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DETERMINANTS OF FOOD CONSUMPTION PATTERN AMONG RURAL MALE AND FEMALE HEADED HOUSEHOLDS IN ONDO STATE

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ABSTRACT

This study was carried out in Ondo State to determine the socio-economic factors influencing food consumption patterns among rural male and female headed households. A random sampling technique was used to select a district from where three Local Government Areas of the State where randomly selected. 10 respondents were selected in stratified technique (equal male and female) to get 120 respondents through snowball technique from each male and female participants. Descriptive and regression technique model were used to analyze the data gathered. The mean household size of the respondents was 5.27 and 5.05 among the male and female headed households. The average ages were 46.70 and 42.52 respectively for male and female headed households. The average primary incomes were 38501.33 and 37455.00 respectively. The coefficient of multiple determinations, R^2 value shows that 56.5% and 53.9% of the variability in the consumption was explained by independent variables among the male and female headed household respectively. The study recommended that government should create employment opportunities for the rural people to enhance their income generating capacity as well as provision of adequate information on the importance of nutrition.

Keywords: Household, consumption pattern, female headed, male headed, determinant

1.0 INTRODUCTION

Determinants of household expenditure have been a topic of interest for economists for centuries. Several researchers have made important contributions to the understanding of factors associated with consumer choice (Engel, 1895; Barton, 1955; Becker, 1976). Engel focused on the relationship between expenditure on food and income. According to Engel's Law, the household budget spent on food decreases as income increases. He suggested that a higher propensity of households experiencing increasing income spend a bigger proportion of the food budget on a diversified diet thus improving the nutritional status of the household members. Engel's original work showed the relevance of income and family size in influencing household expenditure, and later studies confirm that larger families typically have larger budget shares of necessities than smaller families at the same income level. Becker's (1965) theory of household production is often used to model household expenditure analysis. The theory extends to consider how households choose the best combination of commodities to maximize utility, while subject to time, resources, and technology constraints. The nature and patterns of food expenditure continue to reflect the socio-economic characteristics of households under consideration. From an empirical perspective, several studies have been undertaken to provide an understanding of the factors that affect household food expenditure. Gheblawi and Sherif (2007) examined the factors affecting expenditure on rice, fish, and meat in the UAE. Their results indicated that income and household size are important factors affecting the amount of money spent on the three examined food groups, and that the expenditure on the three examined food items was not highly responsive to changes in households' incomes.

Household food consumption expenditure is a critical issue in most developing countries. In Sub Saharan Africa, food consumption expenditure constitutes greater percentage in the household income share compared to saving. In Nigeria, food consumption pattern had undergone remarkable changes over the last few years. There has been an increase in the consumption of starchy foods like cassava, yams, maize and rice and some decrease in the consumption of protein based food items such as fish and meats. Average protein intake by Nigerians is only at the threshold of adequacy.

STATEMENT OF THE PROBLEM

Food is a basic human need and the major source of nutrients needed for human existence. Food security indicates the availability of and access to food.

At a global level, evidence indicates a transition in nutrition, a shift away from diets based on indigenous staple foods, such as grains, starchy roots and locally grown legumes, fruits and vegetables, towards more varied diets that include more processed food, more foods of animal origin, more added sugar, salt and fat. This combines with a decline in energy expenditure (sedentary lifestyle, motorized transport, less physically demanding activities). Because of these changes in dietary and lifestyle patterns, nutritional and diet-related diseases are increasingly significant causes of disability and premature death in both developing and newly developed countries. These consumption patterns not only undermine the quality of life but also have other negative environmental, social and economic impacts.

In contemporary post-industrial societies, where the food system provides people with ample access to a wide variety of foods, many of which are high in fat and are calorically dense, there is a strong link between food, eating, and weight. Over weight and obesity are one of the greatest public health challenges of the 21st century. Its prevalence has tripled in many countries in the EU since the 1980s, and the numbers of those affected continue to rise at an alarming rate, particularly among children

These objective tends to give insight into determinants of food consumption patterns among rural male and female headed household of Ondo-State.

i. Describe the Socio economic characteristics of the respondents in the study area.
ii. Identify the socio-economic factors affecting food consumption pattern of the rural male and female headed households.

2.0 LITERATURE REVIEW

Non-economic factors (that is education, sex and family size) are important determinants of consumers' decisions. Hopkins et al, In Niger found that changes in female annual income while controlling the male income, impacted positively on household food expenditure for both earned and non-earned income. Hoddinoth and Haddad in *Cote D' Ivoire* found a positive, but small marginal effect of women's income share on household food budget share. According to him, increasing household disposal income may not be effective strategy for increase food consumption. Gupta (2011) and Avery and Kannickel (2007) in their separate empirically studies discovered that increase income positively influence food consumption. Adebayo (2005) discovered that expenditure elasticity of per capita calorie intake in South-Western Nigeria is between 0 to 4 percent meaning that calorie intake does not get a substantial share of the marginal increase in household income. Adewale (2005) found that household size and level of formal education affect consumption of Soybean. Emerole et al. (2007) used multiple regression model to determine consumption expenditure and its share to total income in small farm households in Ikwuano, Abia State, Nigeria. Results showed that per-household member income, and per- household-member wealth was the major determinants of consumption expenditure.

Food consumption patterns vary according to socioeconomic level and household characteristics. Delisle (1990) has found that there is evidence that traditional diets mainly found in low income households of countries in East Africa consist of grains (such as maize, millet and sorghum) or roots and tubers. Staple foods have been found to differ from country to country with some consuming rice and wheat in Asia, Middle East and Latin America and others. Roots, tubers, yam, cassava and plantain are mainly consumed in West Africa such as in Cameroon. The study also found that there are differences in urban and rural dietary patterns in developing countries. Also rural and poor populations are found to allocate a higher proportion of their income to food as compared to urban areas and middle income households. Also allocation of expenditure on food depends on the area and the culture. Other factors that affect food consumption patterns are occupation of household head, household head and size of the city in urban areas. The main objective of this study is to identify the relationship between household food consumption pattern and the socio-economic characteristics of the household.

FOOD CONSUMPTION AND NUTRITION

Nutrition is an inter-disciplinary science which shows the relationship between man, his environment and his food (Yukon, 2004). Food implies the Psychological, Social, Physiological and Biochemical aspect of nutrition. Hence, nutrition is the combination of process by which all part s of the body receives and utilizes the materials necessary for performance of their functions and for growth. A good diet which is gotten from a well-balanced food has a tremendous bearing on a person's vitality, emotional stability and enthusiasm for life. Food is a substance which when consumed supplies the body with nutrients which are essential for the proper functioning of the body. Hence, nutrients are derived from good food and nutrition functions in one or more ways i.e. it helps in growth, maintenance and repair of the body's worn out tissues. Nutrients can be classified into two categories. The first category is found according to their chemical composition while the second category is according to their function. The classification according to their chemical composition include (carbohydrate, fats, proteins, vitamins and minerals while the other classification according to their function includes body building materials or nutrients, energy giving nutrients and body regulatory nutrients and body protecting nutrient. Food is a material from which the body tissues are constructed and all sources of all nutrients is in food. Every living organism i.e. plants, animals (Vertebrates and Invertebrates) and human beings need food to live. Hence, nutrient deals with nourishing the body with various aspects of nutrients and also with the digestion, absorption and utilization of food; therefore food i.e. supply of nutrients is in relation to achieving a Healthy status. Nutrition can be divided into two categories namely (good nutrition i.e. optimum or adequate and malnutrition which can be either over nutrition or under nutrition. Good nutrition leads to the Physical wellbeing while malnutrition leads to ill health. (Chopra et al 2006).

The quality of diet or food also falls due to lack of money which is a socioeconomic problem. The need for man to include essential nutrients in his diet forms parts of his biological evaluation, but has equally influenced his social evolution (Alberts, 2000). Modern nutrition

Science has proven that diet has a far reading influence on health hence a large proportion of the population is inadequately feed. (Olusanya E.O, 2007).

3.0 METHODOLOGY

SAMPLING TECHNIQUE AND SAMPLE SIZE

Multistage technique was used in the sampling procedure. A random sampling technique was used to select (Akoko S/W) senatorial district in the state. In the second stage, three (3) Local Government Areas (Akoko N/E, Akoko N/W and Akoko S/E) were randomly selected from the district. Stratified sampling technique was employed to select ten (10) respondents of equal distribution of male and female, making 15male and 15female from the local governments. Snowball sampling technique was employed to know the actual head of the household with each respondents introducing three (3) respondents making a total of 120 respondents.

DATA ANALYSIS

Descriptive statistics such as frequency tables and percentages were used to analyze some variables of the respondents such as age distribution, marital status, sex e.t.c and to describe the socio-economic characteristics of the respondents in the study areas and use of multiple regression model to explain the relationship between the dependent variable (Household consumption expenditure) and independent variables (Factors influencing it)

4.0 RESULT ANALYSIS AND INTERPRETATION

4.1 Demographic characteristics of respondents

Age of the respondents

The average age for the male and female headed households is about 47 and 43 years respectively as shown by the table below. This table shows that majority of the respondents were not as old as one would expect it to be in the rural area. They belonged to the active group and consume food heavily. The aged ones were in minority.

Age of the Respondents

	Male headed		Female headed		Pooled	
Age	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
<30 years	**1**	**1.7**	**6**	**10.0**	**7**	**5.8**
30-39	**18**	**30.0**	**23**	**38.3**	**41**	**34.2**
40-49	**12**	**20.0**	**16**	**26.7**	**28**	**23.3**
50-59	**21**	**35.0**	**10**	**16.7**	**31**	**25.8**
60-69	**7**	**11.7**	**5**	**8.3**	**12**	**10.0**
>70	**1**	**1.7**	**0**	**0.0**	**1**	**0.8**
Total	**60**	**100**	**60**	**100**	**120**	**100**
Mean	**46.70**		**42.52**		**44.61**	

Source: Field Source, 2023

Marital Status of the Respondents

The marital status of respondents is presented in table. The study revealed that 10.0% of the male headed households were single while 6.7% were single in the female headed household, majority of the male household heads (83.3%) were married while 78.3% of the female household heads were married. 1.7% were divorced among the male headed households while that of female headed households were 3.3%. The implication of the findings shows that only responsible people could provide the needs and consumption expenditure of his or her household in his or her capacity. Marriage confers a measure of responsibility on the people.

Marital Status of the Respondents

Marital Status	Male headed		Female headed	
	Frequency	Percentage	Frequency	Percentage
Single	6	10.0	4	6.7
Married	50	83.3	47	78.3
Widow	0	0.0	6	10.0
Divorced	1	1.7	2	3.3
Separated	3	5.0	1	1.7
Total	60	100	60	100

Source: Field survey, 2023

Household Size of the Respondents

Household size is one of the important socio-economic characteristics that will determine the number of people that will be sharing from the household income and also determine the percentage of income that will be spent on food and how well the household is fed. Table 4.4 below shows that 66.7% of the male respondents' household sizes were within 1-5 members while 63.3% of the female headed households had 1 to 5 household sizes, 30% of the male headed falls within the range of 6-10 household sizes while that of female headed were 35%. 3.3 % of the male headed households have household size above 10 while that of female headed households constitute 1.7%. Their average household size is about 5 members.

Respondents based on Household Size

Household Size	Male headed		Female headed	
	Frequency	Percentage	Frequency	Percentage
1 – 5	40	66.7	38	63.3
6 – 10	18	30.0	21	35.0
Above 10	2	3.3	1	1.7
Total	60	100	60	100
Mean	5.27		5.05	

Source: Field survey, 2023

Educational Level of the Respondents

18.3% (male and female headed household) of the respondents had no formal education, while majority 45% and 51.7 % of both the male and female headed households respectively completed Tertiary school education, 30% had secondary school education, while 6.7% of the male headed household only had primary school education. The findings as revealed by the table shows that majority were educated as against the belief that rural population are not literate. The implication of this is that rural people were fairly educated to know the importance of nutrition.

Educational Level of the Respondents

Educational level	Male headed		Female headed	
	Frequency	Percentage	Frequency	Percentage
No Formal Education	11	18.3	11	18.3
Primary Education	4	6.7	0	0
Secondary Education	18	30.0	18	30.0
Tertiary Education	27	45.0	31	51.7
Total	60	100	60	100

Source: Field survey, 2023

Occupation of the Respondents

The table below shows the occupational distribution of the male and female headed households in the study areas. This shows that majority of the male and female headed households (38.3%) and (35%) choose farming as their major occupation respectively. 25% of the male headed households were civil servant while 28.3% of the female headed household were civil servant. The table also shows that 28.3% of the male headed households and 10% of the female headed households were into other occupation like barbing, vulcaniser, driver, motorbike rider, hairdressing, and tailor as their major occupation

Distribution of Respondents by Primary Occupation

Primary Occupation	Male Headed Household		Female headed household	
	Frequency	Percentage	Frequency	Percentage
Civil Service	15	25.0	17	28.3
Farming	23	38.3	21	35.0
Traders	5	8.3	16	26.7
Others	17	28.3	6	10.0
Total	60	100	60	100

Source: Field survey, 2023

Income distribution of the Respondents

The table shows that majority (81.7%) of the male headed household earns an average income of 50,000 naira and below while 76.7% of the female household had an average income of N 50,000 and below.16.7% earns between N 50,001 and N 100,000 among the male headed households while that of female headed households 23.3% were earning between 50,001 and 100,000. The average primary household income of both is N 38,501.33 and N 37,455.00

Distribution of Respondents by primary Income

Average Primary Income	Male Headed household		Female Headed household	
	Frequency	Percentage	Frequency	Percentage
≤50000	49	81.7	46	76.7
50001–100000	10	16.7	14	23.3
100001-150000	1	1.7	0	0.0
Total	60	100	60	100
Mean	38,501.33		37,455.00	

Source: Field survey, 2023.

4.2 Regression Analysis

Multiple linear regression analysis was used to determine the relationship between consumption expenditure and the socio - economic characteristics. The objective of this is to determine the effects of the independent variables, X on the consumption expenditure which is a dependent variable.

Y= Consumption Expenditure

X_1=age of the respondents (in years)

X_2 = Marital status of the respondents

X_3 = Household size of the household head

X_4 = Dependency Ratio

X_5 = level of Education (formal or non-formal)

X_6 = Occupation of the household head

X_7 = Income of the household Member (in naira)

X_8 = Total income

X_9 = Non-Food Expenditure

The table below shows the result of the regression analysis. From the table it shows that the coefficient of multiple determinations, R^2 value shows that 56.5% and 53.9% of the variability in the consumption is explained by independent variables among the male and female headed household respectively in the model.

Dependency ratio and non-food expenditure significantly influence the consumption expenditure of food in the female headed household while it was only non-food expenditure that significantly influence consumption in the male headed household. Other variables in the model do not significantly influence the consumption expenditure on food in both households.

The coefficient of age (X_1) shows a positive correlation with consumption expenditure which implies that a unit change in age will increase consumption expenditure among male and female headed households.

The coefficient of marital status (X_2) shows a negative correlation with consumption expenditure which implies that changes in their marital status does not increase consumption expenditure among the male and female headed households.

The coefficient of household size (X_3) shows a positive correlation with consumption expenditure which implies that a unit change in household size will increase consumption expenditure.

The coefficient of Dependency ratio (X_4) shows a positive correlation with consumption expenditure which implies that a unit change in the dependency ratio will also increase consumption expenditure.
The coefficient of Education (X_5) shows a positive correlation with consumption expenditure which implies that a unit change in the education level will result in increase in their consumption expenditure.
The coefficient of Occupation (X_6) shows a negative correlation with consumption expenditure which implies that a unit change in their occupation does not increase consumption expenditure among the male and female headed households.
The coefficient of the household member income (X_7) shows a negative correlation with consumption expenditure which implies that a unit increase in the household member income does not increase consumption expenditure among the male and female headed households.
The coefficient of Income (X_8) shows a positive correlation among the male headed households which implies that a unit change in income will result to a unit change in consumption expenditure while it shows a negative correlation among the female headed households which implies that a unit change in income does not result in increase in consumption expenditure.
The coefficient of Non-food expenditure shows a positive correlation with the consumption expenditure which implies that a unit change in non-food expenditure will bring about increase in consumption expenditure.

Regression results for Consumption Expenditure

Variables	Pooled		Male		Female	
	Coefficient	T-value	Coefficient	T-value	Coefficient	T-value
Constant	-35774.085	-1.192	-116222.678	-1.666	6968.421	0.156
Age	7760.212	1.224	27757.282	1.290	570.213	0.059
Marital status	-6749.085	-1.319	-2007.930	-0.259	-7430.400	-0.810
Household Size	4932.349	1.609	1307.304	0.280	8857.061	1.528
Dependency Ratio	5614.099	2.044	7456.975	1.225	10350.637*	2.065
Education	4089.131	1.433	9603.292	1.451	3793.065	0.989
Occupation	-2430.177	-0.823	-2966.199	-0.524	-1772.444	-0.347
Total income hm	-169.938	-0.129	-889.894	-0.209	-2310.560	-1.113
Total Income	-2316.157	-1.220	712.063	0.183	-2110.197	-0.624
Non-food Exp.	4918.599	3.055	2906.384*	0.729	5064.316*	2.068
R^2	0.476		0.565		0.539	
F – Value	3.931		1.441		2.464	

Source: Computed from data obtained from field survey, 2023.
NB *significant at 5%

CONCLUSION AND RECOMMENDATIONS

It can be concluded that the income level of rural dwellers is low and their dependency ratio is high due to the fact that the level of food consumption is dependent on the total household income and their sizes because, it is the part of income spent on food that determines consumption expenditure. Hence, there is a need to increase the income generating capacity of rural dwellers. It can also be inferred that expenditure on non-food items could also determines the level of expenses on food consumption.

4.2 RECOMMENDATIONS

- Empowerment of the rural dwellers to enable them raises their income level so that they will be able to afford to eat what they want.
- Government should diversify the economic base of rural area by providing employment opportunities such as establishment of agro-allied industries and processing plants for rural dwellers.
- Agric extension workers should intensify their efforts through farm and home visits to enlighten the rural dwellers on the importance of nutrition as well as the use of high yielding, early matured, diseases and drought resistant seeds/seedlings to increase their income.

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