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COMPARATIVE ANALYSIS OF INFORMAL SAVINGS FORMS OF MALE-HEADED AND FEMALE-HEADED FARM HOUSEHOLDS IN AGUATA LOCAL GOVERNMENT AREA OF ANAMBRA STATE, NIGERIA

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Abstract

This study comparatively analyzed informal savings forms of male-headed and female-headed farm households in Aguata Local Government Area of Anambra State, Nigeria. 90 male and 90 female headed farm households were selected using multi-stage random sampling technique. Data was collected using structured questionnaire and analyzed using descriptive statistics, probit and Ordinary Least Square (OLS) regression models. Results showed that mean household size of both male and female headed farm households was 8 persons and that the male and female headed farm households saved a mean amount of ₦ 96,138.00 and ₦ 74,005.00 respectively in informal forms per annum. It was also observed that 90.00% and 83.33% of male and female headed farm households saved in form of cash at hand. The probit regression results revealed that household size, education level, saving distance and age were significant determinants of male headed farm households' decision to save in informal forms, while, household size, income, saving purpose and interest on savings were significant determinants of female headed farm households' decision to save in informal forms. The OLS regression results revealed that income, household size, education and age were significant determinants of amount saved in informal forms by male headed farm households, while income, age, saving distance and farm size were significant determinants of amount saved in informal forms by female headed farm households. It was recommended that government should educate farm households on the inherent benefits of maintaining low household sizes. Policies that reduce household size will improve savings of the farm households.

Key words**:** *farm households, household heads, informal savings forms*

INTRODUCTION

Farm households (male and female headed) in Nigeria either depends solely on farming activities for survival and generation of income or depend on other non-farming activities to supplement their farm income [30]. Most farm households have limited resources and do not have ready access to financial services including saving facilities of banks and other formal financial institutions due to absence of formal financial institutions in rural areas and low literacy level of the farmers. [10] rightly noted that the formal financial institutions in Nigeria provides services including savings facilities to about 35.0% of the economically active population while the remaining 65.0% are excluded from access to formal financial services [10].

Nigeria is endowed with many indigenous savings forms which through their informal and flexible mode of operation provide a savings forum for most farm households. The different informal saving mechanisms available to farm households in Nigeria include: stashing cash at home, keeping money with neighbours, friends or family members, saving money in rotating savings and credit association (ROSCAS), accumulating savings and credit association (ASCARS), credit and thrift cooperative societies and in-kind savings such as savings in the form of gold, silver and raw-materials [15]. In general, informal savings involve small savings and deposit and short-term transactions operated without physical collateral and takes place close to the

residence of its clients. Informal savings is considered more suitable to the needs of the rural farm households and characterized by small-scale transactions and risk. Major attributes of informal savings organization include easy accessibility, mobilization of small savings, flexibility and adaptability, social cohesion and security for members [24]. This encourages rural farm households to save in informal forms.

Savings is a means of accumulating assets that perform specific function for the saver [17]. It simply means putting something aside for future use or what will be considered as deferred expenditure [5]. Savings provide several benefits for male and female headed farm households. The sustenance of farm household savings increases the possibility of future investment and risk management both at the micro and macro- levels in the economy [33]. Directly, savings could be used for investment. Indirectly, savings indicates repayment ability, increases credit rating and can serve as collateral in a credit market [9]. Male and female headed farm households savings strategies deserve special attention because; savings is a crucial element of farmer's survival and key to economic growth. According to [27] successful rural finance stimulates all rural development.

In general, household savings can be used for a variety of purposes, such as purchasing or renovating a home, buying of goods and services, investing in agriculture, investing in financial and non-financial assets and repaying debt. However, farm household savings are constrained by scarcity of resources, low income, differential power relations and cultural values and standards. Understanding how farm households save their money and the factors that influence the amount saved is important for the conduct of monetary policy. The study intends to: (i) describe socio-economic characteristics of male and female headed farm households in the study area; (ii) identify various informal saving forms adopted by male and female headed farm households in the study area; (iii) determine factors that influence decision to save in informal forms by male and female headed farm households; (iv) determine factors that influence amount saved in informal forms by male and female headed farm households in the study area; (v) identify problems constraining male and female headed farm households from saving in informal forms.

MATERIALS AND METHODS

Study Area

The study was conducted in Aguata Local Government Area (LGA) of Anambra State. The study area lies between latitudes 6^0 13´ and 7^0 9´ N of the Equator and longitudes 7^0 49´ and 7^0 57´ E of the Greenwich Meridian. It is bounded on the north by Ideato North LGA of Imo State, on the South by Oko in Orumba north local government area cast by Ichida in Aniocha local government area on the west by Umunze in Orumba south local government area of Anambra State. Aguata LGA has a total population of 239,049 persons, made up of 141,329 males and 149,720 females [23].

The study area has 14 communities which include Ekwulobia, Uga, Igbo-Ukwu, Ezinifite, Umuchu, Isuofia, Achina, Akpo, Amesi, Ikenga, Umona, Ora-eri, Aguluezechukwu and Nkpologwu. The local government area has a vast number of informal financial organizations which are formed by communities or villages or groups, some of these includes; Ekwulobia progressive association (EPA), Ezenike Revolving Savings Associations (ERSA), Ikenga Fixed Fund and Savings Association (IFFSA) and Ofu-Obi Daily Savings Association (ODSA). These institutions are characterized by savings contribution with membership of about 50-80 percent of the household's heads in the study area.

Sampling Technique and Data Collection

Multi stage random sampling technique was used in this study for the purpose of selecting sampling location and samples. In the first stage five autonomous communities (Amesi, Isuofia, Ekwulobia, Ezinifite and Umona) were randomly selected from the study area. In the second stage, two villages were randomly selected from each of the communities; this gave a total of ten villages.

At the village level, a list of male and female headed households was formulated with the help of natives. This list served as the sampling frame, from which 9 male and 9 female headed farm households were randomly selected thus, giving a sampling size of 180 farm households, made up of 90 male-headed and 90 female-headed farm households. A farm household was defined for this study in line with [6] as an economic unit consisting of either a single person or a group of persons who live together and depend on common income and within the limits of that income, exercise choices in meeting specific objectives and where at least one member describes their major occupation as farming.

Structured questionnaire was used to collect data from the household heads. Data collected from the household heads included, age, marital status, education level, household size, farm size, amount saved in various informal credit units, frequency of savings, types of informal saving forms and outlets, reasons for saving in informal credit units and constraints to household savings activities.

Method of Data Analysis

Descriptive statistics such as means, frequencies, tables and percentages were used to analyse the socio-economic characteristics of the male and female headed farm households (objective i), identify various informal saving forms adopted by male and female headed farm households (objective ii) and identify problems constraining male and female headed farm households from saving in informal forms (objective v). Probit model was used to determine the factors that influence decision to save in the informal forms by the male and female headed farm household (objective iii), while ordinary least square (OLS) multiple regression model was employed to analyse the factors that influence amount saved by male and female headed farm households (objective iv).

Model Specification

The probit model is appropriate when response to dependent variable (Y) takes one of only two possible values representing presence or absence; the model was adopted as used by [14]:

$Pi [y=1] = [Fzi]$ … (1)

Where

$Zi = \beta 0 + \beta_1 X_1 + e$

$Y_i = \beta_1 + \beta_2 X_{2i} + ... + \beta_k X_{ki} + \mu$ … (2)

Yi* is unobserved but Yi = 0 if $y_i^* < 0$,1 if $Y_i^* \geq 0$

$P (Yi = 1) = P (Yi^* \geq 0)$

$P (\mu i \geq -\beta_1 + \beta_2 X_{2i} ... -B_k X_{kL}$ … (3)

Where i = 1, 2 ……180 male and female headed farm households

Where Y_i = decision to save in the informal forms by male and female headed households (dichotomous variable, 1 if yes; 0 if otherwise)

β_1 = Unknown coefficients value of factors

X_1 = Household size (number);

X_2 = Age of household head (years);

X_3 = Education level of household head (number of years spent in school);

X_4 = Income (Naira);

X_5 = Distance from saving centre (kilometre);

X_6 = Purpose of saving (if for investment = 1, if consumption = 0);

X_7 = Interest on savings (%);

X_8 = Farm size (Hectare);

μ = Error term.

The OLS model used is implicitly stated as:

$Y = F (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, e_i)$

Y = Amount saved (Naira)

X_1 = Income (Naira)

X_2 = Household size (number)

X_3 = Education level (number of years spent in school)

X_4= Age of household head (years)

X_5 = Distance from saving center (kilometer)

X_6 = Interest on savings (%)

X_7 = Farm size (Hectare)

X_8 = Purpose of saving (if for investment = 1, if consumption = 0)

e_i = Error term.

RESULTS AND DISCUSSIONS

Socio Economic Characteristics of Farm Household Heads

The distribution of male and female heads of farm households according to socio-economic profile is presented in Table 1. With respect to age, 36.67% and 56.67% of the male and female farm household heads were within the

ages of 41 and 50 years while 30.0% and 16.67% of male and female heads of households were within the ages of 31 and 40 years respectively. Mean age of the male and female heads of farm household was 47 and 42 years respectively. This indicates that the male and female heads of farm households were still active and productive. In terms of marital status it is observed that 83.33% and 70.00% of male and female heads of farm households respectively were married. Most of the female heads of the farm households were wives of male migrants. This implies that the married respondents were more involved in farming because of the need to supplement the family's means of livelihood [2]. The married class tends to save more because of the need to prepare for the possibility of financial crisis [5]. 60.00% and 33.33% of the male and female heads of farm households respectively had secondary school education, 23.33% and 36.67% of the respective group of household heads had primary school education, while 10.00% and 16.67% of the male and female farm household heads had tertiary education. In summary, 93.33% and 86.33% of male and female headed farm households respectively had formal education ranging from primary school education to tertiary school education. Acquisition of higher formal education by heads of farm households would enable them to better utilize effectively and efficiently whatever resources are available in the area including savings facilities. Higher education would enhance improved technology adoption and increased farm income, hence increased savings [25]. With respect to household size Table 1 shows that 53.34% and 43.33% of the male and female headed farm households had household size of between 5 and 8 persons while 33.33% and 40.00% of them had household size of between 9 and 12 persons. The mean household size of both groups was 8 persons. Large household size increases the propensity of farm household heads to consume rather than to save [12]. The mean farm size of male and female headed farm households was 1.53 hectares and 1.02 hectares respectively. This is a clear indication that the farm households in the study area operated mostly on marginal small farm lands. This result is in agreement with the observation of [31] that most farmers in rural areas of south-eastern generally have small land holdings.

Table 1. Distribution of Male and Female Headed Farm Households According to Socio-Economic Characteristics in Aguata LGA of Anambra State, Nigeria

	Male headed		Female headed	
Age (years)	**Frequency**	**Percentage**	**Frequency**	**Percentage**
31-40	27	30.00	15	16.67
41-50	33	36.67	51	56.67
50-61	21	23.33	12	13.33
Above 60	9	10.00	12	13.33
Mean	47.06		41.98	
Marital status				
Single	6	6.67	12	13.33
Married	75	83.33	63	70.00
Widowed	9	10.00	15	16.67
Educational status				
No formal education	6	6.67	12	13.33
Primary education	21	23.33	33	36.67
Secondary education	54	60.00	30	33.33
Tertiary education	9	10.00	15	16.67
Household size				
1-4	12	13.33	15	16.67
5-8	48	53.34	39	43.33
9-12	30	33.33	36	40.00
Mean	8.38		8.42	
Farm size				
<1	24	26.67	42	46.67
1-2.0	48	53.33	39	43.33
2.1-3.0	18	20.00	9	10.0
Mean	1.53		1.02	
Total	90	100.00	90	100.00

Source: Field survey, 2014.

Frequency of Savings by the Male and Female Headed Farm Households

Table 2 shows that 16.67% and 40.0% of the male and female headed farm households save on weekly basis respectively. 20.00% and 13.33% of male and female headed farm households respectively save sporadically. This means that these people save as at when they have an excess income. They do not have any specific pattern or interval for which they save their income. These categories of respondents included those whose incomes were irregular such as farmers and traders. According to them, they save when there is a good harvest or when sales are good. As much as 33.3% and 26.67% of both groups of respondents save monthly. This group is likely to consist of farm households who earn income on monthly basis and also of some individuals who make it a deliberate habit to save within specific intervals. It is important to note that 10.00% and 13.33% of male and

female headed farm households are prolific savers who save more than once in a week. Only 6.67% of the male headed farm households save on an annual basis.

Table 2. Distribution of Male and Female Headed Farm Households According to Frequency of Savings in Informal Financial Sectors in Aguata Local Government Area of Anambra State, Nigeria

	Male headed		Female headed	
Frequency of saving	Frequency	Percentage	Frequency	Percentage
Sporadically	18	20.00	12	13.33
Weekly	15	16.67	36	40.00
Monthly	30	33.33	24	26.67
Quarterly	12	13.33	3	6.67
Annually	6	6.67	0	0.00
Prolific	9	10.00	12	13.33
Total	90	100.00	90	100.00

Source: Field survey, 2014.

Amount of Cash Savings

The distribution of the respondents according to amount of annual cash saved in informal savings forms is shown in Table 3. Table 3 shows that male-headed and female headed farm households saved a mean amount of ₦ 96,138.00 and ₦ 74,005.00 per annum respectively. It could also be observed that 36.67% and 10.00% of male and female headed farm households respectively saved between ₦ 101.000-150,000 per annum while 20.00% and 40.0% of male and female headed farm households respectively saved between ₦ 1-50,000 per annum. This implies that the female headed farm households in the study area were small savers probably because they are low income earners. [13] opined that savings at the household level are important for the welfare of family members as a means to increase investment and income and address other financial needs.

Table 3. Distribution of Male and Female Headed Farm Households According to Annual Amount of Cash saved in informal Saving Forms in Aguata LGA of Anambra State, Nigeria

	Male headed		Female headed	
Cash savings (₦)	Frequency	Percentage	Frequency	Percentage
1-50,000	18	20.00	36	40.00
51,000-100,000	24	26.67	27	30.00
101,000-150,000	33	36.67	9	10.00
151,000-200,000	12	13.33	12	13.33
201,000-250,000	3	3.33	6	6.67
Total	90	100.00	90	100.00
Mean	96,138.00		74,005.0	

Source: Field survey, 2014.

Reason for Savings

As indicated in Table 4 the male headed farm households ranked investment (36.67%) and meeting emergencies (30.00%) as the first two and foremost reasons why they save. As much as 43.33% of the female headed households ranked consumption (to meet household needs) as the main reason why they save. Meeting emergencies was the second foremost reason (33.33%) why the female headed farm households save. The findings correspond with the assertion by [29] that the most important reason why households save is for investment and to prepare for the possibility of financial crisis, accidents, illness, pregnancy, job loss, divorce and many other crises, which all have financial consequences. It is also worthy to note that 23.33% and 10.0% of male and female headed farm households also save for the money to increase in value. A finding that is in line with [4] who opined that increasing ones' income substantially in amount is one of the reasons why people may want to save. Only 13.33% and 6.67% of the male and female headed households respectively indicated to also save in-order to repay previous borrowed funds.

Table 4. Distribution of Male and Female Headed Farm Households according to purpose for saving in Informal Savings Forms in Aguata LGA of Anambra State, Nigeria

	Male headed		Female headed	
Saving Purpose	Frequency*	Percentage	Frequency*	Percentage
Emergency	27	30.00	30	33.33
Consumption	18	20.00	39	43.33
Investment	33	36.67	27	30.00
Rate of return	21	23.33	9	10.00
Debt repayment	12	13.33	6	6.67

Source: Field Survey, 2014; * Multiple responses recorded

Informal Savings Outlets Undertaken by Male and Female Headed farm Households

The various outlets of savings adopted by the male and female headed farm households is presented in Table 5. The findings of the research revealed that the most popular informal outlets of savings adopted by 63.33% of the male headed and 56.67% of the female headed farm households in the study area are the cooperative thrift and credit society and mutual self-help groups respectively. 60.00% of the male headed and 50.0% female headed farm households saved

in rotating savings and credit association (Isusu). 53.33% of the female headed farm households who belonged to cooperative societies claimed that the societies (cooperative thrift and society) served as alternative forms of financial transactions in form of savings. Also, 43.33% and 36.67% of male and female headed farm households saved their money in Akawo (mobile banking), while 46.67% and 30.00% of them had their savings with fixed savings and credit association. 70.00% of the male headed and 36.67% of the female headed farm households claimed to also save in their homes. It is evident from Table 5 that most of the farm households saved their money in more than one informal savings outlet, which may be due to the relative ease in obtaining credit devoid of administrative delay, non-existence of security or collateral and flexibility built into repayment as reported by [26].

Table 5. Distribution of Respondents according to kinds of savings outlets or association adopted by Male and Female Headed Farm Households in Aguata Local Government Area of Anambra State, Nigeria

	Male headed		Female Headed	
Savings Outlets	**Frequency***	**Percentage**	**Frequency**	**Percentage**
Rotating savings and credit association (Isusu)	54	60.00	45	50.00
Self-help group	33	36.67	51	56.67
Mobile bankers (Akawo)	39	43.33	33	36.67
Fixed savings and credit association	42	46.67	27	30.00
Cooperative thrift and credit society	57	63.33	48	53.33
Home	63	70.00	33	36.67
Others (family, relation and friends)	6	6.67	9	10.00

Source: Field Survey, 2014; * Multiple responses recorded.

Informal forms of savings undertaken by male and female headed households

The various forms of savings adopted by the male and female headed farm households are presented in Table 6. Savings may be made by farm households in physical or financial form. Some households save in form of liquid asset or cash in hand; gold, silver, and other precious metals; stored crop produce; livestock like sheep, goats, pigs, cows and poultry and in form of assets like land, building, motor cycle, bicycle, scooter, radio, television, chair and other household assets. Table 6 shows that majority (90.00% and 83.33%) of male and female headed farm households respectively save in form of cash at hand. Also, 50.0% of male headed farm households save in form of assets like land, cycle, scooter, radio and chair among others, while 50.0% of the female headed farm households save in form of livestock like goats, pigs and poultry. The study further shows that 30.00% and 43.33% of male and female headed farm households respectively save in form of stored crop produce. 13.33% and 66.67% of the respective groups save in jewelleries while 23.33% and 56.67% save in form of wrapper. From the findings, it is evident that majority of the respondents in the study area saved in monetary form. This may be because of the relative ease of meeting immediate financial need of the family using savings made in cash. This is contrary to [18] that majority of the rural farmers saves in non-monetary forms.

Table 6. Distribution of Male and Female Headed Farm Households according to kinds of Savings Forms adopted in Aguata LGA of Anambra State, Nigeria.

	Male headed		Female	Headed
Savings forms	**Frequency***	**Percentage**	**Frequency***	**Percentage**
Liquid Assets (Cash at Hand)	81	90.00	75	83.33
Saving in barn	33	36.67	12	13.33
Stored crop produce	27	30.00	39	43.33
Livestock like goats, pigs and poultry	27	30.00	45	50.00
Assets like land, cycle, scooter, radio and chair	45	50.00	18	20.00
Jewelries	12	13.33	60	66.67
Wrapper	21	23.33	51	56.67

Source: Field Survey, 2014; * Multiple responses recorded.

Factors Influencing Decision to Save in Informal Savings Associations

Factors Influencing Decision to Save in Informal Savings Associations by Male Headed Farm Households

The probit regression model of factors that influenced decision to save in informal savings association by the male headed farm households is presented in Table 7. Overall, the model predicted 84.93 percent of the sample correctly and posted a log likelihood value of -62.108 and goodness of fit chi-square value of 61.04 which is statistically significant at 1.0% level. In the model, four explanatory variables were statistically significant at given levels and these are household size, age, education and distance to

savings centre. A positive sign on the variable's coefficient indicates a higher probability to save in informal savings associations, among male headed households and vice versa when a negative sign is obtained.

Table 7. Probit Regression estimates of Factors that influenced Decision to Save in Informal Savings Sector by Male Headed Households in Aguata Local Government Area of Anambra State, Nigeria

Variables	Estimated Coefficients	Standard Error	Z-Statistic	P-Value
Constant	-0.415	0.859	-0.481	0.629
Household size	0.143*	0.085	1.754	0.081
Age	0.006*	0.003	-0.284	0.097
Education	-0.139**	0.068	-2.043	0.041
Income	0.012	0.008	1.480	0.140
Distance to saving center	-0.969***	0.177	-5.496	0.000
Savings purpose	-0.023	0.081	-0.282	0.777
Interest on savings	-0.074	0.058	1.085	0.205
Farm size	-886.017	823.081	1.662	0.103
Pseudo R^2		0.832	-1.278	
Log likelihood		-62.108		
Chi2		61.04***		
Cases predicted		84.93		
Correctly (%)				

Source: Field survey, 2014; *Significant at 10% level; ** Significant at 5% level; ******* Significant at 1% level

Specifically, the coefficient (0.143) of household size was significant at 5.0% probability level and was positively signed. This implies that expanding household size increases the probability that a male headed household saves in informal savings associations. Increasing household size imposes additional responsibility on the household head. As such, savings are required to finance these activities which serve as a form of insurance or risk spreading to be tapped in economic hard times [13].

The negative coefficient (-0.139) of education implies that the decision to save in informal saving associations by male headed farm households decreases with increase in education of household heads. The literate heads of households may look down on local institutions as savings outlet but prefer orthodox banks as savings outlet. This finding is in line with [12] who obtained similar result in Abia State.

As expected, the coefficient (-0.969) of saving distance had an inverse relationship with decision to save in informal savings forms. Given the predominance of informal savings in the rural areas which are meant to accumulate a target amount for mostly consumption purposes, as observed by [7], proximity to the savings location is a widely preferred option for ease of access to the saved fund when the need arises.

The coefficient (0.006) of Age was positive and statistically significant at 10.0% risk level, implying that decision to save among male headed household in informal saving sector increases with increasing age. This consolidates the findings of [8] who found that savings capacity is enhanced as age tends to rise.

Factors influencing Decision to Save in Informal Savings Sector by Female Headed Farm Households

The probit regression model of factors that influenced decision to save in informal savings sector by the female headed farm households is presented in Table 8. The model predicted 53.20% of the sample correctly and posted a log likelihood value of -18.712 and a goodness of fit chi-square value of 14.83 which is statistically significant at 1.0% alpha level.

The coefficient (1.614) of household size was significant at 5.0% probability level and was positively signed. This implies that increase in household size increases the probability that a female headed farm household saves in informal financial sector. This is not in line with *a priori* expectation. However, increasing household size imposes additional responsibility on the household head. As such, savings are required to finance these activities which serve as a form of insurance or risk spreading to be tapped in economic hard times [13].

Table 8 also shows that the coefficient (2.320) of income had a significant positive effect at 1.0% alpha level on decision to save in informal savings sectors by female headed farm households. This implies that as the income of female headed farm households increases, the tendency to save in informal financial sector also increases. This is in

agreement with Keynesian postulates that relate income positively to savings and the Friedman permanent income hypothesis. The result is in line with [20] who obtained similar result in Kenya.

The coefficient (-0.435900) of saving purpose has a negative sign and was statistically significant at 10.0% alpha level. This result indicates that decision to save in informal saving sector by female headed farm households is stirred up for the purposes of consumption. This is in tandem with [11] who found out that households mostly save to smoothen their consumption.

The coefficient (-0.3228378) of interest on savings had a negative sign implying that increase in interest rate charged on savings declines the chances of female headed households to save. This can be interpreted as strong evidence that interest rates on savings produce substitution effect on income levels of farm households and then, impose binding liquidity constraints which reduce their propensity to save. This confirms the findings of [22] that had a similar result in their study on differences in households' savings behaviour in industrial and developing countries.

Table 8. Probit regression estimates of factors that influenced decision to save in Informal Savings Sector by Male Headed Households in Aguata Local Government Area of Anambra State, Nigeria.

Variables	Coefficients	Standard Error	T value	P>/z/
Constant	17.583	7.915	2.22**	0.026
Household size	1.614	0.798	2.04**	0.042
Age	0.183	0.323	0.57	0.570
Education status	0.006	0.024	0.23	0.816
Income	2.320	1.086	2.14**	0.032
Distance from saving centre	-0.253	0.276	-0.83	0.408
Saving purpose	-0.436	0.253	-1.74*	0.082
Interest on savings	-0.323	0.203	-1.60*	0.109
Farm size	-0.143	0.163	-0.88	0.380
Pseudo R^2	0.484			
Log likelihood	-18.712			
Chi^2	14.83			
Cases predicted	0.532			
Correctly (%)				

Source: Field Survey, 2014.

**,* = variables significant at 5.0% and 10.0% alpha level

Determinants of Amount Saved by Male and Female Headed Farm Households

Determinants of Amount Saved by Male headed Farm Households

The multiple regression estimates of factors that influenced the amount saved in informal financial organization by the male headed farm households is shown in Table 9. The Exponential function was chosen as the lead equation because it exhibited better diagnostic test statistics than other functions (Linear, double logarithmic and semi logarithmic). The R^2 of the lead equation indicates that 88.28 percent of variability of informal savings amount among the male headed farm households is attributed to the specified explanatory variables in the model. The F-statistic value of 701.70 is statistically significant at 1.0% probability level, suggesting that the data fit the model and that the independent variables were important explanatory factors of the variations in the amount saved by male headed farm households.

The empirical results show that the coefficient (0.5361972) of income had a significant positive effect at 1.0% significant level on the amount saved in informal sector by male headed households. This is in agreement with Keynesian postulates that relate income positively to savings and the Friedman permanent income hypothesis. This implies that as male headed farm households' income increase, the tendency to save in informal saving outlets also increases. The hypothesis asserted that households will spend their permanent income while the transitory income is channelled into savings with marginal propensity to save approaching unity. Similar results have also been obtained by [1] in Morocco; [3] in Nigeria; [16] in China and [20] in Kenya.

The coefficient (-0.1452402) of household size was negative and statistically significant at 1.0% level of significance. This implies that, the higher the household size, the less the amount saved in informal financial sector by male headed farm households. This is in line with *a priori* expectation. It is expected that households with large size will likely channel more of their income to food consumption expenditure rather than to savings. On the other hand, individuals with a smaller family size will have higher tendency to save as reported by [28, 32, 34].

Education had a significant positive effect (0.660254) on the amount saved by male headed farm households in the study area at 1.0% risk level. This implies that savings is predominant among the male farm household heads who had higher levels of formal education. Higher education level would enhance improved access to financial facilities and technology adoption hence increased farm income and greater ability to save [33]. However, the result is contrary to findings obtained by [34] in Pakistan.

The coefficient (0.0978664) of Age was positive and statistically significant at 1.0% alpha level, implying that the amount saved by male headed farm households increases with increasing age. This consolidates the findings of [8] and [33] that savings capacity is enhanced as age tends to rise.

Table 9. Multiple Regression Estimates of Factors that Influenced the Amount Saved in Informal Financial Sector by Male Headed Households in Aguata Local Government Area of Anambra State, Nigeria

		Functional	Forms	
Variables	**Linear**	**Exponential+**	**Semi-Log**	**Double-log**
Constant	-38133.25	7.942327***	46285.22	6.885725***
	(-1.02)	(13.22)	(0.40)	(4.59)
Income	21758.97**	0.5361972***	35268.19*	0.8744072
	(5.88)	(5.89)	(5.21)	(8.58)
Household size	2586.816	-0.1452402***	23020.01*	0.1895723
	(1.25)	(-2.88)	(1.84)	(0.73)
Education	3964.413	0.660254***	18329*	0.1291195
	(0.67)	(5.33)	(1.74)	(0.61)
Age	-143.6693	0.0978664***	-2088.397	0.7758773**
	(-0.21)	(7.01)	(-0.10)	(2.23)
Proximity to saving centre	-1294.469	-0.0229304	-8046.671*	-0.1393655
	(-1.46)	(1.04)	(-1.77)	(-1.39)
Interest on savings	16363.13*	1995.186	19124.71	0.1380492
	(1.50)	(0.96)	(0.74)	(0.57)
Farm size	0.000862	3.02e-07	389.9551	0.0232259
	(0.04)	(0.53)	(0.07)	(0.33)
Purpose of saving	0.130672	0.0127311	0.3352934	0.0370261
	(0.45)	(1.37)	(0.62)	(0.81)
R^2	0.2788	0.8828	0.5544	0.5306
Adjusted R^2	0.2198	0.8816	0.5083	0.4814
F-value	4.72***	701.70***	12.03***	10.80***

Source: Field survey, 2014.

***, **, *: variables statistically significant at 1.0%, 5.0% and 10.0% alpha levels respectively.

Figures in parenthesis are t-ratio, + = lead Equation

Determinants of Amount Saved by Female Headed Farm Households

The multiple regression estimates of factors that influenced the amount saved in informal financial organization by the female headed farm households is shown in Table 10. All the functional forms were significant at given levels implying that any of the functional forms can be used for predictive purposes. However, the savings function was best estimated using the linear functional form, which explained 87.32% of the total variation in the amount of savings of the female headed household farmers in the study area. Also, the linear functional form was chosen as the lead equation based on econometric and statistical reasons such as the number of regression coefficients that are significant, the magnitude of the F-ratio as well as their conformity to priori expectation. The F-ratio (157.86) was significant at 1.0% which attests to the overall significance of the regression result.

The empirical results show that the coefficient (37786.05) of income was statistically significant at 99% confidence level. The positive sign of the coefficient is in line with the traditional Keynesian theory and [11] who opined that the appearance of dissaving in developing countries can be explained by the underestimation of household incomes.

Age had a positive coefficient (384.0856) significant at 10.0% alpha level, implying that savings of the female-headed farm households in informal financial sector increase with increasing age. This consolidates the findings of [8] who found that savings capacity is enhanced as age tends to rise. Old people tend to be more frugal and thrifty.

As expected, saving distance had an inverse relationship (-6227.075) with saving capacity of the households. Given the predominance of informal savings in the rural areas which are meant to accumulate a target amount for mostly consumption purposes, as observed by [7], proximity to the saving location is a widely preferred option for ease of access to the saved fund when the need arises.

With a negative sign identity (-5153.099) for farm size, it indicates that decreasing farm size enhances the savings capacity of female headed households. This is plausible since expanding farm size requires more investment funds which reduces the amount saved. The result however, is not in line with *a priori* expectation. [19] opined that savings is closely related to investment and that

increased savings is a necessary but not a sufficient condition for investment.

Table 10. Multiple Regression Estimates of Factors that Influenced the Amount Saved in Informal Financial Sector by Female Headed Households in Aguata Local Government Area of Anambra State, Nigeria

		Functional	Forms	
Variables	Linear	Exponential+	Semi-Log	Double-log
Constant	-34071.07**	9.509219***	-1335745***	-1.148513*
	(-2.4615)	(35.9137)	(-11.9294)	(-1.5069)
Income	0.9414	0.8472	0.9520*	0.9732
	(0.8881)	(1.1932)	(1.6701)	(1.0934)
Household size	37786.05***	0.1239809***	-20222.41**	0.018234
	(6.9168)	(3.1334)	(-2.0169)	(0.2671)
Education	3642.991	0.1041091**	9618.688	0.0788798
	(0.6338)	(2.1288)	(0.8643)	(1.0412)
Age	384.0856**	0.0052527*	33309.18	0.3175912
	(2.4172)	(1.7280)	(1.2764)	(1.7880)
Proximity to saving center	-5153.099**	0.0964482**	-9185.519	0.0490681
	(-2.4814)	(2.4278)	(-0.8827)	(0.6927)
Interest on savings	-6227.075**	-0.0687977	-236560.2	0.1268303
	(-2.4358)	(-0.6257)	(-1.3781)	(0.9040)
Farm size	-1600.179	-0.000271	-9710.153	-0.0502673
	(-0.3136)	(-0.0027)	(-1.0870)	(-0.8267)
Purpose of saving				
R^2	0.8732	0.7472	0.8520	0.8414
Adjusted R^2	0.8598	0.7316	0.8280	0.8355
F-value	157.86	54.44	39.67	72.71

Source: Field survey, 2014.
***, **, * Indicate variables that are statistically significant at 1.0%, 5.0% and 10.0% alpha levels respectively.
Figures in parenthesis are t-ratio; + = lead Equation

Problems of Informal Savings by male and female headed farm households

The constraints identified by both the male and female headed farm households that inhibit their attempt to save in informal financial sectors are shown in Table 11. The farm households identified several constraints that limit their ability to save part of what they earn for use in the future. The main constraint to both groups inability to save in informal savings form is inadequate income which was attested by 73.3% and 90.0% of male and female headed farm households respectively. According to them, their incomes are not able to meet their needs let alone savings. They conceded that though they always try and wish to save, they are unable to do so due to their limited incomes.

Another hindrance to savings among the male and female headed farm households has to do with the fear that their monies will not be safe if they save it in informal savings form. 63.33% and 46.67% of the male headed and female headed farm households respectively mentioned the fact that fear of people absconding with their savings or thieves entering their homes and making away with their savings as reason for saving limited amount in informal forms. Pressure from the extended family as well as members of the society at large were also identified by 86.67% and 70.0% of the male and female headed farm households respectively as constraining their ability to save money. According to these people, constant illness depletes any money that they may have and may want to put aside for future use.
Other constraints such as remoteness of informal savings association were also found to hinder 26.67% of the male headed and 36.67% of female headed farm households saving abilities. A significant number (63.33% and 43.33%) of the male and female headed farm household respectively also identified their own inability to manage their financial resources very well as a constraint to their savings abilities.

Table 11. Constraints of Savings in Informal Saving Sector by Male Headed and Female Headed Households in Aguata Government Area of Anambra State, Nigeria

	Male	Headed	Female	Headed
Constraints	Frequency*	Percentage	Frequency*	Percentage
Inadequate income	66	73.33	81	90.00
Sickness	42	64.67	60	66.67
Fear of safety of savings	57	63.33	42	46.67
Family and societal demand	78	86.67	63	70.00
Misuse of money	57	63.33	39	43.33
Remoteness of informal savings outlets	24	26.67	33	36.67

Source: Field Survey, 2014; *Multiple responses recorded

CONCLUSIONS

Based on findings obtained by the study, it is adduced that male headed farm households operated larger farms and saved more amount in informal forms than the female headed farm households. Although, both groups preferred to save in form of cash, a greater

percentage of the male headed farm households preferred to save in their homes, while, the female headed farm households preferred to save in self-help groups. The study showed that household size, education level, saving distance and age were significant determinants of male headed farm households' decision to save in informal forms, while, household size, income, saving purpose and interest on savings were significant determinants of female headed farm households' decision to save in informal forms. The study also revealed that income, household size, education and age were significant determinants of amount saved in informal forms by male headed farm households, while income, age, saving distance and farm size were significant determinants of amount saved in informal forms by female headed farm households. The following recommendations are therefore pertinent:

In the face of current harsh economic realities, government should educate farm households on the inherent benefits of maintaining low household sizes. Policies that reduce household size will improve savings of farm households in the area.

Increase in food share of total expenditure and household size would reduce savings rate, thus, there is need for the government to review its policies aimed at reducing consumer price index.

Both male and female headed farm household should diversify into non-farming activities to increase savings.

Policies should be made on the need to facilitate rural farm household investment climate in order to boost the level of productivity and consequently, the level of income which translates to a higher level of savings rate and investment.

Personal efforts of the male and female headed farm households to better their lives should be commended in the face of harsh economic realities, especially to the female headed households because of low possession of productive asset (land) by these women.

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