

# Determinants of Household Food Consumption Expenditure as a Guide to Post-Conflict Growth- Evidence from Borno, Nigeria

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**Abstract:** *This study focuses on the Determinants of Household Food Consumption Expenditure as a Guide to Post-Conflict Growth, evidence from Borno state of Nigeria. The study used Nigeria, 2020 - 2021 Living Standards Measurement Study (LSMS) Data collected through National Longitudinal Phone Survey Baseline conducted by National Bureau of Statistics (NBS). Sample of 1352 households was selected using purposive sampling technique. The result was analysed using ordinary least square regression model. Findings of the study revealed the significant impact of family type and income of household head on food consumption expenditure. However, the study concluded that both demographic characteristics and economic factors affect household decision to consume food in the study area. Therefore, the study recommends a need to provide employment opportunities among households including those with polygamous and monogamous marriages which is aimed at modifying their food consumption expenditure and ensuring a higher standard of living. Policy makers should also formulate policies aimed at increasing income level so as to enhance food purchasing power, reduce food insecurity and reduce poverty relative to food which ensure a higher standard of living in the study area.*

**Keywords:** Household, Food, Consumption, Expenditure, Post-conflict

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## Introduction

The state of Food Security and Nutrition globally has shown that hunger is on the increase after diminishing for more than two decades. Global hunger rose from 777 million to 815 million people in 2015 and 2016 respectively. This recent surge in hunger resulted in worst-case situations in South Sudan and alerts of a high risk for Somalia, Yemen and northeastern Nigeria in 2017 (USAID 2009). Boko Haram insurgency has pushed massive areas surrounding Lake Chad, towards the brink of disaster. Some 2.3 million people have been displaced from their homes; 1.76 million people are uprooted within the borders of Nigeria alone. Millions are facing

acute food insecurity, and malnutrition rates are beyond emergency thresholds. The majority of those in need of urgent assistance in the Lake Chad Basin are in northeastern Nigeria (USAID 2009).

Consumption is a vital economic activity on which the welfare of the economy depends and constitutes a major share of the disposable income of the households on micro economic level. Household consumption plays a significant role towards the socio-economic development of an economy (Zehiwot & Senapathy 2019).

Food is one of the basic necessities of life. It is imperative for survival of every human being as minimum amount of it is needed for existence and a balance diet to maintain sound health. However, where there are availability issues, there is a great deal of deprivation and ignorance among the rural and even urban masses about a balanced diet. Normally this leads to various health problems, which ultimately affects the economic growth and prosperity of a country (Begum, Khan, Farooq, Begum & Irfan 2010 in Bata, Aliero & Gatawa 2018).

Researchers and indeed other academicians have acknowledge research on Food consumption all over the world. It is especially important in developing countries like Nigeria where food expenditures account for a relatively large share of household income (Kinsey, 1983). An understanding of household consumption behavior is paramount in household income and expenditure planning in Nigeria (Obayelu, Okoruwa & Oni, 2009).

The reduction in food consumption expenditure is still evident six years after the cessation of hostilities compared to during the conflict, albeit of lower magnitude than the period immediately after the cessation of hostilities. Regarding households' recovery, there is no significant differences in returns to land between homes exposed to violence and insecurity and those not exposed while returns to skilled labor increase (Annet et al., 2021)

The nature and patterns of food expenditure also reflect the socio-economic characteristics of households. A household's relative expenditure on food is a reliable indicator of vulnerability (Thirumarpan, 2013). Households have varying degrees of spending capacity which influences their spending patterns. According to Engel's law of expenditure in 1857, proportion of expenditure spent on food is inversely related to total income (Olayemi, 2004; Adeniyi, Omitoyin & Ojo, 2012).

Poverty in developing countries like Nigeria, takes various forms thus study on household income and expenditure is important in addressing the poverty situation in the country (Njimanted, 2006). Therefore, with the present pressing need to increase food security and alleviate poverty in Nigeria and most parts of sub-Saharan Africa, understanding the determinants of food consumption expenditure is pertinent and of policy relevant (Omonona, 2006).

Many studies have been conducted in Nigeria and other developing countries of the world on the determinants of food consumption expenditure using Analysis of variance, Cragg's double-hurdle model, Quadratic Almost Ideals Demand System, Double Logarithm Regression Model, Heckman two-step procedure, working-leser model, probit model, tobit model, logit model,

simultaneous equation model and chi-square in their analysis of data but none of these studies employed Ordinary Least Square in the form of multiple regression to analyze the data (Thomas, 2013; Samuel & Hamdiya & Paul 2014).

Therefore, it is in the light of the above that this study intends to contribute to the literature by providing empirical information on the Determinants of Household Food Consumption Expenditure as a Guide to Post-Conflict Growth.

## **Review of Related Literature**

### **Consumption Expenditure**

The concept of “consumption expenditure” is very important in the sense that it idealizes the concept of price theory which measures the use of goods and services. Consumers attempt to maximize their life time utility in allocating their wealth between current consumption and future consumption (Dankwa, 1992).

Keynes (1936) defined consumption as the part of income that was not saved, thereby distinguishing between purchases that satisfy wants directly and investments that became assets in the absence of a satisfactory means of measuring the goods actually consumed, thus monetary measure of consumption has been widely accepted and used as a basis for predicting economic trend.

Dernburg (1985) considered consumption expenditure as an act of using goods and services for the purpose of satisfying man’s innumerable needs. This encompasses the importance of consumption in welfare. The aggregate consumption expenditure level which includes expenditure on durable and non-durable goods shows the general position of an economy. Consumption is simply defined as the total demand for all consumer goods and Services.

### **Conflict and post-conflict recovery**

The Neoclassical Theory (Solow, 1956) and the endogenous growth theory (Romer, 2011) connect war to economic growth. Following conflict, Neoclassical Theory predicts that an economy recovers relatively quickly to its steady state. Conversely, the Endogenous Growth Theory offers a vaguer position with predictions that are not simply identifiable. Most empirical research has used Solow’s growth model as an initial point to predict the impact of conflict on economic performance and growth rates (Annet et al., 2021).

Subsequently, the debate has centered on how much time it takes for nations to converge to the steady state after a conflict (Sachs, 2008). The extent to which a household recovers from the aftermath effects of the conflict depends on whether the threshold of the devastation is exceeded or not (Arias et al., 2019) and the resilience of the households towards the shock from civil conflict (Brück & d’Errico, 2019). Conflict at times imposes on households shocks from which they cannot recover (Tranchant et al., 2018) and remain confined to low-risk strategies adopted during the war (Arias et al., 2019).

The availability and ease of access to food in the household largely depends on the income, ability to grow food for home consumption, and health status (Hearn et al., 1998). Armed conflicts affect own food production by displacing households who cannot access their land, cuts labor supply from death or physical harm to labor, and families may not be in a situation to access agricultural inputs like seeds (Justino, 2012). Conflict can also affect food intake from the market by increasing transaction costs of market participation and reducing household diversification into nonfarm activities (Arias et al., 2019). Prolonged conflicts force households to shift from agricultural activities that require high investments to enterprises with short-term yields and lower profitability (Arias et al., 2019, Rockmore, 2020).

### **Review of Empirical Literatures**

This section examines the empirical studies that have been conducted on the household food consumption expenditure in Nigeria and beyond.

#### **Age of the Household Head**

Many studies were conducted on food consumption that captured age of household head as one of the independent variables.

Gereme, Jebessa & Amanuel (2020) examines Determinants of households' food consumption expenditure in South-Western Ethiopia. The study was designed to analyze food consumption expenditure of households in rural communities of South-West Ethiopia. The study employed cross sectional data collected from 182 randomly selected households. Descriptive statistics and multiple linear regression econometric models were used for analyzing the data. The study result indicates that age of household head and market distance were negatively and significantly affected household food consumption expenditure.

#### **Sex of the Household Head**

Moses (2012) evaluated the determinants of consumption of food away from home in Lagos, Nigeria. In this study, the objective was to identify factors that affect food away from home and characterize the food away from home in the study area. The study used food away from home expenditure as a dependent variable, while household income, age of household head, gender of household head, educational level of household head, marital status of household head, household size, proportion of children below ten years in the household, proportion of adolescents in the household and proportion of females in the house in the household. Descriptive statistics, Probit and Tobit regression models were employed for data analysis. The results of this study indicate that sex of the household head is significant variable that influenced the level of expenditure on food away from home.

#### **Household Size**

Wolle, (2020).states that the household behavior of expenditures on food is directly related to the household size and income. Studies conducted in Addis Ababa city and Debre Markos town found that household income and family size being main determinants of the household consumption behavior.

Babalola & Isitor (2014) analysed the determinants of food expenditure patterns among urban households in Lagos, Nigeria. The study used food expenditure as dependent variable, age of household head, households' size, marital status of household head, years of formal education of household head, sex of household head, tribe of household head, total monthly income, household composition with respect to dependents and risk group as independent variables. The data were analyzed using descriptive statistics and multiple regression models. The study found that household size had a significant effect on food consumption expenditure. Thus, there is a suspected existence of food insecurity and vulnerability to poverty in the study area which could be as a result of high cost of food items compared to what is obtained in the rural areas.

### **Level of Education of Household Head**

Joseph (2012) conducted a study on the socio-economic determinants of households' food expenditure in a low income township in South Africa. Total food expenditure as dependent variable was used, while household income, household size, gender of household head, age of household head, marital status of household head, employment status of household head and education level of household head as independent variables. Data collected were analysed using multiple regression model. The study revealed that educational attainment of the household head was found to exert a strong positive impact on food expenditures.

### **Location of Household**

Bozoglu, Bilgic, Yen, & Huang (2013) evaluated the household food consumption expenditure in Turkey. In this study, food expenditure away from home and food expenditure at home are considered to be dependent variables. While household size, accessibility, durables, equities, income, gender, marital status, age of children, home owner, location of households, internet and childless were considered as independent variables. The study used the 2009 Turkish Household Expenditure Survey conducted by the Turkish Statistics Institute. Results of the study indicates that location is significant in determining the level of household food consumption expenditure. The results also revealed that urban households tend to spend more on food consumption than their counterparts in rural areas.

### **Occupation of Household Head**

Kim and Saghalian (2016) analyzed the impact of households' characteristics on food away from home and at home in United State. The authors used expenditures on food consumption as dependent variables, while income, age, family size, education, age of children, working hours, spouse working hours, marital status, white, gender, food stamp, poverty-threshold, south, west and north as independent variables. The study used the 2013 Consumer Expenditure Survey data by the United State Department of Labour, Bureau of Labour Statistics. Ordinary least square estimator was used along with Tobit model in the data analysis of data. Result from the study found that employment status of household head is positive and significant at 1% level. Thus, it's among the significant factors that influencing food consumption expenditure in the study area.

## **Household Monthly Income**

Aminu, Adebajo and Mohammed (2016) analysed the determinants of food expenditure patterns among households in Oshodi-Isolo local government area of Lagos State, Nigeria. The authors considered household monthly food expenditure as dependent variable, while age of household head, sex of household head, education of household head, household size, household income, occupation of household head, tribe of household head and religion of household head as independent variables. Data were analysed using descriptive statistics and ordinary least square (OLS) regression analysis. The study revealed that household income is positive and significant influence of household monthly expenditure on food in the study area.

## **Theoretical Framework**

The Engel curve theory was adopted as the economic theory underpinning this study. The theory as introduced by German statistician Ernst Engel in 1857, who investigated the existing relation between food consumption expenditure and income (Leaon, 1967). The Engel curve describes how a consumer's purchases of a good like food vary as the consumer's total resources such as income or total expenditures vary. Engel curves may also depend on demographic variables and other consumer characteristics. A good Engel curve determines its income elasticity, and hence whether the good is an inferior, normal, or luxury good (Timmer, Falcon & Pearson 1983).

According to Pasinetti, (1981) Engel law states that the percentage of income allocated to food purchases decreases as income increases. As household's income increases, the percentage of income spent on food decreases while the proportion spent on other goods such as luxury goods increases. Engel's law similarly states that lower income households spend a greater proportion of their available income on food than middle or higher-income households. As food cost increase, the percentage spent by lower income households is expected to increase.

This study therefore, adopts this theory as a working framework as it captured the central message of the study as it vividly explained the relationship between household food consumption expenditure and income which is among the major determinants of food consumption expenditure. Furthermore, the theory depends on demographic variables such as: age, gender, marital status and other consumer characteristics which are very useful to this work.

## **Material and Methods**

### **Type and Source of Data**

The study utilized secondary data. *The study used* Nigeria, 2020 - 2021 Living Standards Measurement Study (LSMS) Data collected through National Longitudinal Phone Survey Baseline conducted by National Bureau of Statistics (NBS).

### **Sample Size and Sampling Technique**

The 2020 - 2021 Living Standards Measurement Study (LSMS) covered thirty six states and Federal Capital Territory (FCT) Abuja, and it provided detailed information on households' food consumption as well as on their socioeconomic and demographic characteristics. In the survey. The GHS-Panel conducted in 2018/19 served as the frame for the National Longitudinal Phone Survey Baseline. The GHS-Panel sample includes 4,976 households that were interviewed in the

post-harvest visit of the fourth wave in January/February 2019. This sample of households is representative nationally as well as across the 6 geopolitical Zones that divide up the country.

Among the 4,976 households interviewed in the post-harvest visit of the GHS-Panel in 2019, 4,934 (99.2%) provided at least one phone number. Around 90 percent of these households provided a phone number for at least one household member while the remaining 10 percent only provided a phone number for a reference person. Households with only the phone number of a reference person were expected to be more difficult to reach but were nonetheless included in the frame and deemed eligible for selection for the Nigeria 2020 - 2021 Living Standards Measurement Study (LSMS). This study use purposive sampling technique to select Borno state as the case study area. Similarly, all the local government areas in Borno state were selected purposively since the study is on household's consumption. A total of 1352 households were identified by the survey of which all were selected.

### **Variables Measurement**

Just like any econometric model, the model adopted by this study comprises of both the dependent and independent variables. To conform to the literature, the variables captured in the model specified for this study are measured as follows:

#### **Dependent Variable**

The dependent variable used in the study is the total monthly expenditure for food consumption by households in the study area in line with Aminu, Adebajo and Mohammed (2016).

#### **Independent Variables**

- i. Age: This will be measured by age of household head in years in line with the study of Gereme, Jebessa & Amanuel (2020)
- ii. Sex: This will be measured by sex of household head (1=male, 0=otherwise) following the work of Joseph (2012).
- iii. Family type: This will be measured by family type in the households (1=monogamous, 0=otherwise).
- iv. Household size: This will be measured by number of people in the household in line with Wolle, (2020).
- v. Level of Education: This would be measured by the highest level of education attained by household head (1=tertiary, 2=secondary, 3=primary, 0=none) in line with Joseph (2012).
- vi. Location: This will be measured by the area which household head is located (1=urban, 0=otherwise) as done by Kim & Saghaian (2016).
- vii. Occupation: This will be measured by the sector which household head engaged in economic activity (1=salary earner, 0=otherwise) in line with the work of Kim and Saghaian (2016)
- viii. Household Income: This will be measured by total monthly income received by household head in thousands of naira in line with the study of Aminu, Adebajo & Mouhammed (2016).

### Model Specification

Based on the literature reviewed, the appropriate model considers to fit this study is that of Gereme, Jebessa & Amanuel (2020) & Aminu, Adebajo & Mouhammed (2016).

However, the model was applied with slight modification. Thus, the model is as follows:

$$TFE = \beta_0 + \beta_1 AHH + \beta_2 SHH + \beta_3 FAT + \beta_4 HHZ + \beta_5 LEH + \beta_6 LHH + \beta_7 OHH + \beta_8 HMI + \varepsilon \text{ --- (1)}$$

Where:

TFE = Total food expenditure

$\beta_0$  = Constant parameter

$\beta_1 \text{ --- } \beta_{10}$  = Regression coefficient of the independent variables

AHH = Age of household head

SEH = Sex of household head

FAT = Family Type

HHZ = Household size

LEH = Level of education of household head

LHH = Location of household head

OHH = Occupation of household head

HMI = Household monthly income

$\varepsilon$  = Error term that will take care of other variables not capture in the model

### Method of Data Analysis

Data was analyze base on three hypotheses which are tested to examine the determinants of Household Food Consumption Expenditure as a Guide to Post-Conflict Growth in Borno State. Descriptive statistic tool was used to interpret the demographic characteristics and economic factors of the household head. So also, the data have been analyzed and computed using appropriate economic theory with the help of E-views version 9. Furthermore, to test the hypotheses, the ordinary least squared (OLS) in the form of multiple regression model was adopted to regress total food expenditure as dependent variable on other set of independent variables.

### Diagnostic Tests

Multicollinearity Test, Heteroscedasticity Test, Normality Test, Serial Correlation Test and Functional Misspecification Test were performed to find out if the independent variables included in the estimation are not correlated, to check whether the variability of error terms is constant or not, to determine if a sample or any group of data fits the standard normal distribution and to determine whether the errors associated with a given time period carry over into future time periods

### Data Analysis, Interpretation and Discussion of Findings

#### Introduction

This section deals with the presentation and the interpretation of the empirical results of the analysis of the determinants of Household Food Consumption Expenditure as a Guide to Post-Conflict Growth in Borno state.

#### Descriptive Analysis and Interpretation of the Data

This section presents the descriptive statistics in order to make easy understanding of the variables under study.

**Table 1.1 presents the results of the descriptive statistics**

Variables	Respondents Opinion	Frequency	Percentage
Age	Less than 25	42	3
	25-35	389	29
	36-45	743	55
	Above 45 years	178	13
	Total	1352	100
Gender	Male	1304	96
	Female	48	4
	Total	1352	100
Educational Level	No Education	189	14
	Qur'anic Education	311	23
	Primary	216	16
	Secondary	514	38

Family Type	Tertiary	122	9
	Total	1352	100
	Monogamous	967	72
	Polygamous	385	28
	Total	1352	100
Location	Rural	745	55
	Urban	607	45
	Total	1352	100
Occupation	Salary earner	963	71
	Others	389	29
	Total	1352	100
Household Size	Less than 6	747	55
	6-11	405	30
	More than 11	200	15
	Total	1352	100
Household Income	Less than 20,000	468	35
	20,000-40,000	623	46
	More than 40,000	261	19
	Total	1352	100
Food Consumption	Less than 20,000	792	59
	20,000-40,000	407	30
	More than 40,000	153	11
	Total	1352	100

Source: Generated by the Author from the National Bureau of Statistics (NBS).

From table 1.1, the results indicated that out of one thousand three hundred and fifty two respondents, 42 of them equivalent to 3% fall into the age bracket of less than 25 years. 389 respondents (29%) are in the age range of 25-35. 743 other respondents, constituting about 55% are between the ages of 36 and 45. Also, about 178 equivalent to 13% of the respondents were above 45 years. This shows that larger parts of the household heads are within the productive age bracket. Moreover, as can be seen from Table 1.1, 1304 respondents (96%) are males and the remaining respondents constituting about 4% are females. Nevertheless, 122 respondents constituting 9% acquired tertiary education either in the form of PhD, masters, first degree, OND, HND or NCE. 514 (38%) obtained 'O' level results, 311 respondents about 23% attained Qur'anic education, 216 (16%) obtained primary school leaving certificate. 189 respondents constituting 14% have no opportunity of going school. This implies that majority of the household head have acquired secondary certificate.

However, 967 households (72%) are practicing monogamous marriage, while 385 remaining households reckoning 28% are practicing polygamous marriage. Furthermore, the result reveals that majority of the respondents in this study are located in the rural areas. As can be seen where 745 respondents (55%) are from rural areas and the remaining 607 constituting about 45% are from urban area. More so, 963 of the household heads reckoning 71% are salary earners, while 389 (29%) household heads are engaged in other occupations like business, farming etc.

Furthermore, from Table 1.1, the results indicated that out of 1352 respondents, 747 equivalent to 55% fall into the household size bracket of less than 6 people. 405 households (30%) are in the size range of 6-11 people. 200 of the remaining households reckoning about 15% have above 11 people in their households. This implies that majority of the households are having few members in the study area. Furthermore, 468 households reckoning 35% are receiving income of less than 20,000 naira, 623 household heads reckoning 46% are in the income range of 20,000-40,000 naira while 261 household heads representing 19% are receiving income of more than 40,000 naira. This means that majority of the household heads are fall in the income range of 20,000-40,000 naira which is the average income in the study area. Finally, 792 reckoning 59% are spending less than 20,000 naira on food, while 407 households reckoning 30% fall in the spending range of 20,000-40,000 naira on food. Also, 153 households representing 11% are spending more than 40,000 naira on food. This implies that majority of the households are spending less than 20,000 naira on food in the study area.

### **Inferential Statistics**

This section deals with the presentation and the interpretation of the results of the determinants of Household Food Consumption Expenditure as a Guide to Post-Conflict Growth in the study area.

**Table 1.2 Results of the Determinants of Household Food Consumption Expenditure**

Dependent Variable: Food Consumption Expenditure	
Independent Variables	
Age	0.297 (1.206) ***
Income	0.501 (18.70) ***
Gender	-0.004 (-0.146)
Household size	0.046 (6.202) ***
Educational level	0.032 (1.048) **
Location	0.062 (1.016) **
Family Type	-0.025 (-1.250) **
Occupation	0.010 (0.106) ***
Constant	10.050 (25.45) ***
R <sup>2</sup>	0.734
F value	217.10 ***

Significant at (\*\*\*) 1% (\*\*5%) (\*10%)

Source: Author's computation using Eviews version 9, extracted from appendix I

Based on the results in table 1.2, two set of independent variables (i.e. gender of household head and family type) have negative impact on the dependent variable, while the other set of six independent variables (i.e. age of household head, household monthly income, household size, educational level of household head, location and occupation of household head) have positive influence on the same dependent variable. As shown by the parameters in table 1.2 above, the results of some of the explanatory variables such as age, monthly income, household size and occupation were relatively high and significant at 1% level; whereas family type, educational level and location were significant at 5% level. Furthermore, gender was found not to be significant at any level.

Specifically, age coefficient is 0.297(1.206) indicating a positive and significant relationship between age of household head and monthly food consumption i.e., the older household heads spend more on food than the younger ones. This could be because the older household heads are more aware of the importance of quality food and cautious of their diet and therefore eat high quality and expensive food. Moreover, income coefficient of 0.501(18.70) indicates that there is positive and significant relationship between monthly income and monthly food consumption at 1% level. This implies that, when the income level of the household head increases, the household purchasing power increases, as such, more money will be available for food items in the household.

Furthermore, gender coefficient is -0.004(-0.146), negative and insignificant. This indicates that there is negative relationship between gender of household head and monthly food consumption. However, household size coefficient 0.046(6.202) has a positive and statistically significant impact on monthly food expenditure at 1% level. Thus, larger households spend more money on food than those households with smaller size. More so, educational level coefficient of 0.032(1.048) indicates that there is positive and significant relationship between level of education and food consumption expenditure at 5% level i.e., households where the head has more education, spend more on food than their less educated counterparts. The educational attainment might be a good proxy for the knowledge required to ensure efficiency in food purchasing.

Nevertheless, location coefficient is 0.062(1.016) indicating a positive and significant relationship between location and monthly food consumption expenditure i.e., urban households spend more than rural households on food consumption. Moreover, family type coefficient of -0.025(-1.250) indicates that there is negative relationship between family types and monthly food consumption expenditure i.e., households with polygamous marriage spend relatively less on food than their counterparts with monogamous marriage. Finally, the coefficient of occupation is 0.010(0.106), this indicates a positive relationship between occupation and monthly food consumption i.e., households with occupation spend more than their counterparts on food consumption. And the relationship is significant even at 1% level; as such there is significant relationship between occupation and food consumption expenditure.

However, from the result of the Table 1.2, the coefficient of determination  $R^2$  is 0.734, this indicates that approximately 73% of the variations in the dependent variable (food consumption) are explained jointly by the independent variables (age, gender, income, household size, educational level, location, family type and occupation). This indicates that 27% of the variations

in food consumption are explained by some variables not controlled in the model. This implies that a unit change in all the independent variables could bring about 73% changes in the dependent variable (food consumption).

Furthermore, F value is 217.10 and significant at 1% level, indicating that the model is adequate and significant. Therefore, based on the above, all the three null hypotheses stated are rejected which are: firstly, demographic characteristics do not have significant impact on household food consumption pattern in Borno State. Secondly, economic factors do not have significant impact on household food consumption pattern in Borno State and lastly there is no households' responsiveness to food consumption with changes in income in Borno State. Therefore, all the three alternative hypotheses were accepted i.e.: firstly, demographic characteristics have significant impact on household food consumption pattern in Borno State. Secondly, economic factors have significant impact on household food consumption pattern in Borno State and lastly there is households' responsiveness to food consumption with changes in income in Borno State.

### Diagnostic Tests

This section deals with the presentation and the interpretation of the results of diagnostic tests of the data collected.

**Table 1.3 Results of the Diagnostic Tests**

Tests	Test Statistic	P-value
Normality	42074.79	4.0873
Serial Correlation	2.469135	0.0625
Heteroskedasticity	0.72	0.4305
Functional Misspecification	1.429594	0.1489
Multicollinearity		
Variables	Variance Inflation Factor	
Age	2.18	
Income	2.17	
Gender	1.36	
Household Size	2.49	
Education	1.10	
Location	1.09	
Family Type	1.81	

Occupation

1.11

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Source: Author's computation using Eviews version 9, extracted from appendix II-IV

Table 1.3 presents the results of diagnostic tests for normality inform of Jarque-Bera, serial correlation in form of Breusch-Godfrey Serial Correlation LM Test, heteroscedasticity inform of Breusch-Pagan-Godfrey, functional misspecification in form of Ramsey RESET Test and multicollinearity. The results revealed that the model has passed all the tests conducted. Thus, the results indicate the absence of any problem.

### Discussion of Findings

This study has assessed the determinants of Household Food Consumption Expenditure as a Guide to Post-Conflict Growth in Borno state of Nigeria. Ordinary least squared (OLS) in the form of multiple regression models together with descriptive statistics were used. As for diagnostic tests; the study applied multicollinearity test, serial correlation test, normality test, heteroscedasticity test and functional misspecification test. From the table 1.2, it is observed that age had positive and statistically significant impact on food consumption expenditure at 1% level of significance. Thus, the older household heads spend more on food than the younger ones. This finding is in line with that of Mignouna *et al.* (2015) where it was found that age was significant and affect household food consumption.

Furthermore, from the result in table 1.2, income variable also had positive and significant impact on food consumption expenditure at 1% level. This implies that, when the income level of the household head increases, the household purchasing power increases. This result is supported by Aminu, Adebajo & Mohammed (2016) and Babalola & Isitor (2014).

Gender is found to be negative and no significant relationship between gender of household head and food consumption expenditure. This concurs with the finding of Joseph (2012), but disagreed with the findings of Moses (2012) as they found positive significant relationship between gender of household head and food consumption expenditure.

Furthermore, household size had a positive and significant influence on food consumption expenditure. This implies that larger households spend more money on food than those households with smaller size. This is in line with the findings of Babalola and Isitor (2014). This implies that household size is an important determinant of food consumption expenditure.

Moreover, educational level had a positive and significant relationship with food consumption expenditure. This implies that households where the head has more educational level spend more on food than their less educated counterparts. This result is supported by the findings of Aminu, Adebajo & Mohammed (2016). Furthermore, results from the table 1.2 revealed that the location variable is positive and insignificant at any level. This means that urban households spend more than their counterparts in rural areas on food consumption. This is in line with the findings of Bozoglu, Bilgic, Yen, & Huang (2013). This means that location of household is an important determinant of household food consumption.

Finding of this study also indicates that family type is negative and statistically significant at 5% level. This implies that households with polygamous spend relatively less on food than their

counterparts with monogamy. Household with more than one wife might benefit from efficiencies in food purchasing brought by joint decision making. Finally, occupation is a positive and statistically significant consistent with those reported by Joseph (2012). This implies that occupation of household head is very important in influencing food consumption expenditure.

### **Summary of Major Findings**

The study investigated the determinants of household food consumption expenditure as a guide to post-conflict growth in Borno State of Nigeria. Inferential statistical tool i.e. Ordinary Least Square (OLS) in the form Multiple Regression Model was employed to specifically determine the factors influencing the food consumption expenditure in Borno. The findings of the study are summarized below:

- i. Family type has negative but significant impact on food consumption expenditure. That is households with polygamous marriage spend relatively less on food than their monogamous counterparts.
- ii. Age of the household head, household size, level of educational and location of household has positive and significant impact on food consumption expenditure.
- iii. Gender of household head has negative and no significant impact on food consumption expenditure.
- iv. Household monthly income and occupation of household head has positive and significant impact on food consumption expenditure.

### **Conclusion and Direction for Further Studies**

This study examine the impacts of food consumption expenditure in Borno state of Nigeria considering the demographic characteristics and economic factors. Based on the findings, it is concluded that both demographic characteristics and economic factors affect household decision positively to consume food in the study area except gender of household head.

Specifically, the study found that family type in the households have negative impact on food consumption expenditure.

Finally, household monthly income was found to have positive effects on food consumption expenditure. This implies that when household income increases, the household purchasing power also increase. Thus, household monthly income is said to be the major determinant of household food consumption expenditure.

### **Recommendations**

The followings are recommended based on the conclusion of the study;

- i. Since the findings revealed that income is a major determinant of food consumption expenditure in the study area, the study suggests that policy directed at increasing income level of workers should be given paramount attention so as to enhance their food purchasing power, reduce food insecurity and reduce poverty relative to food as well as making them have a higher standard of living.

- ii. Findings from the study showed a significant impact of family types in influencing food consumption expenditure, therefore there is need to provide employment opportunities among households including those with polygamous and monogamous marriage. This can be achieved through establishing skills acquisitions, and given micro credits to small and medium scale enterprises. This will enable them to increase their capacity by employing more people.
- iii. There is the need for government to improve the literacy level of household heads so that they would be able to identify and understand the nutritional implication of their food consumption and obtain a balanced diet from the limited available resources with them in order to leave active and healthy lives.
- iv. Findings of the study revealed a significant impact of household size on household food consumption expenditure where larger households spend more on food consumption than smaller households. Therefore, it is recommended that decision makers should formulate birth control policy aimed at ensuring food security by reducing the number of people per head, this can be achieved through sensitizing and enlightening of household heads on the need to make use of the various family planning units set up by the government to control the size of their households in order to reduce the food consumption expenditure.

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