

Comparative Analysis of Expenditures of Male-Headed and Female-Headed Cassava-Based Farm Households in Umuahia Agricultural Zone of Abia State, Nigeria

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Abstract

The study analyzed expenditures of male-headed and female-headed cassava-based farm households in Umuahia Agricultural Zone of Abia State, Nigeria. The specific objectives of the study were to: describe socio-economic characteristics of male-headed and female-headed cassava-based farm households in the study area; analyze budget share and expenditure elasticity in male-headed and female-headed cassava based farm households and analyze determinants of expenditure in male-headed and female-headed cassava-based farm households' in the study area. Multi-stage random sampling technique was used in selection of 70 male-headed and 70 female-headed cassava-based farm households, from whom data were elicited using structured and pre-tested questionnaire that was self-administered. Data were analyzed using descriptive statistics, budget shares and expenditure elasticity analysis and Ordinary Least Square (OLS) multiple regression model. The budget shares and expenditure elasticity analysis revealed that Marginal Budget Share (MBS) was higher than the Average Budget Share (ABS) in expenditure items of shelter, health, clothing, education and utilities in male-headed cassava farm households. Similarly, the MBS was higher than the ABS for some expenditure items (shelter, health, education and utilities) in female-headed farm households. The result of OLS multiple regression estimation revealed that expenditures in male-headed cassava farm households were influenced by age, level of education attainment, household size and income. While, expenditures in female-headed cassava farm households were influenced by farm size, age, educational level and access to credit. Special recognition should be made in providing for clothing expenditure in both male-headed and female-headed households to alleviate poverty and improve the living standard of women in farm households.

Keywords: Expenditure, Male-headed households, female-headed households, Cassava, Farmers

1. Introduction

Cassava contributes importantly to the income and food security of the rural economy on account of its capacity to produce reasonable yield under marginal soil conditions and its tolerance of drought (Osondu *et al.*, 2014). Cassava is a more widely cultivated crop in Nigeria both by male-headed and female-headed farm households. This crop is grown mainly by poor subsistence farmers with women being largely responsible for its processing into different products. Majority of cassava farming households in Nigeria depends predominantly on farming activities for generation of income and survival, but sometimes they engage on non-farming activities to supplement their farm income (Odoemenem, 2013). The farm and non-farm activities of the cassava farming households are complementary to each other and have production and expenditure linkages. Linkages between the farm and non-farm sectors of the rural economy are obvious when considered in terms of flow of goods and services. This means that the non-farm sector makes use of agricultural output and generated income and these are spent on products in the other sectors/activities. Thus, the nature and performance of local agriculture go to affect the development of rural non-farm sector in different ways and vice-versa (FAO, 1995).

Within all countries of the world, there are socio-economic and demographic influences affecting farm households' income and patterns of their expenditure. Among these factors are their population, number of households and associated data, value of their Gross Domestic Product, annual inflation, and employment indicators (Euromonitor, 2012). Expenditure patterns have been found to change across the income spectrum. Poor farm households in Nigeria tend to spend a large share of their incomes and increments to incomes on food items, while richer farm households earning higher income spend greater portions of their income on manufactured goods and preferred foods such as dairy products, meat and fruits (Delgado *et al.*, 1998). Household budget surveys in different parts of Nigeria consistently show purchase of basic foods as the main consumption expenditure item in the country (Umeh and Asogwa, 2012). Having such a high share of food consumption in the country implies that exogenous income growth has great potentials to pull underutilized resources into the food sector (Delgado *et al.*; Umeh and Asogwa, 2012).

Gender consideration on income and expenditure activities is an integral and inseparable part of rural livelihood. Men and women have different assets, access to resources, opportunities and different income as well as expenditure. Women rarely own land, may have lower education due to discriminatory access girl child to learning and different access to productive resources as well as participation in decision-making (Oluwatayo,

2009). In Nigeria and most developing countries of the world, monthly expenditure of farm households is low due to low levels of incomes. Most farm households have limited resources, a factor that limits their production, income and expenditure. However, much attention has been drawn to the feminization of poverty in recent years which is reflected in the expenditure pattern of female headed households. World Bank (2002) reported that unequal access to resources has made rural poverty to be almost synonymous with women. The current economic conditions in Africa have adversely affected both male-headed and female-headed Nigerian households with female-headed households being the worst affected as they live in high levels of poverty. The international Fund of Agricultural Development (IFAD) estimates that the number of women-headed households in rural communities living below the poverty line rise more than the number of households headed by men.

Studies that investigated the variation in expenditure of male-headed and female-headed households are not common. However, there have been investigations on: determinants of food expenditure of farm households (Umeh and Asogwa, 2012); Consumption expenditure and female poverty (Juliana and Lampietti, 2010); Disaggregated Engel function analysis of income and expenditure among Nigerian small scale farmers (Umeh and Asogwa, 2012); Empirical analysis of change in income on private consumption expenditure in Nigeria from 1981 to 2010 (Akekere and Yousuo, 2012). In spite of the above studies on expenditure, there is little comparative empirical evidence of expenditure between male-headed and female-headed farm households in Nigeria. This gap has tended to adversely affect getting adaptive agricultural policies aimed at reversing deteriorating poverty gap among male-headed and female-headed farm households. This study, therefore, seeks to: (i) describe socio-economic characteristics of male-headed and female-headed cassava-based farm households in the study area; (ii) analyze budget shares and expenditure elasticity in male-headed and female-headed cassava-based farm households in the area; and (iii) determine and compare factors that influence expenditure in male-headed and female-headed cassava-based farm households in the study area.

2. Literature Review

2.1 Overview of Gender in Farm Household Headship

Rural households are fragmented into farm and non-farm based on the degree of involvement in their profession and where larger percentage of the households income accrue from (Ibe and Nnadozie, 1999). Households that devote resources primarily to agricultural activities such as crop farming, livestock husbandry, fisheries and agro-forestry are termed farm-households. Moranda *et al.*, (2001) contend that these households are composed of relatives and or other persons living together under a single roof and eating from the same pot who share the community life for reasons of work or other consideration. Also, persons who share and take meals together but live on separate but adjacent living quarters are also members of same household, while people who live alone are considered a separate household.

The headship of a farm household is usually identified with the person who has the greater authority in the family or household. A household is called male or female-headed household when a male or female has the power and authority to control the general affairs of the household unit, including decision-making concerning economic, social and political interactions (Illo, 1989). Illo, (1989) further asserts that while women are recognized as potential household heads in reality men are most often ascribed the headship position, a practice that still subscribes to the patriarchal view that men provide for the family while women nurture it. Thus, headship may be assigned without due regard to the actual economic contributions of the female members.

Two different types of female-headed household have been identified in the literature. These are the *de jure*, where the female head belongs to one these categories single, widowed, divorced or separated, and the *de facto*, where the head is the wife of a male migrant. Of the two the *de facto* headship is usually more temporary in nature since the man will automatically assume the headship whenever he is around. Even while away, some vital decisions have to be referred to him for his final decision. A variant of the *de jure* type is the case where widowed mother is living with her son and his family. In such cases, the married son will often designate his mother as head of the household out of respect. This does not mean that she has major decision-making power (IFAD, 1999).

Some generalizations are made about female-headed households. The first is that in almost all countries, they are concentrated among the power strata of society and often have lower incomes than male headed households (Buvnic and Gupta, 1997). The second general opinion associated with female-headed households is that they are more prominent in the rural areas (Dreeze and Srinivassan, 1997).

2.2 Concept of Household Expenditure

Consumer goods and services are those used by a household to directly satisfy the personal needs and wants of its members. Household consumption expenditure is the value of consumer goods and services acquired, used or paid for by household through direct monetary purchases, own-account production, barter or as income in-kind for the satisfaction of the needs and wants of its members (ILO, 2003).

Household expenditure is also defined as the sum of household consumption expenditure and the non-consumption expenditures of the household. The latter are those expenditures incurred by a household as

transfers made to government, non-profit institutions and other households without acquiring any goods or services in return for the satisfaction of the needs of its members. Household expenditure represents the total outlay that a household has to make to satisfy its needs and meet its legal commitments.

3. Research Methodology

3.1 The Study Area

The study was conducted in Umuahia Agri cultural Zone of Abia State, Nigeria. The zone lies between Latitudes 05° 30' N and 05° 40' North of the Equator and Longitudes 07° 25'E and 07° 32' East of the Greenwich Meridian. The zone consists of five Local Government Areas (LGA's) namely: Ikwuano, Isiala Ngwa North, Isiala Ngwa South, Umuahia North and Umuahia South,. The zone is bounded by Obowo LGA in Imo State at the western border; Bende LGA at the East, Osisioma Ngwa LGA in the south and Isiukwato LGA at the North. The zone has a generally undulating terrain with tropical rain forest vegetation (ASEPA, 1996). The area is noted for her vast agricultural activities and crafts. Being agrarian in nature, oil palm, raffia palm, cocoa, citrus (oranges), kola nuts, banana/plantain and pineapple are grown as cash crops; while cassava, yam, maize, rice, okro, cocoyam, cucumber and sweet potatoes are grown on small-scale as food crops in the area.

3.2 Sampling Technique

Data for this study was collected using multi-stage random sampling technique. In the first stage, three (3) LGAs were randomly selected from the five LGA's that make up the agricultural zone. The selected LGAs were Ikwuano, Isiala Ngwa South and Umuahia North. In the second stage, two autonomous communities were selected randomly from each of the three selected LGAs, making a total of six (6) autonomous communities. The selected communities were Ibere, Ariam, Ama-Asaa Nsulu, Ovungwu, Ibeku and Afara ukwu. This was followed by a random selection of two villages from each of the selected communities, making a total of 12 villages. From each chosen village, a random selection of (6) male-headed cassava-based farm households and (6) female-headed cassava-based farm households was done using a list formulated with help of natives. This gave 144 cassava- based farm households (consisting of 72 male-headed and 72 female-headed cassava-based farm households) sampled for the study. However, 140 filled out copies of pretested questionnaire were found usable and were used for analysis.

3.3 Method of Data Collection

Primary data was elicited by use of the pre-tested structured questionnaire for the study. The questionnaire was administered on both female-headed and male-headed cassava-based farm households during a survey. Fortnightly panel data on consumption expenditure were generated from the survey. Data collection lasted from month of March to August, 2014.

3.4 Method of Data Analysis

A number of statistical tools were employed in analyzing data from the survey. Descriptive statistics such as frequencies, tables, means and percentage were used in analyzing objective (i). Marginal Budget Share (MBS), Average Budget Share (ABS) and expenditure elasticity (Ci) models were used in analyzing objective (ii). Ordinary Least Square (OLS) multiple regression model was used in finding determinants of household expenditures (objective iii).

3.5 Model Specification

The marginal Budget Share (MBS), Average Budget Share (ABS) and expenditure elasticity (Ci) models for the ith commodity as used by Okoruwa (2000) were specified as follows:

$$MBS_i = dE_i/dE = \beta_i + \gamma_i (1 + \log E) + \sum_j n_{ij} Z_j \quad \dots \quad (1)$$

$$ABS_i = S_i \quad \dots \quad (2)$$

$$C_i = MBS_i/ABS_i \quad \dots \quad (3)$$

The MBS, ABS and expenditure elasticity (Ci) on food, farming, health, education, shelter and consumable items were examined. The ABS measured the percentage of total household expenditure going to a group of goods. A high percentage suggests that response to income for that group is relatively important. ABS was derived directly from the expenditure data for each sub-sample of interest. The MBS measured the percentage additions to income that were allocated to the consumer goods in question. Being the practical equivalent of the marginal propensity to consume a given group of goods, it measured the direct impact of income changes on the consumption of the goods in question. An MBS that is lower for a given group of goods than the ABS for the same group of goods implies that the relative importance of that commodity in consumption of that basket decreased as income (that is total consumption) increases. In such cases, demand is income inelastic. The expenditure elasticity (Ci) measured change in expenditure/consumption associated with a proportionate change in income.

The multiple regression expenditure model for the determinants of expenditure in male-headed and female-headed cassava-based farm households' was explicitly stated as follows;

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + e_i \dots \dots \dots (4)$$

Yi = Total monthly expenditures of male-headed or female-headed cassava-based farm household (₦)

- X_1 = Age (years)
 X_2 = Household size (number of persons feeding from same pot)
 X_3 = Farm size (hectares)
 X_4 = Education level (number of years spent in formal school)
 X_5 = Average monthly household income (Naira)
 X_6 = Monthly household Savings (Naira)
 X_7 = Access to credit (Yes = 1, No = 0)
 e_i = Stochastic error term.

4. Results and Discussion

4.1 Socio-Economic Characteristics of Respondents

The Socio-economic profile of male-headed and female-headed cassava-based farm households in Umuahia Agriculture Zone is presented in Table 1. The Table shows that the mean age of male heads and female heads of cassava-based farm households was 54.09 and 46.42 years respectively. Though mean age of both groups are within the national active productive work force age of 18 to 65 years. The result indicated a rather increasing number of aging male heads of cassava-based households, with middle aged female heads of cassava-based households. This has negative implication on agricultural production on account of declining ability of aged segment of the population in effectively withstanding the rigours, strain and stress involved in cassava production (Onyenucheya and Ukoha, 2007).

In terms of marital status, Table 1 showed that 57.1% and 24.29% of the male heads and female heads of cassava-based farm households were married respectively. The gender status, of cassava-based farm households reveals that 48.57% and 5.71% of the female heads of cassava-based farm households were widowed and divorced respectively. In like manner, 22.9% and 1.4% of male heads of cassava-based farm households were widowed and divorced respectively. In terms of level of education attainment, Table 1 showed that 35.7% and 47.12% of male heads and female heads of cassava-based farm households had secondary school education, respectively while 15.0.0% and 7.14% of the respective gender heads had primary education. The table further showed that appreciable percentage (28.6.7% and 30.0%) of male heads and female heads of cassava-based farm households in the study area had tertiary education. The ability to read and write often acquired from formal educational institutions would enable them effectively and efficiently utilize whatever resources at their disposal. Formal education enhances the sourcing and utilization of information on improved technology by farmers which tend to positively influence productivity and farm income (Osondu and Ijioma, 2014).

In terms of the farm sizes, Table 1 showed that the mean farm size of male-headed and female-headed farm households were 2.07 hectares and 1.61 hectares respectively. This is a clear indication that the female-headed cassava-based farm households in the area operated on relatively small marginal farm lands. This is because in the study area, the right of women in accessing and owning farmland is limited when compared with those of men on grounds of customs and prevailing patrilineal systems of land ownership (Aluko and Amidu, 2006). This has remained so in spite of the interventions of the 1978 Land Use Act. Women land user rights often follow marriage, rather than inheritance. Increasing the farm sizes to women will lead to gains through economies of scale (Onyebinama, 2004).

Table 1: Distribution of Male-heads and Female-heads of Cassava-based Farm households by Socio-economic characteristics in Umuahia Agricultural Zone of Abia State, Nigeria

Variables	Male heads		Female heads	
	Frequency	Percentage	Frequency	Percentage
Age (Years)				
30-40	16	22.28	29	41.43
41-50	19	27.14	23	32.86
51-60	24	34.29	12	17.14
Above 60	11	15.71	6	8.57
Mean	54.09		46.42	
Marital status				
Single	13	18.60	15	21.43
Married	40	57.1	17	24.29
Widow (er)	16	22.9	34	48.57
Divorced	1	1.4	4	5.71
Educational status				
No formal Education	14	20.0	11	15.71
Primary education	11	15.7	5	7.14
Secondary education	25	35.7	33	47.12
Tertiary education	20	28.6	21	30.0
Farm size (Ha)				
<1	25	35.71	33	47.12
1-2.0	16	22.86	19	27.14
2.1-3.0	8	11.43	7	10.00
3.1-4.0	11	15.43	4	5.71
Above 4	10	14.29	7	10.00
Mean	2.07		1.61	
Total	70	100.00	70	100.00

Source: Field Survey, 2014.

4.2 Budget Shares and Expenditure Elasticity in male-headed and Female-headed Cassava-based Farm Households

The average budget shares, marginal budget shares and expenditure elasticity for the selected disaggregated expenditure groups of male headship and female headship of cassava-based farm households are presented in Table 2. The Average Budget Share (ABS), which measures the percentage of household income spent on goods, showed that under both gender household headships food gulped (29.45% and 24.63%), education (25.18% and 30.37%) and shelter (11.42% and 16.54%) as highest in male-headed and female-headed cassava-based farm households respectively. Food was thus more relatively important amongst other expenditure items. A total expenditure (₦91, 007.2) in male-headed cassava-based farm households was low compared to the total expenditure (₦105, 189) in female-headed cassava-based farm households suggesting that male-headed households were more frugal and thrifty and could be more investment minded.

The Marginal Budget Share (MBS) (which measures the unit additions to total income that are allocated to the disaggregated expenditure items) indicates that among male-headed cassava-based farm households, for every one naira increase in income 0.1509 kobo was spent on food; 0.35 kobo was spent on education; 0.0859 kobo was spent on health; 0.086 kobo spent on cloths; 0.1654 kobo spent on shelter and 0.0271 kobo spent on farming. Similarly, for every one naira increase in income of female-headed cassava-based farm household, 0.1150 kobo was spent on food; 0.3510 kobo spent on education; 0.1213 kobo spent on health; 0.0702 kobo spent on cloths; 0.290 kobo spent on shelter and 0.0122 kobo spent on farming. The implication is that the households were highly prone to spending additional income on education, shelter and food. This suggests that they had high marginal propensity to consume more food, and spend more on education and more on shelter for every naira increase in the income of both male-headed and female-headed cassava-based farm households. These positive propensities to spend suggest that both male-headed and female-headed cassava-based farm households in the study area had many dependants (younger children and aged) who constitute some filial responsibilities. This finding is in consonance with the observation of Agbola *et al.*, (2004) that for every naira increase in income, the level of responsibility gap gets reduced.

The expenditure elasticity (ci), which measures the change in consumption associated with a proportionate change in income showed that among the male-headed cassava-based farm households, the expenditure elasticity for food, transportation and farming were all less than unity. The implication is that proportionate change in income led to a less than proportionate change in expenditure on food, transportation and farming. Thus, male-headed cassava-based households were able to generate savings from budgets for food, transportation and farming. The expenditure elasticity for shelter, health, cloths, education, and utilities were all more than unity,

indicating that a proportionate change in income led to a more than proportionate change in expenditure on shelter, health, cloths, education and utilities. Among the female-headed cassava-based farm households, the expenditure elasticity for food, cloths, transportation and farming were all less than unity, implying that a proportionate change in income led to a less than proportionate change in expenditures on food, cloths, transportation and farming. Thus, the female-headed cassava-based households were able to generate savings from budgets for food, cloths, transportation and farming. The expenditure elasticity for shelter, health, education and utilities were all more than unity, indicating that a proportionate change in income of female-headed cassava-based farm households led to a more than proportionate change in expenditure on shelter, health, education and utilities.

The study showed that in male-headed cassava-based farm households the MBS was lower than the ABS for some expenditure items (food, transportation and farming), suggesting that the relative importance of these commodities in the consumption basket decreased as income increased. This indicated that demand for these commodities was income inelastic among the farm households under different gender leaderships. Similarly, the MBS was lower than the ABS for some expenditure items (food, cloths, utilities and farming) in female-headed cassava-based farm households, suggesting that the relative importance of these commodities in the consumption basket decreased as income increased. This indicates that demands for these commodities are income inelastic among the farm households. Further, Table 2 revealed that in male-headed cassava farm households the MBS was higher than the ABS in expenditure items like shelter, health, cloths, education and utilities suggesting that the relative importance of these commodities in the consumption basket increased as income increased. This indicates that demands for these commodities are income elastic. The implication is that the households spent large share of their incomes on necessities, confirming them to be poor (Todaro and Smith, 2009). The poor tend to spend additional income on improved nutrition, education for their children, improvements in housing conditions, and other expenditures that may represent investment rather than consumption. This seems not to be in agreement with evidence from earlier studies: Agbola *et al.*, (2004) who found that increase in the level of households income increased the capacity of farming households to consume more, especially of foods that are not produced by the household; Delgado *et al.*, (1998) who observed that poor people in Africa and Asia tend to spend large share of their incomes and increments to incomes on starchy staples, while higher income earning rural households spent a greater portion of their incomes on manufactured goods and preferred foods such as dairy products, meat and fruits; and Onkoruwa (2000) who in southwestern Nigeria found that there was increased expenditure on higher qualitative foods (protein based diet) and basic necessities of households (clothing and education) as household income rose.

Table 2: Budget Shares and Expenditure Elasticity of Expenditure Items among Male-headed and Female-headed cassava-based farm households in Umuahia Agricultural Zone of Abia State, Nigeria

Expenditure groups	Male- Headed			Expenditure elasticity (Ci)	Female- Headed			Expenditure elasticity (Ci)
	Mean value	Average budget share (ABS) (%)	Marginal budget share (MBS) (%)		Mean value	Average budget share (ABS) (%)	Marginal budget share (MBS) (%)	
Total household	91,077.2	100	100	-	105189	100	100	-
Expenditure								
Food	26825.7	29.45	15.09	0.51	25911.4	24.63	11.50	0.47
Shelter	10400	11.42	16.54	1.45	16328.6	15.52	20.50	1.35
Health	7168.6	7.87	8.59	1.09	9040	8.59	12.13	1.41
Cloths	6972.9	7.66	8.61	1.12	8128.6	7.73	7.02	0.91
Education	22932.9	25.18	35.0	1.39	31950	30.37	35.10	1.16
Transportation	5337.1	5.86	5.68	0.97	8725.7	8.30	8.22	0.99
Utilities/ durables	4217.1	4.63	7.78	1.68	3700	8.30	3.89	1.11
Farming	7222.9	7.93	2.71	0.34	1404.3	3.52	1.22	0.91

Source: *field survey, 2014.*

4.3 Determinants of expenditures in male headed and Female-headed Cassava-based Farm Households

The OLS multiple regression estimates of factors that influenced expenditures in male-headed cassava farm households in Umuahia Agricultural Zone of Abia State, Nigeria is shown in Table 3. The Table was formed after comparing functional forms (linear, exponential, semi-logarithmic and double logarithmic) of the model. Comparatively however, exponential functional form gave the best fit to the data under both male and female leadership. In male-headed cassava-based household the R-Squared explained 82.55% of the total variation in the expenditure while in female-headed cassava-based household the R-square explained 95.3% of the variation

in expenditure. The coefficient of age (309.6089 male-headed) and (0.1182556 female-headed) were positive and statistically significant at 90.0% confidence level. This showed that as age of the male head of cassava-based farm household increased, household expenditures increased. This was plausible because aged household heads stand to maintain dilapidating household structures, and pay high hospital bill. This result runs contrary with Ezeh, (2007) who opined that increase in age of household head decreased household expenditure because of the need to be thrifty and frugal in order to meet competing economic needs. The coefficient of educational level (0.2602364 female-headed) was positive and statistically significant at 1.0% risk level. This showed that an increase in educational attainment meant increased in expenditures of female-headed farm households. The ability to read and write confers on farmers the prudence to effectively utilize whatever resources at their disposal. The total expenditure of cassava-based farm households managed by male heads was sensitive to their years of formal education and was statistically significant at 1.0% risk level. The ability to read and write confers prudence on the farmers in better utilizing whatever resources that is available. These are in conformity with Ezeh (2007).

The coefficient of farm size (0.8000499 female-headed) was positive and statistically significant at 99.0% confidence level. This showed that as farm size increased, the expenditures of female-headed farm households increased possibly on more farm inputs (variable and fixed), hence increase in expenditure (Onwuka , 2005; Akinola and Young ,1991 and Oputa , 2005). The effect of farm size on expenditure was felt by female-headed households and not the male-headed households. This was not unconnected to the fact that males had ability to adjust sizes of their farms as the need arise which women under patriarchal system of land ownership do not. The positive coefficient of household size (5668.72 male-headed) was statistically significant at 1.0% risk level. This shows that increase in household size of male-headed farm households increased expenditure as all members of the household were provided for. This is in line with Njoku and Odii, (1991) that households with large family sizes are more likely to spend more in financing consumption and other basic households' requirements. Surprisingly, women managerial expertise suppressed the effect of this variable on household expenditure. The coefficient of access to credit also gave a positive coefficient (0.7452831 female-headed) and was significant at 10.0% alpha level, indicating that a unit in farm credit accessed by female-headed cassava farm household meant increase in expenditures. This finding is in line with a *priori* expectation. Access to credit is one condition needed to raise agricultural productivity and income (DBSA, 2005), hence increase in expenditure. The coefficient (0.0412443 male-headed) of monthly income in the model was positive and statistically significant at 90.0% confidence level. Expectedly, expenditure of male-headed farm households increased as their resource holdings (incomes) increased and sustained. Hence, the male-headed cassava-based farm households in the study area were indeed displayed rational economic behaviour.

Table 4: OLS Multiple Regression Estimates of factors influencing the Expenditures in Male-headed and Female-headed Cassava farm households Compared in Umuahia Agricultural Zone of Abia State Nigeria

Independent Variable	Female-Headed	Male-headed	Remarks
	Exponential+	Exponential+	
Constant	12.22762*** (31.88)	88240.29*** (4.83)	
Age	0.1182556*** (1.58)	309.6089* (1.58)	
Education	0.2602364*** (6.09)	1412.762*** (2.94)	
Farm size	0.8000499*** (3.96)	1537.982 (0.64)	Suppressed in male-led homes
Access to credit	0.7452831* (1.61)	1715.601 (0.30)	
Household size	0.1324341 (0.96)	.5668.72*** (3.18)	Suppressed in female-led homes
Monthly savings	1.36e-06 (0.84)	0.0069573 (0.74)	
Monthly income	-4.94e-06 (-0.86)	0.0412443* (1.69)	
R square (R ²)	0.9531	0.8255	
Adjusted	0.9488	0.8061	
F – ratio	18.48***	42.58***	

Source: Field survey, 2014.

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

Figures in parentheses are the t-ratios; + = Lead equation.

5. Conclusion and Recommendations

The research has shown that in male-headed and female-headed cassava-based farm household the MBS was higher than the ABS in expenditure items like shelter, health, education and utilities. This suggests the relative importance of these commodities in terms of income elasticity or response of demand to them as income changes. The only expenditure item in which the MBS was higher than the ABS in female-headed cassava-based household and not in male headed household was cloths. Women expenditure in clothing outstrips that of men. Age, education level, household size and monthly income were positive significant determinants of male-headed household's expenditure, while, age, education level, farm size and access to credit were positive significant determinants of female-headed household's expenditure.

Special recognition should be made in providing for clothing in both male-headed and female-headed households to alleviate poverty and improve the living standard of women in farm households. The married female household heads seem to have some access to extra financial, moral and physical supports from their spouse that could go a long way in improving their production activities.

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