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Analysis of Broiler Demand in Maiduguri Metropolitan Council, Borno State, Nigeria

[1]Gambo, A; [2]Abali, U, & [3]Bukar, U
[1]Department of Agricultural Economics and Extension, Lake Chad Research Institute, Maiduguri
[2]Department of Farming Systems, Lake Chad Research Institute, Maiduguri
[3]Department of Agricultural Economics, University of Maiduguri, Maiduguri
Email: abba.gambo@gmail.com

ABSTRACT
The study analysed Broiler demand among poultry consumers in Maiduguri Metropolitan Area of Borno State, Nigeria. Both primary and secondary data were used for the study. Questionnaire and personnel interview were used to collect data from fifty ((50) respondents sampled using stratified sampling procedure. Data were analysed using both descriptive and inferential statistics. The result of the descriptive statistics shows that majority (72%) and earned relatively amount #20,000 per month which indicates income level determine quality and quantity of broiler consume. The result of the multiple regression analysis shows that the socioeconomic variables are significant at 5% and 1% level of significance. The study therefore, recommended that government should make available broiler production inputs to the broiler producers so that price can be lowered for people to afford broiler.
Keywords: Analysis, Broiler, Demand, Maiduguri, Council.

INTRODUCTION
The dominant sector of the Nigerian economy is Agriculture. It accounts for about 70% of the economic activities of the country and employs about two-thirds of the nation's total labor force while accounting for about 45 percent of the increase in Gross Domestic Product (GDP) during the period 1990-2005 (Manyong *et al.,* 2005, IFAD, 2009). Specifically, the agricultural GDP is contributed by crops (84%), livestock (12%), fisheries (3%), and forestry (1%). Poultry production plays very important role for mankind through food supply, income and employment generation, providing raw materials to some industries, facilitating research works etc. poultry meat and eggs are good sources of vitamins and minerals, poultry meat and eggs supply rich protein and easily cooked dishes to human (Rayhan, 2012).

A broiler (Gallus gallus domesticus) is any chicken that is bred and raised specifically for meat production. Broiler production plays a very

important role in supply of protein for human's consumption. Healthy labor force is as a result of adequate protein intake. In a recent study of the nutrient content of rabbit meat to other farm animals by (FAO, 2008), it was found that broiler (chicken) has the most astounding protein content of 21-50 percent contrasted with rabbit and beef, which contain 20-22 percent and 18 percent respectively. Broiler production today has emerged as one of the fastest growing poultry segments with the increased acceptance of broiler chicken meat in cities, towns and villages. The demand for broiler is increasing day by day in fast pace. In Nigeria during the past few years, broiler farming has taken a U-turn from a backyard venture into a fast-growing commercial sector (Ikpi, 2007).

Demand is the desire to purchase goods and services. Demand is therefore an effective desire, thus desire and ability to buy are the key components of demand. The law of demand explains the functional relationship between quantity demanded of a commodity and its unit price. That means a rise in the price of broilers is followed by a reduction in the quantity demanded and a fall in price is followed by an extension of demand, with other conditions remaining the same (Roddy et al., 2004). In many developing countries like Nigeria specifically Maiduguri Borno State, consumption of broiler is seen as an adventure of the rich. The insurgency has caused tremendous economic down turn which are envisage to have negative effects on the feeding habit of inhabitants of the affected places. However, as a result of technological advancement, production of chicken has been on the increase in many parts of Maiduguri. Poultry accounts for 16% and 24% in the year 1997 and 2007 respectively in worldwide meat production (poultry year book, 2008). As with many other food materials, statistics on poultry meat tend to be less than the actual figures by a few percentages, as a result of inconsistencies and insufficient data.

In spite of the nutritive value of broiler product, it's production in Maiduguri is terribly insufficient due to the intensity of Boko-Haram attacks which has forced rural farmers to flee their homes leaving arable lands for years without cultivation and rearing of animals. Therefore, the broiler demand in Maiduguri has been affected by insurgency which has caused economic turn down, this make the supply of broiler to reduce and

this has caused a negative effect on the feeding habit of people in Maiduguri. The number of people displaced from part of the state to Maiduguri has increased the household size of many people in Maiduguri resident which could make the demand of broiler to change. Based on this, the study is designed to examine broiler demand in Maiduguri Metropolitan Council.

MATERIALS AND METHODS

The Study Area

The study area is Maiduguri metropolitan area council of Borno State which is one of the 27 local government areas, and is the state capital as well. The metropolitan area has occupied a total land mass of about 50,778 square kilometers. It lies between latitudes 11 5° N and longitudes 1 35° E (Bureau of land and survey 2009). It is located within the semi-arid zone of west of Africa and Sudan Savannah zone of northern Nigeria, at an elevation of about 345 meter above sea level (Department of land and survey 2009 and federal office of statistics annual report 2013). Maiduguri is bounded in the north by Jere L.G.A, south-west by Konduga L.G.A, and in the north-west by Mafa L.G.A. The months of March and April are the hottest while November to January being the coldest months. Maiduguri is characterized by a short rainy season starting from early June to late September with an annual rainfall of 500-600mm. Maiduguri has a projected population of about 4,171,104 people, consisting of 2,163,358 male and 2,007,746 female (National Population Commission 2006).

Maiduguri metropolitan council is a tropical type marked by dry and rainy seasons. It has a temperature and precipitation of 30° - 40°c and 500mm-600mm respectively. The rainfall lasts for three to four months in a year and mostly falls from June to September, followed by a long dry and hot period. The relative humidity at noon fluctuates between 35% in December and January and 45% in July and August (Lake Chad Research Institute 2001). The pattern of pasture growth is greatly determined by rainfall. The long dry season is characterized by a complete absence of green pasture and the vegetation cover ranges predominantly from shrubs to isolated large tree species of *Azadirachta indica, Gmelina arborea, Eucalyptus spp, Acacia albida, Adonsonia digitata, Tamarindus indicus* etc.

Sampling Technique

Stratified sampling technique will be employed to select five (5) wards out of the fifteen (15) wards that constitutes the local government area according to income earn. From each of the five (5) wards, ten (10) broiler consumers will be randomly selected to give a sample size of fifty (50) respondents for the study.

Methods of Data Collection

The data will be analyzed by means of descriptive statis and inferential statistics.

Descriptive statistics

The descriptive statistics include frequency distribution and percentages which will be use to analyze the socioeconomic characteristics of broiler consuming households and constraints of broiler demand (to achieve objectives i and iii).

Inferential Statistics

The inferential statistics include multiple regression analysis which will be use to analyze the factors that influence the demand for broiler (to achieve objective ii). The model is specified as follows:-

$Y = X_1 + X_2 + X_3 + X_4 + X_5 + X_6 + X_7 + U$

Where;

Y = expenditure on broiler consumed per household
X_1 = price of poultry (₦)
X_2 = household size (number)
X_3 = income of household per month (₦)
X_4 = food expenditure of household per month (₦)
X_5 = price of substitute (beef) consumed per month (₦)
X_6 = level of education of the head of the household (years)
X_7 = IDPs in the household (dummy=1 if yes and 0 if otherwise)
U = error term.

RESULTS AND DISCUSSION

Socio Economic Characteristics of the Respondents

The results in table 1 show that majority (72%) of the respondents were males and are married. This implies that more males are heads of families where the research was conducted. The result also shows that about (42%) of the respondents are with age limit between 21-30, which indicates that most of the respondents were in their active ages and no longer depend on anybody but rather people are depending on them and so, they have to work hard to make a living. About 15% of the respondents had tertiary education with 12% and 6%of them have secondary and primary education respectively. The higher the level of education, the more aware consumers become of the need for balance diet and the nutritional value of food.

More than (45%) of the respondents had household size of 6-10 persons, followed by 34% with household size of 11-15 members. This implies that large household size may create greater consumption, demand for resources sustenance and reduces broiler consumer's ability to take risk. The results also showed that farming business constitute 44% while civil servants and traders were 40% and 16% respectively. Generally, the household heads derive their income from farming business. Furthermore, the result also shows that 36% of the respondents make an amount of ₦ 20000 per month followed by 30% of thern with an amount of ₦11000 per month. This implies that income level determines the quantity and quality of food consumed.

Table 1: socio economic characteristics of respondents{n=50}

Characteristic	Frequency	Percentage %
GENDER		
Male	36	72.0
Female	14	28.0
Total	50	100.0
AGE		
<20	8	16.0
21-30	18	36.0
31-40	21	42.0
41-50	3	6.0
Total	50	100.0
MARITAL STATUS		
Married	39	78.0
Single	11	22.0

Total	50	100.0
EDUCATIONAL LEVEL		
Primary education	6	12.0
Secondary education	12	24.0
Tertiary education	15	30.0
Non formal education	11	22.0
M.Sc.	6	12.0
Total	50	100.0
HOUSEHOLD SIZE		
1-5	8	16.0
6-10	23	46.0
11-15	17	34.0
>15	2	4.0
Total	50	100.0
OCCUPATION		
Civil servant	20	40.0
Farming business	22	44.0
Trader	8	16.0
Total	50	100.0
MONTHLY INCOME		
<₦10000	4	8.0
₦11000	15	30.0
₦20000	18	36.0
>₦50000	13	26.0
Total	50	100.0

Factors Affecting Broilers Demand

From table 2 below, gender, age, marital status, educational level and expenditure are significant at 5% while household size, occupation, monthly income of the household per month and amount spent by the head of the house are significant at 1%. It shows that for any additional one unit in price of broiler, there will be 1.77 increase in monthly income of the consumers. It also shows that for any additional one person in the household, there will be increased in 1.27% in the household size. It also shows that for any 5% increase in expenditure per household, there will be an increase of 0.16% in household expenditure. Also, if there is additional one unit of amount spent, there will be an increase of 0.35% of the income to be spent on broiler.

The R^2 was estimated at 0.5317 implying that at 53% of the variable in demand for broiler was explained by the independent variables in the model specified.

Table 2. Factors Influencing Demand for Broiler

Variable	Coefficient	t-value	p.value
Gender	1.65	1.77**	0.076
Age	0.30	2.91**	0.006
Marital status	0.69	2.15**	0.32
Educational level	0.42	2.16**	0.037
Household size	1.27	4.85***	0.000
Occupation	0.90	3.19***	0.003
Monthly income	1.77	3.79***	0.000
Expenditure	0.16	2.77**	0.008
Amount spent	0.35	5.02***	0.000
Constant	3.59	2.95**	0.005
Log likelihood =-224.08, F value =406.65, N =50, R^2 =0.5317			

Source: Field Survey, 2019

Note: ***, ** are Significant at 1% and 5% respectively, figures in parenthesis are Z-values.

Constraints Limiting Broiler Demand

From the result below in table 3 below, it shows that majority 94% of the population don't eat broiler because of the high cost, 85% because of fear of disease and 78% because of non-availability. So there is need in subsidizing the price of broiler so that the less privileged can afford it. Also, there is need to for providing vaccines for the prevention of poultry disease like bird flu. Also, government should provide credit facilities, production inputs and feeds to ensure high productivity in broiler production.

Table 3: Distribution of Respondents According to Constraints faced by consumers in the Study Area

Constraint	Frequency	Percentage%
Fear of disease	43	86.0
Non-availability	39	78.0
High cost	47	94.0

Source: Field Survey, 2019

CONCLUSION AND RECOMMENDATIONS.

The study revealed that majority of household head were male, it also shows that majority of the respondent were married. The study also shows that majority of the respondent earn amount of ₦20000 per month. The study also revealed that broiler meat is expensive, so government should subsidize it, so that the poor can also afford it, it is because of high price that low-income earners substitute it with beef. it is also revealed that fear of disease also affects consumption of broiler. The study also shows that non availability is also a factor affect that affects consumption of broiler. Therefore, the study recommends that government should make available broiler production inputs to the broiler producers so that price can be lowered for people to afford broiler.

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