

Understanding Food Expenditure Systems among Households in Nigeria: A Case Study of Nsukka Area, Enugu State

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Abstract

A pragmatic understanding of demand response to prices, total expenditures, and other economic factors is quite important for developing sound policy, especially when the policy is precisely related to food consumption. The study therefore, focused on the analysis of food expenditure systems among households in Nsukka LGA, Enugu State, Nigeria. This was achieved by describing the socio-economic characteristics of the households, describing the expenditure share of each food consumed by the households, describing the subsistence share of each food consumed by the households and determining the effects of the socio-economic characteristics on household food expenditure. Data were collected mainly from primary sources using well-structured questionnaires and personal interview methods. Seventy-eight respondents were randomly selected using multistage sampling technique. the study shows that at 1

Index terms—

1 Introduction

he country faces an impending food security catastrophe with a rising population that is increasingly reliant on imported foods. In order to monitor improvement towards hunger annihilation in a sustainable manner, as proposed in the Sustainable Development Goals, there is a need for indicators that identify who is food insecure and provide adequate related information (Ike, Jacobs, & Kelly, 2015). The once center subsistence-oriented farm economy is at risk of gradual relegation. This has resulted in a decrease in the amounts of foods consumed and/or the substitution of higher priced foods for less expensive foods which are often less nourishing. Insecure land tenure, insufficiency of funds and credit, labour scarcity despite global high unemployment and stagnant technology have crippled its further growth. The problem of economic downturn has affected food consumption severely through increase in food price and reduction in real wage, therefore, there is need to scrutinize food security. Over an extended period, such changes may have undesirable significances on nutrition, both through the quantity of foods consumed for maintaining energy balance as well as for the quality of foods consumed for maintaining sufficient intakes of proteins, fats and micronutrients such as vitamins, minerals and trace elements (Thompson, 2014). From the above viewpoints, it can be implied that food crisis can arise when at a point in time it is no longer possible for people to have access to food or even have the capacity to purchase it. Currently, the situation seems to be the case in Nigeria and somewhere else in Africa (Eme, Onyishi, Uche, & Uche, 2014). Also, how households' food purchasing behavior respond is of strong curiosity both because food is a large share of households' total spending and because changes in food purchasing behavior can have important implications for diet.

Researchers like Olorunfemi (2011), Donkoh et al., (2014), and Babalola and Isitor (2014) worked on the economic analysis of household food demand, food expenditure and its effects on welfare and determinants of food expenditure in Lagos state, Nigeria. In their study, they identified the determinants of food expenditure

among urban households in Lagos Mainland Local Government Area of Lagos State, Nigeria. Olorunfemi (2011) worked on the economic analysis of household food demand in Southwestern Nigeria, examining the household food demand in south-west. Donkoh et al. (2014) in their work on food expenditure and household welfare in Ghana, investigated the determinants of household food expenditure and its effects on welfare. Little or nothing has been done on analyzing food expenditure systems in Nigeria and particularly in this study area. This study will be used to fill the gap in the research works mentioned above such as Olorunfemi (2011), Donkoh et al., (2014), and Babalola and Isitor (2014) who worked on the economic analysis of household food demand in Ghana, and food expenditure and its effects on welfare and determinants of food expenditure in Lagos state, Nigeria respectively.

A pragmatic understanding of demand response to prices, total expenditures, and other economic factors is quite important for developing sound policy, especially when the policy is precisely related to food consumption. Such policies and the method of conscripting them can benefit from this study for the purpose of enhancing economic growth (Ojonta, 2012). Therefore, the findings from this study would be very informative to specific policies that are meant to discourse disparity. The findings of this study would be ingenious for policy formulation towards assuaging poverty among household groups in Nigeria; for the study will support policy makers working towards sustainable development in Nigeria in the process of trying to recognize the variables affecting household consumption expenditure.

Apart from this study being useful to policy making, the following are other possible beneficiaries from the findings of this study: Non-Governmental Organizations (NGO) can use the findings of this study as a foundation for conducting sponsorship on the promotion of good health of the poor and the needy through providing health care for household. Some of the NGOs like Lift Above Poverty (LAPO), Grassroots Empowerment Network (GEN), and Total Health Organization (THO) may find the outcomes of this study to be of much direct significance. Therefore, the study will be guided with the following research questions: What is the expenditure share of household food? What is the expenditure share of each food class consumed the households? What is the subsistence share of household food? What are the effects of socio-economic characteristics on household food expenditure?

The broad objective of the study is to determine the level of household food consumption and expenditure of various households in Nsukka LGA.

2 II.

3 Methodology a) Study Area

The study area is in Enugu state, Nigeria. Enugu State is in South-east Nigeria. It derived its name from the word "Enugwu" which means "top of the hill". Enugu is regarded as the oldest urban area in the Igbo speaking area of South-east of Nigeria. (2006). Rainfall distribution is between 168mm -1700mm. The area has tropical climates marked by two seasons. The vegetation is of derived savannah and people in this area are predominantly farmers; farming constitutes their economic activities.

4 b) Sampling techniques procedures

The respondents for the study constituted the household in selected communities of the study area. A multistage sampling technique was used in selecting respondents for the study. First, eight (8) towns (four urban and four rural) was randomly selected from the local government area. Secondly, ten respondents were selected from each town which made it a total of eighty (80) respondents for the study.

5 c) Data Collection

Data for this study were obtained from primary sources. The primary data was obtained using structured questionnaires as a guide for interviewing respondents in the study area. Also, observations were used to complement the data collected. The data was focused on such information as the socio-economic characteristics of household consumers, the amount of food consumed and, classes of food, main source of (subsistence or purchase), food expenditure.

6 d) Data Analysis

Descriptive and inferential statistics such as percentages, frequency distribution and multiple regression analysis was used to achieve these objectives.

Objective (i), (ii), and (iii) was achieved using descriptive statistics such as percentage and frequency distribution. The distributions described the socioeconomic characteristics of the household consumers, described the expenditure share of each food, and described the subsistence share of food consumed by the households.

Objective (iv) was achieved using multiple regression analysis.

7 e) Model Specification

Multiple regression was used to determine the variables that have effects on household food expenditure, which is given as: $C = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, e)$

Where; C = household food expenditure (in naira) X 1 = Household size (number of persons) X 2 = Gender of household head (male = 1, Female = 0) X 3 = Age of household head X 4 = household income (in Naira) X 5 = Subsistence share (yes= 1, no=0) X 6 = Level of education (higher education = 1, lower education = 0) X 7 = Primary occupation of Household head (Farmer = 1, Others = 0) e = error intercept III.

8 Result and Discussion

9 a) Socio-Economic Characteristics of the Respondents

Studying the socio-economic characteristics of the households are important when considering the household food expenditure decision making. The socio-economic variables considered in this study are the age of the respondents, sex, marital status, level of education, religion, number of years spent in school, primary occupation, secondary occupation, religion, household size, household income per month, household food expenditure per month and the total household expenditure per month.

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Table ??.1 shows that the majority (62.0%) of the respondents were males and 38% of the respondents were female. This finding shows that the household heads are mostly males.

The table shows that most of the respondents (54%), fall within the age range of 30-50 years, (27.1) falls within 51-70, (15%) and (3.9%) are < 30years and > 70years respectively. This implies that the respondents are in their active years. This findings prove that most households heads falls within the age range of 30-50years (Babalola & Isitor, 2014).

In terms of their marital status, the table shows that (70.5%) of the respondents were married, (16.7%) were single, (11.5%) were widowed and (1.3%) were divorced. This implies that majority of the respondents were married and are therefore, expected to be able to face the responsibilities of taking care of the consumption needs of their family.

Table ??.1 shows that only 7.7% of the respondents had no formal education, 6.4% had primary education, 37.2% had secondary education and 48.7% had tertiary education. This implies that most of the respondents were literate and can manage the food expenditure of their household.

Table ??.1 shows that majority (43.6%) of the respondents spent above 16years in school, 32% spent 11-15years, 16.6% spent 6-10 years and 7.7% spent 0-5 years in school. This implies that majority of the respondents went to higher institutions. Therefore, the respondents are literate. Table ??.1 shows that most of the respondents (43.6%) in the study area were primarily farmers, 23.1% were civil servants, 23.1% were traders, 6.4% were artisans and 3.8% engage in other occupations. The implication of this finding is that the primary major occupation in the study area was farming.

The table further reveals that majority of the respondents (56.5%) have a family size of 6-10 individuals while, the minority (43.7%) have a family size of 1-5 individuals. This finding corresponds with the work of Iorlamen (2014) that the size of the household will influence the food expenditure of the household. The implication is that the food expenditure of the majority (56.5%) should be more than that of the minority (43.7%). This finding also goes in line with the research that the size of the household is a major social unit through which most people access their food (Ike et al., 2015). This is because a small family with mostly little children have only the parents providing food for the family; but in a family that is dominated mainly by adults will have easy access to food.

11 b) Expenditure Share of each Food Consumed by the Households

Expenditure share of food refers to amount of money spent in purchasing food stuffs within a particular period. Under this, data for household income, household food expenditure per month and household total expenditure collected from the households. Source: Field Survey, 2018

Table ??.2 shows the distribution of the respondents according to their household income, household food expenditure, household total expenditure and the various amounts at which they purchased each food item. Based on their monthly income, it shows that majority of the respondents (30.8%) earned within 21,000 -40,000 naira per month while 24.4% earned 41,000 -60,000 naira per month, 17.9% earned 61,000 -80,000 naira per month, 10.3% earned 7,000 -20,000 naira per month, 10.3% earned 100,000 -170,000 naira per month and 6.4% earned 81,000 -100,000 naira per month. This implies that majority of the respondents don't earn so much money, their monthly income is below N50,000 and this is poor (Aminu, Adebajo, & Mohammed, 2016).

Result of the monthly food expenditure of the households (Table ??.2), shows that the majority (69.2%) spent between N32,000 -N50,000 on food while, 23.1% and 7.7% spent between N15,000 -N30,000 and N52,000 -N88,000 respectively on food.

The result presented table in 3.2 shows that based on the monthly total expenditure (i.e. food and non-food expenditure) of the respondents, the majority (43.7%) spent between N51,000 -N70,000 while 30.8% and 25.6% spent between N25,000 -N50,000 and N71,000 -N100,000 respectively. This implies that most households spent more money than they earn per month. This goes in line with the research that a good percentage of households are food insecure (Arene & Anyaeji, 2010). Table ??.3 shows that based on the weekly visit of the respondents to

the market, in purchasing vegetables, 93.6% and 6.5% spend between N0 -N500 and N 600 -N2,000 respectively. In purchasing Root and Tuber Crops, the majority, 57.7% spend between N1,600 and N2,000 whereas, 32.1% and 10.3% spend between N500 -N1500 and N2100 -N5000 respectively. In purchasing Fruits, 87.2% spend between 0 -500 naira while 6.5% spend between 600 -2000 naira. In purchasing Beverages, the majority, 48.8% spend between 600 -1000 naira while 34.6% and 16.8% spend between 200 -500 naira and 1500 -5000 naira respectively. In purchasing Grains, 84.6% and 15.4% spend between 2,400 -5000 naira and 600 -2,000 naira respectively. In purchasing Meat, the majority, 82.1% spend between 700 -1500 naira while, 6.4% and 11.6% spend between 0 -500 naira and 2000 -5000 naira. In purchasing Milk, the majority, 82% spend between 200 -500 naira while the remaining 12.9% and .5.1% spend between 600 -1000 naira and 1500 -3000 naira. In purchasing Egg, 93.3% spend between 0 -500 naira while 7.8% earn between 600 -2000 naira. Finally, in purchasing Fish, 85.9% spend between 300 -1500 naira while 14.1% spend between 2000 -5000 naira.

From this research, we can say that the respondents spend more money on root and tuber crops, beverages, grains, meat and fish than they do on vegetables, fruits, milk and egg. This findings support the research that individuals go for quantity rather than quality and this can compromise their health, well-being and productivity (Ike et al., 2015).

12 i. Percentage of Household Food Expenditure Share on Household Income and Household Total Expenditure

This is to find out how many percentage (%) of the household income was spent on food and how many percentage (%) of the household total expenditure was spent on food. The results from table ??4 shows that based on the percentage of food expenditure share on total expenditure, the mean was 58.7 and majority of the respondents (62.8%), spend between 42-60% of their household expenditure on food while, 17.9% spend 61-70%, and 19.2% spend 71-88%. This proves that most of the respondents spend more than half of what they spend in a month on food. Table ??4 further reveals that based on the percentage of food expenditure share on monthly income, the mean was 94.04 and the majority of the respondents (34.6%) spend between 30-60% of their income on food while, 30.8% spend between 61-90%, 15.4% spend between 91-120%, 11.5% spend between 121-150%, 1.3% spend between 151-180%, 1.3% spend between 181-210%, 1.3% spend between 211-240%, 1.3% spend between 241-300% and 2.6% spend between 301-428%. This implies that most of the respondents spend above half of their income on food. It also showed that some household spend more than they earn on food and most of these households are poor. The findings from table 3.4 goes in line with the research that the share of total household expenditure spent on food is an indicator of household food security because it is widely documented that the poorer and more vulnerable a household, the larger the share of household income spent on food (Guiding Framework, 2017).

13 c) Subsistence Share of each Food consumed by the Households

The subsistence share of food refers to the amount of food consumed by the households from their farm. It includes all the share of crops grown by the respondents or the share of animal products which the households consume. Table ??5 shows that in addition to purchase, 98.7% consume their farm products while 1.3% do not harvest their crops for household consumption. It also shows that the majority of the respondents, (29.5%) grew 2 crops while 24.4% grew 3 crops, 19.2% grew 5 crops and above, 16.7% grew 4 crops and few, 10.3% grew 1 crop. This implies that most of the respondents grow just 2 crops. Table ??5 shows that the majority of the respondents, 32.1% grew Tuber crops, grains, vegetables, fruits and others (including livestock e.g. poultry) while the minority, 2.6% grew only vegetables. The rest grew either tuber crops or grains or fruits or a combination of 2 or 3 of them. This implies that most of the respondents prefer to grew different types of crops than just one crop.

14 i.

Subsistence Share of Vegetables Source: Field Survey, 2018

Figure ??1 shows that majority of the respondents (47.4%) do not harvest vegetables for their household consumption while, 25.6% harvest above 60%, 16.7% harvest between 41% and 60%, and few harvest only about 20% for consumption. .2 shows that the majority of the respondents (29.5%) harvest 100% of their farm products for their household consumption, 29.5% also do not have any subsistence share, 23.1% harvest between 41-60%, 12.8% harvest between 21-40% while few harvest about 20% or less than that for their household consumption. This shows that most of the respondents do not rely solely on purchasing root and tuber crops from the market; they also harvest from their farm for household consumption.

iii.

Subsistence Share of Fruits Figure ??3: Pie chart of the Subsistence Share of Fruits Figure ??3 shows that majority of the respondents (50%), do not harvest fruits for their household consumption while 21.8% harvests above 60%, 11.5% harvests between 21-40%, 9% harvests between 1-20%, and the minority harvests 20% of their fruit crops for their household consumption. This may be attributed to the fact that most of the respondents do not grow more of fruits crops. iv. Subsistence Share of Beverages Source: Field Survey, 2018 ??figure 3.4 shows

that all the respondents do not harvest beverage crops for their household consumption. This implies that all the respondents do not grow beverage crops. v. Subsistence Share of Grains Figure ??.5: Pie chart of the Subsistence Share of Grains Figure ??.5 shows that majority of the respondents (35%) harvest above 60% of their grain crops for harvest consumption while 33.3% have no subsistence share, 12.8% harvest 41 -60%, 12.8% harvest 21 -40% and few (5.1%) harvest only 20% of their grain crops. ??.6 shows that majority of the respondents (96.2%) do not have any subsistence of meat while only 1.3% and 2.6% harvest between 21-40% and 1-20% respectively and finally, few of the respondents have only about 20% subsistence share of meat. This implies that most of the respondents do not raise livestock for household consumption. They prefer to grow crops as it may be cheaper and easier. This may be attributed to easy access to land for agricultural use and most households can easily start a farm around their home (Mafuru & Marsh, 2003). .8 shows that majority of the respondents do not have subsistence share of egg products while the minority have about 41 -60% subsistence share. This implies that most of the respondents do not raise livestock for egg production. ix. Subsistence Share of Fish Figure ??.9: Pie chart of the Subsistence Share of Fish Figure ??.9 shows that all the respondents do not have subsistence share of fish. This implies that the respondents do not raise livestock for fish production. Data from result on table ??.6 shows the effects of the socio-economic characteristics on household food expenditure. Multiple linear regressions at 5% and 10% probability level were used. The results show that subsistence share of food has a negative effect on household food consumption and was very significant at 1% probability level. It shows that as the subsistence share of food increases, the level of food expenditure decreases.

15 vii. Subsistence Share of Milk

16 96

Also, household income had a negative effect on household food expenditure and was very significant at 1% probability level. It showed that as the household income increases, the household food expenditure increases although, most respondents spent more money on food than they earned monthly. Some of these respondents may have borrowed. This finding supports the research that there is a decline in the "starchy staple ratio" as incomes rise reflects the tendency for families to consume increasingly large quantities of meat, dairy products, and other relatively costly foods as enlarged purchasing power allows them to modify their diet patterns. This shift toward more expensive foods is largely responsible for the fact that food expenditures rise in absolute terms as incomes rise, even though, in accordance with Engel's law, the proportion of income spent on food declines (Kaneda & Johnson, 2011). This is expected because incomes of these households are likely to be higher as a result of longer stay on their public or private endeavors, following the assumptions of lifecycle hypothesis (Arene & Anyaeji, 2010). According to this hypothesis, current consumption spending is primarily a matter of expected income, and this expected income, is, in principle, very similar to a higher expected income implying a higher level of current consumption and lower level of current savings, a lower level of current consumption.

17 IV. Conclusion and Recommendation

From the basis of the research findings, it is seen that the respondents were of low economic status. The research showed that majority of the respondents were married, were farmers and had a large household size. The study showed that most households, in addition to their subsistence share of food, spent lesser amounts on food expenditure. The research also showed how some socio-economic characteristics affect the household food expenditure. The study indicated through multiple regression that household income and subsistence share of food had positive significance on household food expenditure at 1% probability level.

Furthermore, the study showed that as the subsistence share of food and household income increases, the household food expenditure decreases; it also showed that as the household size decreases, the household food expenditure decreases. This result mean that large households spend more on food. The study also showed that the respondents spend more than they earn in a month. Some of the respondents spend over 100% of their income on food, some even spend 2 or 3times their income on food. The study also showed that more than half of what the respondents spend in a month is mostly on food.

Based on the study, households should be encouraged to have farms to help them reduce the amount of food items to purchase. With this, households will be able to reduce the amount of money spent on food monthly because of the subsistence share of food they will have. More so, it is advised that the government should increase the salaries paid to individuals since the study indicated that the households are poor, since 94% spend more of their income on food.

Furthermore, there should also be improvement in research institutes to find out more how much households spend on food consumption and expenditure and how it can be reduced. Also, more studies on food expenditure analysis should focus on urban communities as there are likely evidences of food insecurity in these communities as obtained in the rural areas.

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Source: Field Survey, 2018

Figure 1: Table 3 . 1 :

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Expenditure (N)	Frequency	Percentage (%)	Mean
Household Income			55320.5128
7000 -20000	8	10.3	
21000 -40000	24	30.8	
41000 -60000	19	24.4	
61000 -80000	14	17.9	
81000 -100000	5	6.4	
100000 -170000	8	10.3	
Household Total Expenditure			64487.1795
25000 -50000	24	30.8	
51000 -70000	34	43.6	
71000 -100000	20	25.6	
Household Food Expenditure			37358.9744
15000 -30000	18	23.1	
32000 -50000	54	69.2	
52000 -88000	6	7.7	

Figure 2: Table 3 . 2 :

33

Money Spent on Food Items weekly	Frequency	Percentage	Mean
Vegetables			403.8462
0 -500	73	93.6	
600 -2000	5	6.5	
Root and Tuber Crops			1839.7436
500 -1500	25	32.1	
1600 -2000	45	57.7	
2100 -5000	8	10.3	
Fruits			529.4872
0 -500	68	87.2	
600 -2000	10	12.6	
Beverages			934.3590
200 -500	27	34.6	
600 -1000	38	48.8	
1500 -5000	13	16.8	
Grains			2070.5128
600 -2000	12	15.4	
2400 -5000	66	84.6	
Meat			1211.5385
0 -500	5	6.4	
700 -1500	64	82.1	
2000 -5000	9	11.6	
Milk			607.6923
200 -500	64	82	
600 -1000	10	12.9	
1500 -3000	4	5.1	
Egg			507.6923
0 -500	72	92.2	
600 -2000	6	7.8	
Fish			1343.5892
300 -1500	67	85.9	
2000 -5000	11	14.1	

Source: Field Survey, 2018

Figure 3: Table 3 . 3 :

34

Food share (%)	Frequency	Percentage	Mean
Food share on Total Expenditure			58.6685
42-60	49	62.8	
61-70	14	17.9	
71-88	15	19.2	
Food share on Household Income			94.0483
30-60	27	34.6	
61-90	24	30.8	
91-120	12	15.4	
121-150	9	11.5	
151-180	1	1.3	
181-210	1	1.3	
211-240	1	1.3	
241-300	1	1.3	
301-428	2	2.6	

Source:
Field
Survey,
2018

Figure 4: Table 3 . 4 :

35

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Enugu
State
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Year 2018

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Variables

Subsistence Share

No

Yes

Total

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FrequencyPercentage
(%)

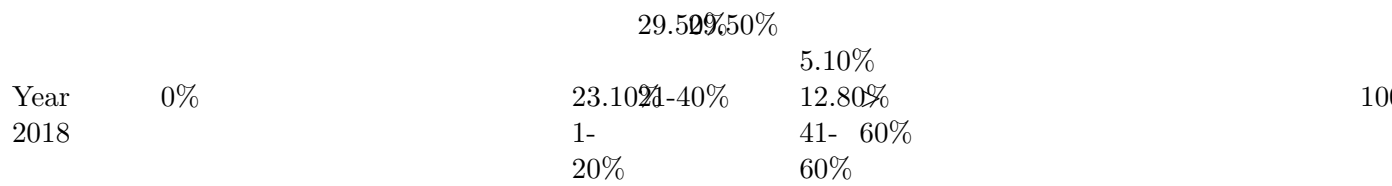
1	1.3
77	98.7
78	100.0

Figure 5: Table 3 . 5 :

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Enugu State

vi. Subsistence Share of Meat
Subsistence share of root and

tuber crops



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Figure 3.6:

Source: Field Survey, 2018

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50% Subsistence Share of Fruits 9% 11.50% 7.70% 21.80% 0% 1-20% 21-40% 41-60% >60% 0%

Source: Field Survey, 2018

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Figure 6:

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Subsistence Share of Meat

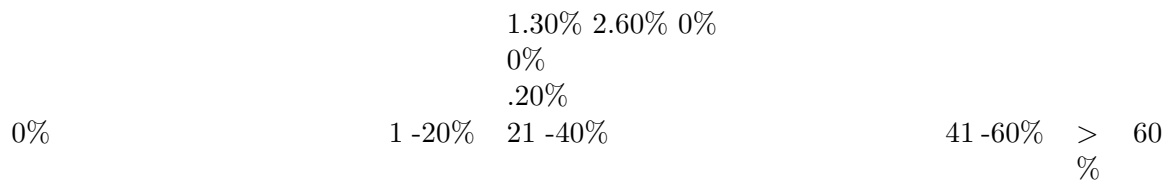


Figure 7: Table 3 . 6 :

Sex	-2610.403	1773.521	-	-1.472
MaritalStatus2	1783.186	1917.673	.112	.930
Household Size	-303.819	488.786	.072	-.622
Household income	.211	.026	-.055	7.960
Subsistence Share	-57985.407	7136.054	.634	-8.126
Level of Education	-2252.804	1785.254	-.577	-1.262
Primary Occupation	-1240.990	832.051	-.100	-1.491
			.114	
a. Dependent Variable: Household Food Expenditure				
Model	R	R Square	Adjusted R Square	Std. Error of
1	.839	.704	.665	6580.16132

a. Predictors: (

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Figure 8:

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