 3 years as member of their cooperative society. Majority (60.7%) have spent between 3 and 12 years while 23.1% have spent more than 12 years. The average year of membership was 6.5 years. Education which is considered as an important capital asset, could affect the production, consumption, saving and investment behaviour of peasant farmers. 18.5% of the farmers have no education at all. 29.7% of the educated farmers have tertiary school education.

Determinants of saving among cooperative farmers: Based on the R^2, F-value, t-statistic and theoretical expectation of the variables, the linear function was chosen as lead equation. Table 2 shows the regression estimates for the determinant of saving by cooperative farmers in Ondo state, 2004.Table 2: Regression estimates for determinants of saving by cooperative farmers.

Table 2 shows that 59.7% of the variations in cooperative farmers saving were explained by the independent variables included in the model. The F-statistic (34.22) confirms the suitability of the overall regression equation. The result shows that the coefficient of household income was positively related but not significant with saving. This is against the popular believed that household income is a strong determinant of

saving. The non-significant of income could probably be that cooperative farmers do not save in the society as expected, according to their income or perhaps they save more with other saving institutions other than cooperatives. This could also have to do with the security of money saved in the societies. Though the amount of saving in the society is an important factor in obtaining loan many farmers might consider that cooperatives are not save enough to keep their money.

Household size has a negative coefficient that was significant at 1% level. This is in agreement with a priori expectation. The larger the household size, the higher the expenditure and the smaller the amount of saving by the household. Years of cooperative membership also have a positive and significant coefficient, indicating that the higher the number of years of cooperative membership, the higher the amount of saving. Interest rate charge on loan has a positive and significant coefficient. This is in agreement with the theoretical expectation. This implies that farmers would continue to save even with increase in interest rate. The distribution of society's surplus according to member's patronage could be the motivating factors here. It is well documented that cooperative societies share their surplus according to member's patronage (in terms of savings, purchases and loan) at the end of the accounting year and this could motivate members to continue to save at higher interest rate. The gender of the households head has a positive and significant coefficient. Considering the gender dummy, we conclude that women farmer co-operators save more than men farmer co-operators since the dummy stipulate women as the reference group.

Household food expenditure has a negative and non-significant coefficient. This means household food expenditure is negatively related to saving. This agrees with a priori expectation. The larger the household food expenditure, other things being equal, the lower the saving. This is understandable because food expenditure accounts for between 70 and 80% of household expenditure in developing countries. The coefficient of the amount of money borrowed was negative and significant at 1% level. This agrees with a priori expectation. When farmers have outstanding loan to pay back, this could reduce the amount of money that they would save in the society. On the whole, household size, interest rate on loan, years of cooperative membership, gender and amount of money borrowed were significant in determining the amount of saving by cooperative farmers in the study area. Thus, these factors have to be considered in designing strategies aimed at improving the saving pattern of cooperative farmers.

CONCLUSION

Farmers' cooperatives have been in existence in Nigeria for centuries. Their importance in pooling resources nd contributing to the agricultural development of the country are well documented. This present research has shown that household's socioeconomic characteristics could affect the amount of saving by cooperative farmers. It specifically ide ntifies household's size, year of cooperative membership, interest charged, gender and amount of money borrowed as significant factors that could affect the saving behaviour of cooperative farmers. Given this present scenario, policies hat would encourage the formation and development of farmers' cooperative society should be put in place by government. The societies should be financially equipped by government so that they would have enough funds to give as loan to interested farmers. This could be done in forms of on-lending to the farmers through the societies. Policies that would increase market access and maintain a stable market price should be pursued. This would particularly allow them to earn more, save more and invest more in production activities. A cushioning policy or flexible repayment conditions should be put in place by the cooperative societies so that farmers can still save money when they are paying back the previously collected loan. Awareness programme on birth control should be directed at cooperative farmers to control the household's size which is one of the significant factor that affected house-holds saving.

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