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DETERMINANTS OF SAVINGS AMONG SMALL-SCALE FOOD CROP FARMERS IN OWERRI WEST LOCAL GOVERNMENT AREA OF IMO STATE, NIGERIA

[1]UHUEGBULEM, I.J., [2]HENRI-UKOHA, A., [3]OSUJI, M.N., [4]UKOHA, I.I., [5]OSHAJI, I.O
[1]Department of Agricultural Economics, Federal University of Technology, Owerri
[2]Department of Agricultural Economics & Extension, University of Port Harcourt,
[*]Corresponding author's Email: adanna.henri-ukoha@uniport.edu.ng; ifyuhuegbulem@gmail.com

ABSTRACT
The study on the Determinants of savings among small scale farmers was conducted in Owerri West Local Government Area of Imo State. A multi-stage random sampling technique was used to select 110 small scale farmers. Data were analyzed with the use of descriptive statistics and the multiple linear regression analysis. The study showed that the mean age of farmers in the study area was 47.7years and that majority (78%) of the farmers were married with mean household size of 6 persons. Majority (45.4%) of the farmers had attained primary education and had mean farm sizes of 1.57 hectares. The result of the multiple regression analysis showed that farm size and income had a significant positive influence on the farmers volume of savings while, household size and distance to financial institutions had a significant negative influence on the farmers volume of savings. The main constraints to the small scale farmer's inability to save are inadequate income, lack of access to credit facilities and delays and congestion in bank halls. The study recommended that Government, stakeholders and policy makers should provide incentives in the form of short and medium term loans to enhance the productivity and income levels of the small scale food crop farmers.

Keywords: Savings, Small scale farmers and Income

INTRODUCTION
Agriculture is the economic mainstay of majority of households in Nigeria (Udoh, 2000) and it is a significant sector in Nigeria's economy (Amaza, 2000). The important benefit of the agricultural sector to the Nigeria's economy include the provision of food, provision of raw materials, provision of employment, provision of raw materials for agro allied industries and the contribution to the Gross Domestic Product of the Nigerian economy.

However, the sector is characterized by a multitude of small-scale farmers scattered over wide expanse of land area with small holdings ranging from 0.05 to 3.0 hectares per farmland (Ogundari and Ojo, 2007). These farmers have always played dominant roles in agricultural productivity in Nigeria (Rahji and Fakayode, 2009) as they account for about 90% of food production in Nigeria and other developing countries (Adams and Vogel, 1990; CBN, 2004). These small scale farmers are currently being faced with the problem of low productivity, a factor which has affected their income, savings and investment pattern. Savings can be defined as the part of income that is not immediately spent or consumed but reserved for further consumption, investment or unforeseen circumstances. According to Ajayi (1998) "savings is normally considered in economics as disposable income less personal consumption expenditure" Savings are very imperative for supporting and developing rural enterprises, improving well-being, insuring against times of shocks, and providing a buffer to help people cope in times of crisis (Rutherford, 1999; Zeller and Sharma, 2000). Households' savings play an important role

in the economic development of both developed and developing nations, due to its significant influence on the circular flow of income in the economy (Iyoha *et al.*, 2003).

The ability, willingness and opportunity of households to save and invest over time can therefore significantly influence the rate and sustainability of capital accumulation and economic growth in developing countries (Oluwakemi, 2012). Also, Ogheneruemu *et.al* (2014) noted that savings is important in developing a strong rural financial system but its mobilization by peasant farmers for their farming activities have become difficult because of the peculiarities associated with the sector and the conditions of the small scale farmers. Odoemenem *et al.*, (2013) were of the view that when these small scale farmers save, they are able to invest their savings in the agricultural and non-agricultural sectors. Investment in the agricultural sector includes the purchase of improved varieties, machineries, fertilizers, chemicals, hired labour and purchase of more hectares of land for farming. While investment in non-agricultural sector are mainly centred on education, trade expansion, building houses, dowry obligation, and purchase of durable assets. One of the basic problems confronting the development of agricultural sector in Nigeria could be attributed to inadequate savings by small scale farmers and this has led to low investment, low productivity and as well low income. This situation perpetuates the vicious cycle of poverty of which most rural farmers find themselves in. Despite this problem, policy makers have not really drawn up adequate and comprehensive rural savings scheme that will motivate the farmers to save and invest their capital productively (Odoemenem *et al.*, 2013; Sunday *et al.*, 2011).

Thus, it becomes imperative to investigate the determinants of savings by small scale food crop farmers in the study area with the following specific objectives; analyse the socioeconomic characteristics of small scale crop farmers in the study area; determine the factors influencing savings and to identify the constraints that militate against savings by the small scale crop farmers in the study area.

MATERIALS AND METHODS

The study was carried out in Owerri West Local Government Area of Imo State. Owerri West Local Government Area is in Owerri Agricultural Zone of Imo State. It has an area of 295km2 and a population of about 99,265 as at the 2006 census (NPC, 2006). Its headquarters is located in Umuguma and the major occupation of the people are farming and trading. Farmers in these areas engage in the production of staples like yam, cassava, potatoes, plantain, maize and vegetables. It is made up of 16 communities which are; Umuguma, Avu, Okuku, Oforola, Obinze, Nekede, Ihiagwa, Eziobodo, Okolochi, Emeabiam, Umuokpor, Irete, Orogwe, Amakohia, Ndegwu and Ohii.

The Multi stage sampling technique was employed in selecting the sample size. In the first stage, seven communities were randomly selected out of the 16 communities in Owerri West Local Government Area. In the second stage, 3 villages were randomly selected from each of the selected communities making a total of 21 villages. The sampling frame was the list of all food crop farmers in the selected communities; it was compiled with the aid of Extension agents from Imo ADP. From this sampling frame, seven farmers were selected from each village making a total of 126 farmers. The study was designed to generate a total of 126 respondents; however after data management only 110 questionnaires were used for the analysis. Data were collected from primary and secondary sources. Primary data were collected through the use of structured questionnaire that were administered to the sampled rural farmers while the secondary data were collected from literatures such as textbooks, Journals, research reports etc.

Data were analyzed using descriptive statistics and the ordinary least squared multiple regression techniques. The descriptive statistics was used to analyse the socio economic characteristics while the ordinary least squared multiple regression model was used to analyse the factors influencing the amount of money saved.

The implicit form of the multiple regression model is expressed as;

$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, e)$ …… eqn 1

Where,

Y = Amount saved (₦)

X_1 = Age (years)

X_2 = Marital Status (Dummy; 1 = married; 0 = single)

X_3 = Sex (Dummy; 1= male; 0 = female)

X_4 = Household size (number)

X_5 = Farming experience (years)

X_6 = Distance to financial institiution (km)

X_7 = Educational level (years)

X_8 = Farmsize (ha)

X_9 = Annual farm income (₦)

e = Stochastic error term

It is expected *a priori* that:

$X_5, X_6, X_7, X_8, X_9, X_{10} > 0$; $X_1, X_2, X_3, X_4 < 0$ Four functional forms (Linear, Exponential, Semi-log and Double-log function) of the specified model were fitted to the data. The lead equation was selected based on the values of the coefficient of multiple determination, the magnitude of the F-ratio as well as the conformity of signs of coefficient to *a priori* expectations and the number of significant parameters.

RESULTS AND DISCUSSION

Socio Economic Characteristics of Food Crop Farmers in the Area

Table 1 shows the distribution of respondents according to their-socio economic characteristics

Table 1: Distribution of the respondents according to their-socio economic characteristics in the study area

Variables	Frequency	Percentage
Age		
1-30	6	5.45
31-40	22	20.00
41-50	38	34.55
51-60	24	21.82
61 and above	20	18.18
Mean	47.7	
Sex		
Male	47	42.73
Female	63	57.27
Marital Status		
Single	20	18.18
Married	86	78.18
Widowed	4	3.64
Educational Level		
No formal education	14	12.73
Primary education	50	45.45
Secondary education	32	29.09
Tertiary education	14	12.73
Mean	6.2	
Farming Experience		
1-5	14	12.72
6-10	20	18.18
11-15	34	30.92
16-20	24	21.82
21 and above	18	16.36
Mean	15	
Household Size		
1-3	29	26.36
4-7	45	40.90
8-11	30	27.27
12-15	6	5.47
Mean	6	
Farm size		
<1	36	32.76
1 - 2	62	56.36
3 - 4	5	4.54
4 and above	7	6.36
Mean	1.57	

Source: Field data, 2016

The distribution of the respondents according to age is shown in table 1. The table reveals that the mean age of the farmers was 47years. This is an indication that the small scaled food crop farmers in the study area were middle aged farmers who are still at the active and productive stage of their life and have the ability to withstand the stress of most farming operations. This has an implication on agricultural production because of the ability of this segment of the population to effectively withstand the rigours, strain and stress involved in agricultural production. (Onyenucheya and Ukoha, 2007)

The distribution of the respondents according to their gender is shown in Table 1. The table reveals that majority (57%) of the farmers in the study area were females while (43%) of them

were males. This may be due to the fact the male folk prefers other business such as bus transportation, tricycle (*keke*) driving and motorcycling to farming. This finding is consistent with that of Osondu et.al (2015) where he asserted that the female farmers generally make greater contributions towards agricultural production. The table also showed that a good proportion (78%) of the small scale farmers in the study area were married, while (18%) and (4%) of the respondents were single and widowed respectively. This implies that majority of the respondents were more committed in farming because of the need to supplement the family's means of livelihood (Adegboye, et.al, 2008)

The table revealed that majority (45%) of the farmers had primary school education while (13%) of them had no formal education. However, (87%) of the farmers in the study area were literate with diverse formal educational level ranging from primary school education to tertiary education. Possession of formal education will enable the farmers adopt agricultural innovations and this can impact on their level of income that could be generated from their farm activities through improved agricultural innovations, hence improving the capability of the farmers to save. The table also reveals that majority (31%) of the respondents in the area had gained farming experience of between 11 to 15 years, while (21%) and (18%) of them had farming experiences of between 16 to 20 years and 6 to 10 years respectively. The mean farming experience was 15 years. This result indicates that the small holder farmers in the study area had gained enough experience in the farming activities. This is in agreement with the findings of (Orebiyi, 2000) that the higher the farmers farming experience, the higher his knowledge to tackle farm production problems and the higher his output. The table reveals that a good proportion (40.90%) of the small scaled farmers had household sizes of between 4 to 7 persons, while 26.36% and 27.27% of them had 0 to 3 and 8 to 11 persons respectively. The mean household size was 6 persons. This result indicates that the small scaled farmers in the study area had relatively large household sizes which are an advantage in the area of provision of farm labour for agricultural production in the area. This is in agreement with Henri-Ukoha et.al (2012) who opined that larger household size impacts on output positively

The distribution of respondents according to farm size is shown in table 1. The table showed that (33%) of the farmers had farm sizes of less than one hectare, while majority (56%) of them had farm sizes of between 1 to 2 hectares. The mean farm size of the respondents is 1.57hectares. Thus this is a clear indication that the farmers in the study area are small scaled. This is in agreement with the findings of Olawepo (2010) that most farmers in the rural area generally have small farm holdings. Table 2 shows the multiple regressions result of the relationship between the amounts saved by smallholder farmers and some selected variables.

Table 2: Multiple regression result between amount saved and some selected variables

Variables	Linear Form	Semi log Form	Double log Form	Exponential Form
Age	-2943.60	-2.8734	-79049.5	-0.0479
	(-0.9253)	(-1.0639)	(0.5636)	(0.6945)
Sex	74338.9	1.9928	84951.5	2.1996
	(1.0887)	(1.4021)	(1.1883)	(1.4874)
Marital Status	-982.10	0.5303	20752.6	0.3768
	(-0.0128)	(0.3533)	(0.2749)	(0.2262)
Household size	-38118.5	-2.7656	-516665.9	-0.7140
	(-2.2143)**	(-1.3272)	(-4.9295)*	(-1.9151)
Farming experience	-91.2958	2.1752	16733.4	0.2203
	(-0.0898)	(2.2978)**	(0.3514)	(2.1135)*
Dist to financial Inst	-73729.44	-1.6336	-296440.5	-0.6881
	(-3.5735)*	(-1.2419)	(-4.48037)*	(-1.5400)
Educational level	5294.6	0.3264	10326.5	0.0615
	(2.6879) *	(0.4459)	(2.2805) **	(0.3670)
Farm size	742056.4	-0.4850	106709.2	1.8906
	(2.8251)*	(-0.7172)	(3.1372)*	(0.3323)
Annual income	0.3405	3.0992	72113.5	5.4882
	(3.2484) *	(2.3101)**	(1.0687)	(0.2418)
R^2	0.83044	0.58594	0.81172	0.55752
F value	21.55004	6.22651	18.96949	5.54403

Source: Field data, 2016 (* = 1% significance, ** = 5% significance)

According to Table 2, the linear functional form produced the best fit and hence it was chosen as the lead equation. This choice is based on the premise that it has the highest value of the coefficient of multiple determination (R^2), highest number of significant variables and conformity to *a priori* expectation. The (R^2) value was found to be 0.8304 and this indicates that about 83% of the total variation of the savings of small scale farmers is attributed to the specified explanatory variables in the model. The table shows that the coefficient for Distance to financial institution, farm size and income were all significant at 1% level, while the coefficient of household size was significant at 5%. However, the coefficient for Age, Sex, Marital status, Educational level and farming experience were not significant even at 5% level.

Household size had a significant negative coefficient on the volume of savings of small scale farmers. This implies that a farmer with small household will likely save more of his income. Thus, this is in line with *a prori* expectation, as increase in household size, reduces the capacity of farmers to save. This contradicts the findings of Osondu, et.al (2015) that farmers with large household sizes save more of their income.

The coefficient of distance to financial institution was also significant at 1%level and negatively signed. This implies that the farther the distance farmers had to travel to banks to perform financial transactions, the lower the volume of saving. Thus, such scenario will discourage farmers from going to bank to save their money and thereby encourage consumption spending. The coefficient for farm size was significant at 1%. This implies that the larger, the farm size, the higher the amount of savings. It is expected that an increase in cultivable land will increase farmer's output and income and this will invariably lead to a significant increase in their volume of savings. This is in conformity with *a priori* expectation since increased yield may translate to increased income of farmers and this will impact positively on their savings.

The coefficient for income had a significant positive relationship on the savings of small scaled farmers. This is in line with *a priori*, as it is expected that an increase in the income of

farmers will lead to an increase in the volume of savings of farmers. This implies that as the farmers income increases, the tendency to save increases too.

Table 3 shows the distribution of the respondents according to constraints to savings.

Table 3: Distribution of the respondents according to constraints to saving

Constraints	**Frequency	Percentages
Inadequate farm income	97	1st
Delays and congestion at banks	64	3rd
Fear of bank failure	43	4th
Inadequate access to credit	81	2nd
Bureaucracy of opening bank account	23	5th

Source: Field data, 2016. Multiple responses recorded**

The constraints identified by the respondents that affect their attempt to save are shown in Table 3. The respondents identified several constraints limiting their ability to save. Inadequacy of farm income was the main constraint to their savings as it ranked first. This could be attributed to the fact that a greater part of their expenditure were been channelled towards training their children in school, feeding and payment of rent and thus they were unable to save although they always desire to save. Inadequate access to bank credit which ranked second was also found to limit the small scale farmers saving abilities. When these farmers do not have access to credit facilities, they will not be able to increase their productivity and thus they will not have enough income from the sale of their farm output. However, bureaucracy of opening bank account was the least ranked constraint limiting their savings ability.

CONCLUSION

This study investigated the determinants of savings by small scale farmers in Owerri west local government area of Imo State. Farm income, household size, farm size and distance to financial institutions were found to significantly affect the volume of savings and capital accumulation in the study area. It shows that these socioeconomic variables have impact on the volume of savings and capital accumulation of the rural farmers. The study also found out that the major constraints limiting the ability of small scaled farmers to save were inadequate income, lack of credit facilities and delays at banking premises.

The study recommended that Government, policy makers, stake holders and private investors should provide sound policies and incentives in form of improved technology, subsidized input prices, appropriate farm support services, medium and long term loans to small scale farmers in order to boost their productivity and increase their income level. Also, Government should encourage commercial banks to establish branches in the rural area to reduce distance problem which will help to improve rural savings for sustainable investment opportunities in agricultural production.

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