Comparative Econometric Gender Analysis of Rural Farmers Savings Capacity: Impact on Farm Investment (Study in Southeast Nigeria)

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Abstract: This study examined econometric gender analysis of rural farmers’ savings capacity and its effect on farm investment of rural farmer in Southeast Nigeria. Specifically the study examined socio – economic characteristics of the respondents, ascertained the effects of socio – economic characteristics on savings capacity, investment of resources, and estimated investment of resources. Multistage and random sampling method was used to select 288 respondents for the study. Primary data were collected by means of pre – tested structured questionnaire. Non parametric and parametric statistical tools including means, percentages, frequency counts, T-test was used to test mean differences among farmers and multiple regression were deployed for data analysis. Results of the test between means of savings capacity of the male and female farmers were ₦76,820.16 and ₦56,313.47 respectively. The chow test value of 13.25 was greater than the 2.32 tabulated showing that the chow test was significant. The rural farmers indicated capital, improved inputs, technologies and dependency ratio as major constraints on investment and savings capacity. The study recommended, farmers should be encouraged to engage in off – farm income enterprises for more income to increase investment and savings, encouragement of financial institutions to provide interest free credits to the rural farmers.

Keywords: Savings, Investment, Sustainable Agriculture and Poverty Reduction.

1. INTRODUCTION
Savings capacity of farmers affects their investment and welfare especially the small – scale farmers who occupy the rural communities and are the largest operators in sub Saharan agricultural economy, (World Bank,2014), showed that these rural farmers accounted for about 90% of food produced in sub –
Saharan Africa. Adeleye, (2008) noted that small – scale farmers supplied more than three quarters of the food produced in Nigeria. Over 80% of the Nigerian populations occupy the rural agrarian base of the economy (Falusi, 2005). Despite their contribution to agriculture, small – scale farmers in sub – Saharan Africa are characterized by poverty, this poverty affect their savings and investment in agriculture. Recent policies on economic reforms and rural sector transformation programme connected in increasing agricultural production and poverty alleviation in Nigeria have underscored the effects of savings on investments. This is because since the introduction of Structural Adjustment Programme policies, government subsidy on agricultural inputs has continued to decline (Falusi, 2005). Most often these policies and programmes are not implemented and adversely affect the small – scale farmers savings capacity and investment in agriculture. Household savings consist of physical and non - physical savings. Inadequate infrastructural facilities, poor social services, low technical education, huge external debt, neglect of agriculture, unstable growth pattern of the economy, among other factors are largely responsible for the deplorable poverty situation in Nigeria, especially in the rural areas (UNDP, 2012).

The renewed focus on agriculture as holding the key to national development, in the face of an uncertain and vulnerable oil economy is a compelling challenge to the rural farmers’ investment opportunities, savings and full participation in sustainable agricultural development. The ever increasing food insecurity in Nigeria urgently requires total mobilization and prudent utilization of all available opportunities and potentials that will enhance improved investment in agriculture and increase the saving capacity of the rural farmers (Ugbajah, 2016). It has been pointed out by some scholars (Idachaba, 2006; Grestein-Weiss, Zhan, and Sherraden, (2006)), that varied conclusions reached over the state of national economies of developing countries have been based solely on macro – level studies and their immediate surroundings. Unfortunately, such studies may not give the true and accurate picture of local economic conditions of the rural sector. With the reality of the household being the predominant economic unit of the rural sector, there is possible causality interlinking household socio- economic and demographic characteristics with rural incomes, and invariably, with farm sector development. In the face of readily growing populations which only necessitate agricultural intensification, perhaps the policy implication of low farm size inputs. It will also entail making such packages not only affordable but easily accessible to resource – poor farmers. There is empirical evidence to support the notion that the income position of households is a major factor influencing savings, consumption behaviour and investment, there is also strong evidence that household income is in turn greatly influenced by the socio – economic profile of the household and its position in the life cycle (Harrison, 2014). Adisa and Okonade, (2011) noted that if savings should be equal to investments in real assets for all economic units in an economy over all periods of time, there would be no need for external financing. Economic units would be sufficient, that is, if all money needed for current expenditure and investments in real assets will be met by current income within a given period of time. Since the various economic units are not self – sufficient and cannot match their income with their investment needs, financial institutions come between the savings deficits units. Greater emphasis is placed on micro – finance and credit which requires stipulated minimum savings instead of collateral (Ohaka, Arene and Mkpado, 2005; Okpukpara, 2005). Low level of income and savings amidst increasing consumption expenditure due to high inflationary rate, impose limitations on the availability of equity capital for sustainable agricultural development (Ohaka, Arene and Mkpado, 2005).

Given the abject poverty level characterizing agrarian communities, it is likely that Nigeria may not achieve the National Economic Empowerment and Development Strategy (NEEDS) objectives and Millenium Development Goals (MDGs) targets despite the myriads of policies, programmes and projects to reduce poverty and increase agricultural production (Idachaba, 2006). This may be due to the inability of policy makers to identify factors that will help to control consumption and increase savings for sustainable investment with a view to breaking the vicious cycle of poverty in the rural communities. Interestingly, Mkpado and Ohaka (2006), have agreed that the burden of providing adequate capital/financial services to millions of needy small – scale farmers for sustainable agricultural investment is not what the government of many developing countries can bear alone. Hence the need to mobilize
adequate savings cannot be over emphasized. Theoretically, savings is positively related to interest rate, wealth and substitution possibilities of income (Jhingan, 2003).

The paucity of micro-level socio-economic data in sub-Saharan Africa countries, particularly data on income distribution, consumption expenditure patterns and savings capacity has marred the design, implementation effectiveness and assessment of many development plans (Central Bank of Nigeria, 2009). The implementation of the Structural Adjustment Programme (SAP) on the Nigerian economy, and deregulation of interest rate and its increase, was expected to enhance savings but it did not happen due to inflationary rate. Opinions of researchers such as Okpukpara, (2005) and Jhingan, (2003), strategies for savings mobilization will focus on the saving environment, savers characteristics and type of institution for savings. The major problem confronting rural production in Nigeria as a whole arises from the fact that the farmers and indeed rural entrepreneurs generally are economically weak with little or no capital for investment.

Despite government effort in establishing numerous programmes, projects, schemes and banks for enabling farmer’s full participation in programme implementation to ensure sustainable development of all sectors of agriculture for poverty alleviation, increased savings capacity, increased agricultural investment and improved standard of living of the rural male and female farmers (Adeleye, 2008). It is against this backdrop that this study was designed to carry out the comparative econometric gender analysis of rural farmers savings capacity and farm investment in Southeast, Nigeria. The broad objective of the study was to examine comparative econometric gender analysis of rural farmers’ savings capacity and farm investment in Southeast, Nigeria. Specifically, the study described socio-economic characteristics of the respondents; ascertained the effects of socio-economic characteristics and volumes of savings of respondents on farm investment and; estimated investment of resources in agriculture of the rural farmers and used results of the study to make recommendations on how to improve investment and savings capacity of rural farmers.

This manuscript part of my Doctor of Philosophy (Ph.D.) dissertation in Agricultural Economics (Finance and Project Analysis) from the University of Nigeria, Nsukka, Nigeria, which may be available from University of Nigeria’s library but has not been traditionally published (Ugbajah, 2012).

2. LITERATURE REVIEW

2.1 Rural Households Income and Consumption.

Household income in Nigeria is mainly studied with respect to consumption expenditure unlike data on consumption, work force and land holding, there are no serial large scale, survey based data on household incomes in Nigeria and some other countries of sub-Saharan region. Household incomes are difficult to measure with accuracy because income is a derived variable. Income estimates from households are thus subjects to certain limitations (Smeeding and Weinberg 2001). Income poverty is a major cause of deprivation and underdevelopment in Nigeria as well as in other underdeveloped countries and a major cause of lack of social opportunities.

Household consumption consists of food and non-food expenditure. Household consumption expenditure refers to all money expenses by household and individual members on goods and services intended for consumption and expenditure on services, plus value of goods and services received as income in kind and consumed by the household or individual members of the household. Non-food expenditure components consist of expenditures on housing, household durables, utilities, education, social and religious obligations, clothing, medical, care, farm expenditure and other projects. Udrey (1994), pointed out that rural farm households use remittances to mitigate risks. Households may also resort to transfers and remittance from migrant household and extended family members can be used to address unexpected changes in income. Transfers and remittance provide implicit insurance networks among families and friends (Lucas and Stark 1985). Households in developing countries face substantial risks and uncertainty in generating income to meet basic needs and social obligations. The consumption and saving behavior may reflect the mechanism they use to manage risks.
Farm budget analysis has shown that variable costs account for 90% of total farm investment in swamp rice production in Ogun State with labour accounting for 95% of total variable cost and 86% of the total cost (Aihonsu et al., 2005). Similarly, Mailumo et al., (2005) noted that in Jos, labour cost accounted for 52-54% of cost of total farm operations, pesticide accounted for 2.27% while fixed costs accounted for 10.18 percent. Another input whose cost is relatively high is fertilizer.

2.2 Savings and Investment in Agriculture.

Household savings can be cash saved in banks, cash saved at home or inventory of goods reserved for sale at a later date or for consumption. Echebiri (2001) noted that non bank cash savings accounted for 29% of rural savings in southern Nigeria, inventory of goods accounted for 50% and bank savings, 21%. The study noted that 23%, 34% and 43% of respondents preferred to have their savings in banks, non-bank cash savings/cash savings at home and inventory of goods, respectively.

Non-cash savings can take any of the following forms: acquisition of land, machinery and implements, buildings and structures, livestock and poultry, inventory and consumer durables (Desai and Mellor, 1993). It has been reported that rural farmers in Abia State preferred to save crop products than mature animals for sale or farm equipment (Mejeha and Nwagbo, 2006). The study noted that the average worth of crop produce saved was ₦110, 000.00, that of farm animals was ₦74,600 while ₦21,750 was value of farm equipment saved for resale. Ugbajah and Orji (2006), have examined savings behaviors of rural people with respect to financial institutions. They documented that 50% of males and 11% of females saved money with formal financial institutions. They noted that volume of savings and labour use were positively related. Diagne (1998) reported that, in Malawi, household welfare depended on income and access to credit which were invested to increase crop yield. Sameroynina (2005) noted that saving is an important budget item for all households, which proves that farm households do also save because other factors other than income influences saving. He also noted that a household saving was the fifth most regular expenditure item among rural farm households. The relative irregularity of farmer’s saving is as a result of relatively irregular monthly income. The permanent income hypothesis essentially has the same interpretation in saying that consumption is equal to permanent income, defined as the annuity value of the sum of current assets and the discounted present value of expected future earnings (Deaton, 1997). For a subsistence level of consumption and investment, which characterizes most households in developing counties, the marginal value of consumption may increase to infinity when consumption falls very low. People face substantial risk throughout most of the developing countries of the world. Livelihood strategies represent adaptation to uncertainty with respect to income generation and subsistence consumption. Some government policies, international trade imbalances, and macroeconomic instability generate uncertainty and compound risks to households. There are several reasons why one may be interested to study the savings capacity and its effect on investment of households in developing countries. Saving is related to growth and economic development. There is a clear link between household and national saving rates over time (Deaton, 1997).

3. RESEARCH METHODOLOGY

The study was conducted in the rural setting of Southeast, Nigeria. The area is located between latitudes 4° and 14° N and longitudes 3° and 14° E, covering a land area of about 924,000km² with a population of the country released recently showed that Nigeria has a population of over 140 million (NPC, 2007). The study was carried out in the Southeast geographical zone of the country. This is made up of five states out of the 36 states of the Federal Republic of Nigeria. The five Southeastern states are: Abia, Anambra, Ebonyi, Enugu and Imo. The area had a total population of 25.9 million, which is about 30% of the population of the country (NPC, 1991). The southeast lies in the core oil palm belt of Nigeria, is among the most densely settled area of the country with an average population density of 247 persons per square kilometer as against the national average of 96 persons per square kilometer (NPC, 1991).

During the rainy season, a marked interruption in the rains occurs during August, resulting in a short dry season often referred to as the “August break”, though for years now this has not been consistent in
August due to climate change. Temperatures are slightly lower in the humid tropical region of the southeast when compared with northern Nigeria. Similarly, humidity is lower during the Harmattan or dry season when cool dry winds blow off the desert (Okonkwo and Mbajiorgi, 2006). Seventy percent is arable land which is under cultivation. The area is situated on a fairly flat land with tropical vegetation. It has a weak soil that is easily eroded, thus accounting for over 500 erosion sites of varying depths and length (SEEDS, 2006).

Agriculture is the predominant occupation in the rural areas of the zone engaging more than 70% of the rural population. The major crops cultivated in the state are cassava, yam, rice, maize, cocoyam, oil palm, plantain/banana, beans, pigeon pea and leafy vegetables. The farming system is root crop – based and characterized by inter – crops. The choice of the area was based on the intense economic activities including agriculture. Also there is a high degree of socio – cultural homogeneity in the study area as the inhabitants are mainly Igbo, known mainly for their hard work, self – reliance and economic prowess. An important feature of the farming system in the upland areas, where there is pressure on land, is compound and homestead farms. Compound farms integrate not only arable crops and tree crops but also livestock and at times fisheries (Ugbajah, 2011). The dominant criterion for selecting southeast is the prevalence of formal and informal financial institutions in most of the rural areas of the zone.

Multistage and simple random sampling techniques were used to select respondents for the study. Stage i involved random selection of one state from the five states in the southeast. Stage ii was the random selection of one agricultural zone from the selected state. Four communities were selected from the selected agricultural zones by random sampling at stage iii. Stage iv was the random selection of 144 males and 144 females farmers from each of the selected communities to arrive at 288 respondents for the study. Data for the study were collected from both primary and secondary sources. Primary data were collected with a set of structured and pre – tested questionnaires administered to the respondents with the help of extension agents working in the selected agricultural zones. Primary data were collected on socio – economic characteristics such as age, marital status, level of education, farming experience, family size, dependency ratio, amount saved and farm and non - farm income. Secondary sources of information were from journals articles, books, conference proceedings; institutional publications and so on were accessed to complement the primary data.

Descriptive statistical methods such as means, percentages and frequency counts were used to examine respondents’ socio – economic characteristics. Analysis of variance and multiple regressions was used to estimate the relationship between respondents’ savings capacity and farm investment. The multiple regression models were explicitly specified: thus

\[ \text{SAC} = \beta_0 + \beta_1 \text{BK} + \beta_2 \text{IS} + \beta_3 \text{CAH} + \beta_4 \text{FS} + \epsilon, \]

\[ \text{Bk} = \text{bank (amount saved \( \mathbb{N} \))} \]

\[ \text{IS} = \text{isusu (amount saved \( \mathbb{N} \))} \]

\[ \text{CAH} = \text{cash at hand (\( \mathbb{N} \))} \]

\[ \text{PHYS} = \text{physical forms (Kg)} \]

\[ \epsilon = \text{error term.} \]

4. RESULTS AND DISCUSSIONS

4.1 Socio-economic characteristics of respondents

Various socio-economic characteristics of the respondents had varying degrees of effects on the respondents’ savings capacity and investment. Socio-economic variables considered in this study included age (AGE), marital status (MS), educational qualification (EDU), household size (HHS), dependency ratio (DR) and farming experience (EXP), of the respondents and is presented in Table 1. The table showed that the female respondents engaged more in farming within the age range of 41 – 50 years (42%) while the males in the same age range were 37%. This is an indication that many of the respondents were within their active productive age and this has implications on savings capacity because the age of the respondents determines the farmers’ participation in productive activities. Put differently, people save
more during their active years (productive years)). Majority of the respondents (87%) were married as marriage was one of the valued social institutions in the study area. It can be used to designate responsibility. The result is in line with Echebiri’s (2001), study which noted that majority of farmers in Southern Nigeria was married. Marital status of the respondents has implications for volume to be saved because, according to Yusuf (2008), the marital status in developing countries have contributed much to changes in the amount of savings in these areas. Majority 81% of the male respondents obtained both secondary and tertiary education while about 35.4% of the female obtained both secondary and tertiary. Education increases skill levels which are required for some rural farm and non-farm activities that contribute to increased investment and productivity (Asogwa, Abu & Ochoche, 2014). The relevance of literacy of the rural farmers lies in the importance of their production efficiency and subsequent higher levels of income that leads to increased savings.

Majority 94 percent of the respondents had acquired farming experience for about 1-25 years. This implied that the respondents had a lot of farming experience and farming experience could be an indication of farm entrepreneurial skills acquired. Experience as noted by Smeeding and Weinberg (2001), increases the rural farmer’s ability to diversify production to different enterprises as sources of increasing income and savings capacity. Many 57.3% of the respondent’s male and female had household size of 5-6. Anzaku, (2007) revealed in his study that mean household size in the north was 13.6. This could have very important implication for household income, investment and savings of the rural farmers. As noted earlier, the higher dependency ratio, the more households will consume and save less. In addition it will lead to spending relatively higher proportions of household income on food as against such essential capital development services as education, health and investment in agriculture. Given the relatively low income which constitutes the major source of household income in the rural sector, high child dependency ratio will certainly reduce both per capita disposable income, savings and investment (Adyemo and Banire, 2005).

4.2 Sources of income of respondents.

The mean annual incomes from crops were ₦65,306.71 and ₦43,489.51, males and females, respectively. While the mean annual income from animal sources were ₦174,157.06 male, ₦190,847.78 female and off farm was ₦87314.38 and ₦21,482.11 male and female respectively. This concurred with the study by Smeeding and Weinberg (2001), which noted that, male farmers’ diversify production to different enterprises as sources of increasing income to the household. This implied that diversification of sources of income increases chances of reducing dependency on farm income. This will also result to increased investment in agricultural enterprises, hence resulting in some savings either in cash or physical form.

The result also showed that, mean income from crop and off – farm sources of the male respondents was greater with the sum of ₦21, 817.20 (crops) and ₦65, 832.27 (off - farm) than that of the female farmers meanwhile the female respondents generated more income ₦190, 847.78 from animal production. However, it is at variance with Ugwumba (2011) who reported in his study greater male involvement only, in catfish production. The difference was significant with a T value of 1.978 at five percent confidence level and paired difference of ₦70, 958.75. This implied that the male respondents engage and invest more in crop production and off – farm activities than the females in the study area. This finding corroborates Akinnagbe, Agwu and Igbokwe, (2008); Adisa and Okaumade (2011) and Ugbajah and Chidebelu (2012), who reported greater male involvement in agricultural production and off – farm income activities in their study.
Table 1. Distribution of respondents according to socio-economic characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Mean</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30</td>
<td>12(8.3)</td>
<td>3(2.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>30(20.8)</td>
<td>34(23.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>53(36.8)</td>
<td>60(41.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-60</td>
<td>47(32.6)</td>
<td>44(30.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 and above</td>
<td>2(1.4)</td>
<td>3(2.1)</td>
<td>36</td>
<td>46</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>7(2.5)</td>
<td>1(0.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>122(84.7)</td>
<td>129(89.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>15(10.4)</td>
<td>14(9.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational qualification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>2(1.4)</td>
<td>27(18.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary education</td>
<td>40(27.8)</td>
<td>66(45.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary education</td>
<td>64(44.4)</td>
<td>28(19.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary education</td>
<td>38(26.4)</td>
<td>23(16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>3(2.1)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>13(9.0)</td>
<td>4(2.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-6</td>
<td>99(68.8)</td>
<td>66(45.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-8</td>
<td>29(20.1)</td>
<td>60(41.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-10</td>
<td>-</td>
<td>14(4.8)</td>
<td>40</td>
<td>13.3</td>
</tr>
<tr>
<td>Dependency Ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>56(38.9)</td>
<td>49(34.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>53(36.8)</td>
<td>58(40.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>30(20.8)</td>
<td>28(19.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>5(3.5)</td>
<td>9(6.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farming Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 25</td>
<td>136(47.0)</td>
<td>1135(46.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-30</td>
<td>4(1.4)</td>
<td>9(3.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>4(1.4)</td>
<td>-</td>
<td>40</td>
<td>16</td>
</tr>
<tr>
<td>Annual income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>118,000</td>
<td>78,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>350,000</td>
<td>280,000</td>
<td>326, 778.17</td>
<td>255, 819.40</td>
</tr>
</tbody>
</table>

*Values in parenthesis are percentages.
4.3 Mediums of savings

The respondents saved in various ways including banks, isusu, cash at hand, or inventory of goods reserved for sale at a later date. The mean savings for the male and female was ₦76,820 and ₦56,313.47 respectively. This concurred with the study by Sameronyina (2005) which noted that savings is an important budget item for all farm households. This implied that rural farmers in the study area actually save for farm investments and other purposes. The male farmers had the highest volume of savings in all the sources of savings except in Isusu, where the female respondents saved the highest amount. This concurred with the study by Ugbajah (2011), which noted that female farmers used informal financial services more than male farmers, due to a lot of bottle-necks. The relationship between volumes of savings among the respondents in various media was significant with high $R^2$ values of 80% and 86.4% male and female respectively. The result of annual savings of respondents showed significant differences in savings among male and female at the five percent probability level. This indicated that the volume of savings in banks, isusu and cash at hand, of the farmers had a joint variability. The results of test of differences between means of savings of male and female farmers was significant with a t-value of 2.663 and mean savings of ₦76,820.16 and ₦56,313.47 male and female respectively. This implied that savings media is an important variable in determining the volume saved, investment in agriculture and off-farm enterprises among the respondents in the study area.

Table 2a: Regression estimates of males’ volume of savings in various media

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Variables</th>
<th>Co-efficients</th>
<th>t-cal</th>
<th>significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bank</td>
<td>14678.96</td>
<td>6.473</td>
<td>0.010**</td>
</tr>
<tr>
<td>2</td>
<td>Isusu</td>
<td>11421.16</td>
<td>4.142</td>
<td>0.034**</td>
</tr>
<tr>
<td>3</td>
<td>Cash at hand</td>
<td>16827.46</td>
<td>5.122</td>
<td>0.050**</td>
</tr>
<tr>
<td>4</td>
<td>Food stuff (physical form)</td>
<td>28091.45</td>
<td>6.934</td>
<td>0.110**</td>
</tr>
<tr>
<td>5</td>
<td>Constant</td>
<td>-588164</td>
<td>-11.763</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note ** = Significant at 5% probability level: $R^2 = 0.803$; Adjusted $R^2 = 0.896$


Table 2b: Regression estimates of female volume of savings in various media

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Variables</th>
<th>Co-efficients</th>
<th>t-cal</th>
<th>significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bank</td>
<td>22973.97</td>
<td>5.147</td>
<td>0.000**</td>
</tr>
<tr>
<td>2</td>
<td>Isusu</td>
<td>15480.81</td>
<td>2.739</td>
<td>0.015**</td>
</tr>
<tr>
<td>3</td>
<td>Cash at hand</td>
<td>17867.03</td>
<td>3.024</td>
<td>0.008**</td>
</tr>
<tr>
<td>4</td>
<td>Food stuff (physical form)</td>
<td>-2376.09</td>
<td>-0.190</td>
<td>0.851**</td>
</tr>
<tr>
<td>5</td>
<td>Constant</td>
<td>-454136.26</td>
<td>-4.256</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Note ** = Significant at 5% probability level: $R^2 = 0.864$; Adjusted $R^2 = 0.830$


Table 3. Test of hypothesis of differences on the volume of savings by gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Paired difference</th>
<th>t-value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings (₦)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>76,820.16</td>
<td>20,506.69</td>
<td>2.663**</td>
<td>0.031</td>
</tr>
<tr>
<td>Female</td>
<td>56,313.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at 5%

5. CONCLUSION
The respondents in the study area saved in different savings media such banks, isusu, cash and in physical forms (inventory to be sold at a later date). There were differences in the volume of savings in different media. The results of test of differences between means of savings of male and female farmers was significant with a t-value of 2.663. This implied that savings media is an important variable in determining the volume saved, investment in agriculture and off-farm enterprises among the respondents in the study area.

6. RECOMMENDATION
Based on the findings, the study made the following recommendations:
- Farmers should be encouraged to engage in off-farm income enterprises to generate more income to supplement farm income to increase investment and savings.
- Encouragement of financial institutions to provide interest-free micro-credits to the rural farmers.
- Reduction of dependency ratio on farmers in combination with birth control education extended to the rural farmers in the study area.
- Extension services should be provided to educate the rural farmers on the importance of formation of cooperative groups to reduce the dependency on personal savings as a source of investment.

7. REFERENCES


