

# **The Impact of Consumption Behaviour on Farm Investment among Rural Farmers in Anambra State, Nigeria**

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## **Abstract**

*The study investigated the impact of consumption behaviour on farm investment among rural farmers in Anambra State, Nigeria. Specifically, it sought to describe the socio-economic characteristics of the respondents, examine the effect of these characteristics on farm investment and expenditure pattern of the farmers and sustainable agricultural and rural development. Multistage and simple random sampling methods were used to select 144 respondents. Primary data were collected by means of questionnaire and analysed by use of non-parametric and parametric statistical tools, including percentages, frequency distribution and Binary logistic regression analysis. Majority (96.5%) of the farmers were married, 89% were literate, 73% had above 11 years of experience in farming, 76.4% obtained between ₦ 75,000 and ₦ 160,000 as annual income, while 73% of them spend between ₦ 80,000 and ₦ 120,000 annually. Consumption expenditure was significantly influenced by marital status, educational level, dependency ratio, farm income and technology acquisition. Increased farm investment for sustainable agriculture and rural transformation and development would be ensured by acquisition of technology, extension of birth control education, provision of micro credits and engagement in off farm activities to supplement income from farming.*

**Key Words:** Impact, Consumption Behaviour, Farm Investment, Nigeria

## **Introduction**

Consumption and savings of farmers affect their welfare. Small-scale farmers who occupy the rural communities are the largest operators in the sub-Saharan agriculture economy. Echebiri (2001) reports that these rural farmers account for about 90 per cent of food production in the sub-Saharan Africa. Okorji (1989) notes that small-scale farmers supplied more than three quarters of the food produced in Nigeria. Over 80 per cent of the Nigeria populations occupy the rural agrarian base of the economy (Falusi, 2005). Unfortunately, small-scale farmers in sub-Saharan Africa are characterized by poverty. This poverty affects their consumption and investment in agriculture. Recent policies on economic reforms and rural sector transformation programme connected with increasing agricultural production and poverty alleviation in Nigeria have underscored the effects of consumption on investment. Household consumption consists of food and non-food expenditure. This is because since the introduction of the Structural Adjustment Programme Policies, government subsidy on agricultural inputs has continued to decline (Falusi, 2005).

Most often these policies and programmes are not properly implemented and adversely affect the small-scale farmers, especially the women who are the major producers of agricultural products that are supplied in our markets. This policy is regressive for the small-scale rural farmers who produce the bulk of food in Nigeria. Consumption has a negative relationship with investment. Nigeria is not producing enough food for consumption not because it does not have the potential to do so, and also export, but because the infrastructure to produce more is not in place. He further states that lack of policy framework to support the agricultural sector has been a perennial problem in the area. This has resulted in low agricultural investment among the rural male and female farmers in the country.

The inconsistencies in government policies, lack of infrastructure and political will to develop the agricultural sector has adversely affected agricultural development in Nigeria. Mkpado and Ohaka (2006) agree that provision of adequate capital/financial services to millions of needy rural farmers for sustainable agricultural investment and smoothening of consumption is important. They also note that governments of many developing countries cannot bear it alone. In the face of readily growing population which only necessitate agricultural intensification, perhaps the policy implication of low farm size inputs, will also entail making such packages not only affordable but easily

accessible to resource-poor farmers. The 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 & Mkpado, 2005).

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. Enabling farmers' full participation in programme implementation to ensure sustainable development of all sectors of agriculture will lead to poverty alleviation and increased agricultural investment and improve the living standard of the rural male and female farmers (Adeleye, 2008). In view of this, therefore, the study was undertaken to examine the comparative gender analysis of the determinants of consumption behaviours and its effects on agricultural investment. Specifically, it sought to describe the socio-economic profile of the male and female, describe consumption expenditures of the male and female farmers, and identify the effect of consumption expenditure on farm investment.

## **Materials and Methods**

The study was conducted in Anambra State of Nigeria. The State is located between latitudes  $6^{\circ} 45^1$  and  $5^{\circ} 44^1$  N and longitudes  $6^{\circ} 36^1$  and  $7^{\circ} 20^1$  E. It has two distinct seasons – rainy and dry seasons. The rainy season lasts between April and October, while the dry season starts from November to March. The temperature of the area is comparatively good with a mean of  $30^{\circ}\text{C}$  during the hottest period of February to April and  $21^{\circ}\text{C}$  during the coldest period of December to January. The soil of the area consists of clay, clay loam and sandy loam soils and is classified as hydromorphic (Duze & Afolabi, 1985; Anambra State, 1991). The annual average rainfall is between 1800mm to 2000mm and distributed through March to November.

The 2006 estimated population of 4,182,032 for the State (Federal Republic of Nigeria [FGN], 2006) makes it one of the most populous states in the South Eastern geo-political zone. The male population of 50.9% is slightly above that of the female (49.1%). It occupies an area of 4416 square kilometres and about seventy per cent arable land is under cultivation.

The number of farm families was 338,721 with average size of persons per farm family or household. There are 21 Local Government Areas in the State and 177 autonomous communities; three senatorial and four agricultural zones. The State is situated on fairly flat land with tropical vegetation. It has a weak soil that is easily eroded, though accounting for over 500 erosion site varying depth and length (SEEDS, 2006). Agriculture is the predominant occupation in rural areas engaging more than 70% of the rural population. Since a large proportion of soil in Anambra State is sandy, loose and erosion ridden, commercial level agricultural production is mainly around the riverine areas predominant in 3 out of the 4 agricultural zones of the State. The major crops cultivated in the State were cassava, yam, rice, maize, cocoyam, oil palm, plantain/banana, beans and leafy vegetables. The farming system in the state is root crop-based and characterized by inter-crops. The average holding is 0.25 hectare. An important feature of the farming system in the upland area where there is pressure on land in the compound and homestead farms. The compound farms integrate not only arable crops and tree crops, but also livestock and at times fisheries.

Multistage and stratified random sampling techniques were used to select respondents for the study. Stage 1 involved random selection of the four agricultural zones in Anambra State. Stage 2 was the random selection of two rural local government areas from the four agricultural zones. This was to ensure that the rural areas were surveyed based on a priori knowledge of dominance of farming and existence of some artisanal occupation and diversified sources of rural livelihood. Three communities were selected from the selected L.G.A. by random sampling at stage 3. Stage 4 was the stratified random selection of 36 (18 males and 18 females) from each of the rural communities afore-selected to arrive at 144 respondents for the study.

Data for the study were collected from both primary and secondary sources. Primary data were collected using a set of structured and pre-tested questionnaire administered to the respondents. Primary data were collected on socio-economic characteristics such as age, marital status, household size, educational qualification, farming experience, dependency ratio, income of the household head, amount spent in technological acquisition and non-farm income sources. Data on socio-economic characteristics of the farmers were analyzed using frequency counts, percentages and mean while binary logistic model was used for determining the effect of socioeconomic

characteristics on farm investment and consumption expenditure. The model was explicitly specified as:

$$FINV = \beta_0 + \beta_1 MS + \beta_2 EDU + \beta_3 EXP + \beta_4 HHS + \beta_5 DR + \beta_6 AMTEC + \beta_7 INC$$

+ e AMSC = amount spent on consumption (₦);

MS = marital status (dummy; married = 1, otherwise = 0),

EDU = level of education (years),

EXP = farming experience (years),

HHS = household size (number);

DR = dependency ratio, measured as the number of dependants to number

of productive individuals per household expressed as percentage;

AMTEC = amount spent on acquisition and use of any type of improved farm technology (₦ )

FINC = income of household from farm activities (₦ )

$\beta_0, \beta_1 \dots \dots \dots \beta_9$  = parameters to be estimated

$e_1$  = stochastic error term.

## Results and Discussions

The findings on the socio-economic characteristics of the rural farmers (Table 1) showed that majority (96.5%) of the farmers were married, implying that farming is the major occupation in the study area. The higher dependency ratio on the farmers implied greater burden on expenditure. These findings corroborate Echebiri's (2001) which note that majority of farmers in southern Nigeria were married.

**Table 1. Distribution of Respondents according to Socio-Economic Characteristics**

Variable profile	Frequency	Percentage
<b>Marital Status</b>		
Single	5	3.47
Married	127	88.19
Widowed	12	8.33
<b>Educational Level</b>		
No formal edu.	14	7.72
Primary	75	52.08

Secondary	45	31.25
Post Secondary	10	6.94
<b>Household Size</b>		
1-3	28	19.44
4-6	76	52.78
7-9	32	22.22
10-12	8	5.56
<b>Farming experience</b>		
Less than 10	32	26.67
11 – 15	60	50
16 and above	28	23.3
<b>Annual Income</b>		
75,000 – 115,000	75	52.08
115,001 – 155,000	35	24.31
155,001 – 195,000	25	17.36
Above 195,000	9	6.25
<b>Annual Expenditure</b>		
80,000 – 120,000	72	50
120,001 – 160,000	43	29.86
160,001 – 200,000	19	13.19
Above 200,000	10	6.94

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*Source: Field Survey, 2012*

Further findings on the socio-economic factors showed that majority 89% were literate; 73.3% had above 11 years of farming experience; 75% had household size of 4-9 persons; 76.4% earned between ₦ 75,000.00 and ₦ 155,000 as annual income, while 80% spent between ₦ 80,000 and ₦160, 000 annually. The implications of these findings are that providing the farmers access to productive resources, family planning education and credit will enable them improve their access to information (Ugbajah & Chidebelu, 2012); adopt modern technologies and skills (Agbamu, 2011), and achieve enterprise diversification (Smeeding & Weinberg, 2001). This development will enhance investment in productive enterprises and increase income of the farmers, and consequently improve agricultural investment.

Moreover, the higher dependency ratio on the farmers implied greater burden of expenditure because household heads take responsibility of providing for the family welfare. This implied that consumption has an inverse relationship with investment in agriculture and increasing the farmer's access to productive resources will increase their investment opportunities.

### Effects of the Socio-economic Factors of the Respondents on Consumption and Investment

The binary logistic analysis was used to predict the effects of socio-economic factors of the respondents such as marital status (MS), educational level (EDU), household size (HHS), farming experience (EXP), dependency ratio (DR), household size (HHS), technology acquisition (AMTEC) and farm income (FINC). Five out of the seven predictors, marital status educational level, dependency ratio, technology acquisition and farm income were statically significant at 5% probability level while the other three were not significant (Table 2).

**Table 2. Binary Logistic Estimation of Determinants of Farmers' Consumption Behaviour**

Variables	B-coefficient	S.C.	Wald Statistics	df	Sig	Exp
Marital Status	1.862	0.095	2.892**	1	0.031	6.989
Education Level	0.640	0.194	10.915***	1	0.001	0.527
Dependency Ratio	1.051	0.637	2.717**	1	0.032	0.633
In farm Income	-0.458	0.251	3.329**	1	0.022	0.403
In Farm Experience	-1.181	0.434	0.173	1	0.677	0.305
Household Size	-1.187	1.094	1.176	1	0.278	1.189
In Technology Acquisition	-0.789	0.345	5.231***	1	0.002	1.321
Constant	2.325	9.565	0.059	1	0.808	10.228

\*\*\* = sign at 1%, \*\* = sig at 5%, Cox and Snell  $R^2 = 0.623$

Vegekereke  $R^2 = 0.638$ , -2 log likelihood =

135.592 Source: Field Survey, 2012

The coefficient of education was positive and statistically significant at 5% level. This implied that higher educational level will facilitate the adoption of appropriate agricultural technologies and skills by farmers. This agrees with the findings of Agbannu and Atoma (2010) that the level of education influences participation in agricultural productive activities, adoption, transfer and application of innovations. Orji (2002) also notes that educational qualification is an important variable determining nutritional status of many families in Igbo-Etiti, Enugu State.

Marital status and dependency ratio had a positive coefficient and statistically significant relationship with investment in agriculture. By implication, higher dependency ratio entails greater consumption expenditure on household heads.

Income from farming and technology acquisition had a positive coefficient, statistically significant at 5% probability level. This implied that those farmers who obtained higher income from farming activities had the ability to diversify production enterprises. Increase in technology acquisition increased farmers' yield and subsequently income. This corroborates the findings of Smeeding and Weinberg (2001) that farmers who obtain higher farm income and modern technologies diversify investment in agricultural production more efficiently and generate more income.

Output of the binary logistic analysis showed an  $R^2$  value of 0.64. This implied that about 64% of the variance in agricultural investment by the respondents was accounted for by joint actions of the seven independent factors while the rest 35% was due to error. The overall binary logistic analysis result was significant as chow test value of 13.25 was significant at 5% level of probability and greater than the tabulated 2.32.

Famers in the area encountered some problems which hindered them from full participation in agricultural production for poverty reduction. These problems include poor access to information and credit facilities, improved inputs and technologies, micro finance institutions, small farm holdings and lack of extension services, family responsibilities, environmental problems, low market prices, rising cost of production and other problems. Poor access to information has been noted to have constrained the adoption of conservation technology by farmers, in Bangladesh family responsibilities was among the major problems. This corroborates what Igwilo (2012) avers, that family

responsibilities are among the major causes of default in repayment of loans by farmers in Awka North Local Government Area of Anambra State, Nigeria.

## **Conclusion and Recommendations**

Most farmers in Anambra State cannot invest in agriculture because of restrictions associated with consumption expenditure due to inability to diversify production, family responsibilities and the farmers' exclusion in the design, implementation and evaluation of agricultural development and micro credit policies, plans and programmes. There is need to adopt strategies identified by this study, especially involving the end users (farmers) in the planning and implementation of policies and programmes; expansion of extension services; and the provision of adequate social infrastructures to enhance productivity, income and hence agricultural investment among farmers.

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