



ANALYSIS OF BEEF, MUTTON AND CHICKEN DEMAND IN BAUCHI STATE, NIGERIA

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ABSTRACT

The study examined the consumers demand and preference for meat in Bauchi State. A multistage sampling technique was used to select five hundred and eighty-six households in the study area and data were collected through the use of structured questionnaire. The data were analyzed using descriptive and inferential statistics. The results of the study revealed that, most (96.9%) of the household heads were male and married (89.8%) with about 35.7% of them having secondary education and 30.0% taken farming as their occupation. The study also revealed that, the mean monthly household head income and mean monthly expenditure on beef, mutton and chicken as ₦2,287.96, ₦1,946.04 and ₦1,734.44, respectively. It was further revealed that, households spend more on beef and least on chicken. The results of the regression analysis on the determinants of household demand for beef, mutton and chicken revealed that, household size, market locations, price of meat, household head monthly income and educational levels of the household head had a significant effects on meat demand in the study area. The result showed that, major constraints to meat consumption were financial problem, high cost of meat, health related problems, poor sanitary condition of meat vendors as well as high prices of other food items of necessities. Based on the result of this findings, it was therefore recommended that, federal/State governments should enhance economic boosting programmes to improve the income of consumers; there should be a concerted effort on the part of government and non-governmental bodies on measures of increasing animal feeds and feeding to boost animal production.

Keywords: Meat, Beef, Mutton, Demand, Bauchi.

INTRODUCTION

Meat and meat products are important sources of protein in human diets, and their consumption depends on socio-economic factors, ethics or religious beliefs, and tradition. The most important meat sources are from pigs, sheep, cattle, goats, chicken and camel. Apart from the muscles other parts of the animal collectively described as offal are also consumed (Kearney, 2010). The Livestock industry is the major source of protein supply for the large population contributing 5-6% of the country's total gross domestic product (GDP) and 15-20% of the agricultural GDP (Mshelbwala, 2013). Nigeria is a major hub of animal product consumption in West Africa and also one of the largest livestock-raising countries in the region. Meeting the ever-increasing domestic demand and access to these flourishing markets are major economic stakes for Nigeria and for the neighbouring Sahel countries that raise livestock (Bernard *et al.*, 2011).



Meat or meat cut has different individual or collective attributes consumers seek or prefer. Understanding consumer's pattern of meat choice and the reasons that influence their preferences are important so that meat quality assessment is a contentious issue as the definition of quality continues to evolve (Fortomaris *et al.*, 2006). Taste, nutrition, product safety and price are important determinants in food selection across the two worlds with more consumers in the developing countries demanding same product attributes as their counterparts in the developed countries (Ozimek, 2011). Culture, traditions, customs, taboos also play significant roles in the consumption of certain types of meat (Johnson *et al.*, 2011; Latvala *et al.* 2012; Okunlola, 2012; Gracia and De-Magistris, 2013) have investigated consumer preference for different meat sources and have placed preference value on those sources. Factors that influence consumer's preferences and willingness to pay for safety and quality attributes of meat are very essential in designing marketing strategies. However, little is known on the influence of individual preference and socio-economic factors on the demand of beef, mutton, and chicken to most consumers and traders of meat in Bauchi State because of the little or absence of empirical literature or research on consumer preferences and willingness to pay for meat attributes. The socioeconomic characteristics of the consumers are known but were not documented to most consumers and traders of meat in Bauchi State because of the little or absence of empirical literature or research on consumer demand on meat. This study, therefore, seeks to address these knowledge gaps. The aim of the study is to analyze the consumer demand for meat in Bauchi State, Nigeria. The specific objectives were to: (i). determine the influence of socio-economic characteristics on meat demand and preference in Bauchi State; (ii). analyze the factors influencing consumers demand of meat in Bauchi State; and (iii). describe the constraints associated with meat consumption in the study area.

MATERIALS AND METHODS

The Study Area

The research was conducted in six local government areas of Bauchi State, namely: Jamaare, Misau, Ningi, Toro, Katagum and Bauchi all in Bauchi State, Nigeria. The State comprises of twenty (20) Local Government Areas. According to the National Population Commission [NPC] (2006) the population of Bauchi State was 4,476,465 segregated to 2,426,215 males and 2,250,250 females. While according to the National Bureau of Statistics (2014) with recent increase in the rate of population growth (3.5% per annum) the study area has a total population of 6,640,580, segregated to 3,445,225 males and 3,195,355 females and are mostly peasants. This large population of the state engages in crop, livestock and fisheries production amongst others either in mixed farming or specifics as their dependable occupation.

Sampling Procedure

A multi-stage sampling technique was used in the selection of respondents. The State was divided into 3 agricultural zones according to the BSADP classification (BSADP, 2010). Thirty percent (30%) of the Local Governments in each of the zones were selected. Thus, two LGAs were randomly selected out of seven from western zone, one out of four in central zone and three out of nine from northern zone, making a total of six LGAs from the whole State. From each of the selected local government areas, the local government headquarters were purposively selected based on the predominance of meat vendors. Thirdly, from each of the selected local government headquarters 100 households were randomly selected making a sample size of 600 respondents for the study.



Method of Data Collection

Panel data were collected from 586 households out of 600 administered questionnaires recording a default of 14. The questionnaires were administered by well-trained enumerators. Information was collected on sex, marital status, age, household size, education level, occupation, and income of the household head, location, preference rating for the products.

Method of Data Analysis

The techniques for data analysis adopted included descriptive and inferential statistics. The regression model used was specified in semi log functional form and was used to achieve objectives i, and ii of the study. The model is specified as:

$$\ln Y_{ijkl} = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + u \dots \dots (1)$$

where;

$\ln Y_{ijkl}$ = Total Monthly expenditure (₦) on meat type i, j and k)

X_1 = Price of beef cut (₦/kg)

X_2 = Household monthly income (₦)

X_3 = Household size (Number)

X_4 = Level of education of the household head (Dummy variable)

X_5 = Age of the household head (years)

X_6 = Occupation of household head (Dummy variable)

X_7 = Marital Status of household head (Dummy variable)

X_8 = Market Location (Dummy variable)

b_1 ($I = 1 \dots 8$) are regression coefficients and are direct measures of elasticity.

b_0 = Constant term of intercept

u = Error term.

NB: The model was fitted for the meat types (beef, mutton and chicken total monthly expenditure). X 's and b 's remain as earlier defined as applied to each of them.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Chicken Consumers

Table 1 showed distribution of the respondents according to sex, marital status, educational level and occupation. The results showed that, most (96.9%) of the household heads were male while 3.1% were female because male-headed households were higher than the proportion of female-headed households. This also suggests dominance of male gender as household heads in the study area. More so, the males dominate marketing due to the cultural factors that encourages them to go out to purchase material needs of the family (Akinleye, 2009).

These results agreed with the findings of Eyo (2007); Ogunwale *et al.* (2009); Akinwumi *et al.* (2011), Tsegay (2012), Yakaka and Bashir (2012), Toluwase and Kolapo (2017) who reported that there were more male participants in their studies on meat in Niger-Delta, Ibadan, Ogbomoso, Ethiopia, Borno and Ondo, respectively. The results of the marital status of the respondents revealed that, majority (89.76%) were married, 7.68% were single, 1.87% was divorced and 0.68% widowed. This agrees with the findings of Moses *et al.* (2015) who found that majority of the consumers who prefer fish in Yola North Local Government Area of Adamawa State were married, Toluwase and Kolapo (2017) who also found that majority of chicken consumers in Ondo State were married and Mohammed *et al.* (2014). The Table 1 also shows the distribution of respondents according to educational level. The result revealed that 7.0% of the respondents had no formal education, 23.37% had quranic education, 8.20% had adult education, 7.50% had primary education, and 35.66% had secondary



education while 18.26% had tertiary Education. The findings showed that 35.66% of the respondents attended up to secondary school. This does not agree with the findings of Nnamdi (2010), Abdurrahman *et al.* (2013), Alimi, (2013), Toluwase and Kolapo (2016) who reported that majority of the respondents in their various studies had secondary education. The Table 1 further shows the distribution of respondents according to occupation. The result revealed that 30.03% were farmers, 26.62% were into business or trading, 24.23% of the respondents were civil servants, 15.87% were artisans and 3.24% falls within other jobs categories among others.

Table 1: Respondents according to sex, marital status, educational level and occupation

Variable	Frequency	Percentage
Sex		
Male	568	96.9
Female	18	3.1
Total	586	100.0
Marital Status		
Single	45	7.68
Married	526	89.76
Divorced	11	1.87
Widow	4	0.68
Total	586	100.00
Educational Level		
Non- educated	41	7.00
Quranic education only	137	23.37
Adult literacy education	48	8.20
Primary education	44	7.50
Secondary education	209	35.66
Tertiary education	107	18.26
Total	586	100.0
Occupation		
Civil servant	142	24.23
Business	156	26.62
Farming	176	30.03
Artisans	93	15.87
Others(pensioners)	19	3.24
Market location	586	
Total	586	100.0

Source: Field Survey, 2016

Respondents' Age, Household Size, Household Income and Income Categories

Table 2 results showed the distribution of respondents according to age, household size and household income. The results revealed that, the mean age, mean household size and mean household head income as 41years, 8 person per household and N47, 481.46 respectively. The findings are in agreement with Nnamdi (2010) in his study on the determinants of consumers' preference for safe chicken consumption in Imo State, Nigeria who stated that majority of the respondents had a mean age of 41 years and that of Moses *et al.* (2015) whose findings while studying the influence of socio-economic characteristics on consumer's preference on fish purchase in Yola North Local Government Area of Adamawa State revealed that, majority of the consumers who prefer fish were between the ages of 41-50.



Table 2: Respondents according to age, household size monthly income and income

Variables	N	Minimum	Maximum	Mean	Std. Dev
Age of hhead	586	18.00	80.00	41.77	11.188
Household Size	586	1.00	26.00	8.60	4.794
Household Income	586	6,000.00	300,000.00	47,481.46	38355.165
Total	586	100			

Source: Field Survey, 2016.

Household size had an important effect on the consumption pattern of food items. As the family size increases, there is tendency for the household to consume more food. The minimum number of 1 person and maximum of 26, with the mean number of 8 people per household were recorded. This finding agrees with that of Umar and Hamidu (2007); Olawuyi and Adetunji (2013); David *et al.* (2015) who in their various studies in Bauchi Metropolitan, Ogbomoso, Oyo State, Michika Local Government Area of Adamawa State and Bauchi State, Nigeria found that, an average household size is 9 and 8 person per household. The result in Table 2 further revealed that, the minimum income of the household head in the study area was ₦6,000.00 per month and a maximum of ₦300, 000.00 with a mean monthly income of ₦47, 481.46.

Quantity and Monthly expenditure of Meat

The results in Table 3 revealed the mean monthly quantity and expenditure of beef, mutton and chicken meats purchased per household as 2.42 kg, 2.27 kg and 2.38 kg, respectively. While the mean expenditure of ₦2, 287.96, ₦1946.04 and ₦1,734.44 were recorded for beef, mutton, and chicken respectively. This agrees with the findings of Ogunwale and Adedeji (2014) that the average meat purchased among staff and students of the University of Ibadan ranges from 0.5 kg to 3 kg (1.3 ± 0.6 kg). The result however, goes contrary to the findings of Umar and Hamidu (2007) who reported a mean weekly quantity of meat consumed as 2.30kg in Bauchi Metropolitan. The reason could be attributed to the fact that in 2007 there was no economic recession and the price of meat was relatively lower compared to the period of this study.

Table 3: Average quantities (kg) and monthly expenditure (₦) on meat per household

Variables	N	Minimum	Maximum	Mean	Std. Dev.
Beef					
Quantity(kg)	473	0.25	10.00	2.42	1.469
Expenditure(₦)	473	150.00	9,000.00	2,287.96	1406.758
Mutton					
Quantity(kg)	455	0.25	10.50	2.27	1.345
Expenditure(₦)	455	175.00	10,500.00	1,946.04	1231.688
Chicken					
Quantity(kg)	331	1.00	10.00	2.38	1.275
Expenditure(₦)	331	500.00	10,000.00	1,734.44	1228.279

Source: Field Survey, 2016.

The results in Table 3 further revealed a minimum quantity of beef, chevon, mutton, chicken and other meat consumed were found to be 0.25kg, 0.25kg, 0.25kg, 1chicken and 1.00kg of other meats while the maximum quantity of meat consumed were found to be 10.0kg, 8.0kg, 10.50kg, 10 chicken and 4.0kg of other meat, respectively.



The results also showed that, the minimum and maximum monthly expenditure on beef, chevon, mutton, chicken and other meat per household were ₦150.00, ₦175.00, ₦175.00, ₦800.00 and the maximum consumption expenditure were found to be ₦9,000.00, ₦5,600.00, ₦10,500.00, ₦10,000.00, ₦10,000.00 and ₦5,000.00. It also revealed a minimum and maximum total monthly expenditure on all the products as ₦150.00 and ₦19,800.00 respectively. The findings of this study are contrary to that of Olumide and Carlos (2017) in their study of meat demand in Nigeria that revealed the mean quantity of beef, goat, mutton, chicken and mean expenditure of meat as 1.16kg, 1.16kg, 1.55kg, 1.02 kg, ₦1,730.00 and Hamidu *et al.* (2015) that found a mean expenditure of ₦1,740.00 in their study on the preference and consumption pattern of meat in Bauchi Metropolis.

Determinants of Household's Expenditure Pattern on Meat

Table 4 revealed that, price of mutton and chevon cut (X_1), monthly household head income (X_2), household size (X_3), educational level of the household head (X_4), marital status of the household head (X_7), occupation (X_8) and market locations (X_8) were found to be significant at 1%, 5% and 10%. The coefficient of price (X_1) is positive and highly significant at 1% and 5% indicating that an increase in price of mutton and chevon will significantly increase the expenditure on mutton and chevon meat. This is contrary to priori expectation because price is expected to have a negative effect on consumption decision (Aepli and Finger, 2013). This is because the law of demand explains the functional relationship between quantity or expenditure of a commodity and its unit price which states that an increase in the price of a commodity is followed by a reduction in the quantity demanded and a fall in the price is followed by an extension of demand. However, there are exceptional cases where the law does not hold well especially on high priced commodities Reddy *et al.* (2012). When consumers view that those products which are superior are sold at higher prices, they do not mind to buy more of the same at higher prices.

In the case of this study consumers attached high value to mutton because of cultural and religious belief that they are tastier, use for religious festivities and have less health complications compared to beef. The findings agree with Aral *et al.* (2013) that the most significant factors affecting the consumption preference for mutton and lamb are taste, nutritional quality, health conditions, price, and appearance. An additional increase in price would increase the household expenditure on mutton by 0.002 units. The result also agrees with Ogundari and Akinbigun (2010) who reported that due to high price of quality meat, an average household would purchase chicken. Nilsson *et al.* (2006); Pouta *et al.* (2010) also noted that meat consumers that are price conscious represent a large segment of the market and those that are not averse to price form a small segment that have positive preference for the compositional quality, sustainable methods of production or value the nutritional attributes of quality meat.

Table 4: Regression analysis on determinants of household expenditure pattern on Meat

Variable	Beef Coefficient	Mutton Coefficient	Chicken Coefficient
Price of meat/kg(X_1)	0.00176 ^{ns} (0.001068)	.0020625*** (0.000576)	0.000126 ^{ns} (0.000142)
Monthly household income(X_2)	8.92E-07 ^{ns} (1.26E-06)	3.84E-06*** (1.19E-06)	3.91E-06*** (9.40E-07)
Household Size(X_3)	0.021226** (0.009657)	0.015949** (0.007851)	-0.00538 ^{ns} (0.00814)
Educ. Level(X_4)			
Quranic	-0.11847 ^{ns} (0.142448)	-0.31515** (0.12273)	0.024765 ^{ns} (0.132147)
Lit. educ	-0.27336 ^{ns} (0.170601)	-0.54749*** (0.148545)	-0.05289 ^{ns} (0.157948)
Primary	0.053309 ^{ns} (0.177538)	-0.33843** (0.145453)	0.280156* (0.161165)
Secondary	-0.17047 ^{ns} (0.149273)	-0.29722** (0.130235)	0.153741 ^{ns} (0.136477)
Tertiary	0.052314 ^{ns} (0.170282)	-0.3089** (0.153644)	0.314063** (0.152995)
Age of household head(X_5)	-0.00104 ^{ns} (0.003845)	-0.00109 ^{ns} (0.003424)	0.00385 ^{ns} (0.003259)
Occupation(X_6)			
Farming	-0.17831* (0.097343)	-0.14366 ^{ns} (0.092674)	0.072784 ^{ns} (0.087214)
Bussiness	-0.14502 ^{ns} (0.104717)	-0.10128 ^{ns} (0.097377)	0.096253 ^{ns} (0.091848)
Artisan	-0.18641 ^{ns} (0.117804)	-0.00637 ^{ns} (0.109322)	0.177138* (0.103276)
Others(pensioners)	0.036912 ^{ns} (0.214054)	0.072322 ^{ns} (0.185036)	0.345203** (0.159152)
Marital status(X_7)			
Married	0.098218 ^{ns} (0.137434)	0.147372 ^{ns} (0.137262)	0.011302 ^{ns} (0.118665)
Divorced	-0.1101 ^{ns} (0.248888)	0.101661 ^{ns} (0.237099)	-0.1064 ^{ns} (0.257871)
Widowed	-0.68193 ^{ns} (0.648345)	-0.30052 ^{ns} (0.372919)	

The coefficient of monthly household income (X_2) is also positive and statistically significant at 1% level implying that expenditure on mutton and chicken increases as monthly income increases. This implied that an increase in family income would translate to an increase in the quantity of meat consumed. Mutton and chicken are normal good which are income responsive; hence, as disposable income increases demand for these 2 meat products also increases. This finding corroborates with the results of Umar and Hamidu (2007), Alimi (2013)

who obtained a positive relationship between household income and meat consumption. This result agrees with the findings of Delgado *et al.* (2003), who found that the demand for fish is positively related to income, that is, as people's purchasing power (disposable income) increases, they demand for more quantity of chicken with the knowledge of its nutritive value also increases. The results also agree with Yakubu *et al.* (2013) who found a positive relationship between higher household income and beef preference in Sokoto State *ceteris paribus*.

Table 4: Regression analysis on determinants of household expenditure pattern on Meat
Cont'd.

Variable	Beef Coefficient	Mutton Coefficient	Chicken Coefficient	
Market location (X_8)				
Azare	0.58219*** (0.113753)	0.862386*** (0.125786)	-0.03607 ^{ns} (0.093349)	
Misau	0.278926* (0.142794)	0.74868*** (0.118204)	0.280265*** (0.106459)	
Ningi	0.830077*** (0.129196)	1.152465*** (0.258747)	-0.4285** (0.18114)	
Bauchi	-0.00221 ^{ns} (0.132172)	0.710398*** (0.20509)	-0.11474 ^{ns} (0.115277)	
Jamaare	0.911063*** (0.130549)	1.1785*** (0.159577)	0.110734 ^{ns} (0.096962)	
Constant	5.366611*** (1.057626)	4.796306*** (0.623392)	6.628293*** (0.248335)	
F-Value	8.73***	7.66***	4.06***	
Prob>F	0.000	0.000	0.000	
R-Squared	0.2974	0.2788	0.2170	
R-Squared adj	0.2673	0.2424	0.1635	
Root SME	0.61724	0.56773	0.454883	
N	586	586	586	

Note: Ns = Not significant *** Significant at 1%, ** Significant at 5%, *Significant at 10%
Figures in parentheses are standard errors.

Source: Field Survey, 2016.

The coefficient of household size (X_3) was positive and significant at 1% and 5% levels for beef and mutton indicating that as household size increases the demand for beef and mutton also increases and the more will be expended on the 2 meat products. This is in tandem with priori expectation where larger households will demand and consume more of meat. A similar result was obtained by Ekine *et al.* (2012) who reported that a unit increase in the number of people in the households will bring about an increase in the consumption of beef provided the income increases. The findings also agree with Selim *et al.* (2003), Yakaka and Bashir (2012), Yakubu *et al.* (2013), Amao and Ayantoye (2014) and Sichilima *et al.* (2015) that found household size as a significant factor affecting the demand of meat in their various research findings.

The coefficients of educational level of the household head (X_4) with respect to mutton were significant at 1% and 5% but inversely related with its demand. The reference point for education is the categories of non-educated households. This indicates that educated



households spend less on mutton when compared to non- educated households, while for chevon only the categories of households with literacy level of education were significant at 5% but negatively related with meat expenditure. The revealed influence of education on demand is not in expectation with the findings of Akinbode and Dipeolu (2012) that education had a positive effect on both participation and expenditure allocation on fresh fish in Nigeria, and other previous studies on meat consumption that educational attainment is a main determinant in food consumption choices and is positively correlated with healthy dietary intake (Moreira and Padrão, 2004). It could also be said that, the inverse relationship between these variables might imply that, educated households attached less importance to red meat because of the health implications associated with red meat.

However, among the coefficients of educational levels (X_4) under chicken demand, only the categories of household with tertiary and primary levels of education were found to be significant at 5% and 10%, respectively. This indicates that educated households with tertiary and primary levels of education spend more on chicken than non- educated households. The revealed influence of education on demand is in expectation with the findings of previous studies on meat consumption that educational attainment is a main determinant of food consumption choices and is positively correlated with healthy dietary intake (Moreira and Padrão, 2004; and Daniel *et al.*, 2011) that households with a better educated household head tend to have a higher demand for meat.

The results of the study for chicken demand further showed that in the category of occupation of the household head(X_6) only those in artisan and other categories of occupation such as pensioners were found to be positive and significant at 5%.and 10%, respectively. The reference point for occupation category is civil servant. This reveals that households with artisan and other job category spend more on chicken compared to civil service category possible because of more money coming into their hands daily not until months end in the case of civil servants. The coefficient of farming occupation under beef was found to be negative and significant at 10%, respectively. This indicates that farmers spend less on beef when compared to civil servants this may be attributed to the fact that farmers may have other sources of meat to consume from their domestic poultry production and so on in the study area.

The coefficients of market location (X_8) in Katagum, Misau, Ningi and Jamaare were found to be positive and significantly influenced the demand for beef. The reference point for the market location is Toro. The result of the study therefore, revealed that households in these locations spend more on beef when compared to households in Toro possibly because of the availability of the product in these locations. The estimated households' expenditure on beef in Azare, Misau, Ningi and Jamaare were found to be higher by ₦6.00, ₦5.60k, ₦6.20 and ₦6.27 than those households in Toro. The result of the study for mutton demand reveals that households in Azare, Misau, Ningi, Bauchi and Jamaare spend more on mutton than those households in Toro. The reason for this could be, first mutton is very available. The results of the analysis for chicken also indicated that the coefficients of market location (X_8) for chicken demand shows that only households located at Misau were positive and significant at 1% signifying that households in this location spend more on chicken than households in Toro because of the availability of more local chickens in Misau and which are cheaper compared to Toro. The coefficient of Ningi location were found to be negative and significant at availability of more poultry houses in Toro which raises broilers, layers and for their proximity to Jos Plateau State which are known for poultry production. All these may contribute in making the product available to the consumers when compared to Ningi. The estimated household head chicken expenditure in Misau was found to be higher by ₦6.90 than households

in Toro while the estimated households' expenditure on chicken in Ningi was found to be lesser by ₦6.51 than households in Toro. The findings agree with Liu *et al.* (2005) who reported a positive effect of urban location on beef expenditure. It also agrees with Mohammed *et al.* (2014) that the preferences for the traditional dairy products in Sokoto were positively determined by the location variable. The findings further agreed with Bett *et al.* (2012) in his study on the demand for indigenous chicken and other meat products in Kenya that socio-demographic factors such as household location, the proportion of household members and the family size are important factors in explaining perceived variations in the consumption of meat products. The coefficient of determination (R^2) of 0.29, 0.24, and 0.16 were obtained for beef, mutton, and chicken, respectively, indicating that only about 29%, 24%, and 16% of the variation in beef, mutton and chicken meat demand is explained by the variables used in the model. Consequently, the overall model is significant at 1% as indicated by the F- statistics.

Constraints to Meat Consumption

This section investigates the constraints to consumption and preference of meat as reported by the respondents and the result is presented in Table 5. The results showed that, about 47% of the respondents reported financial problem, high cost of meat (31.05%), health related problem (11.60%) as the most severe constraints to consumption of meat. Other constraints identified by the respondents were poor sanitary condition of meat vendors (8.70%), high prices of other food items (4.77%), unavailability of the products (2.80%), long distance to market (1.53%), poor storage of meat (1.02%), large household size (0.85%) and cultural belief (0.51%) even though they are the least. The relative high percentage of problems of finance as reported by the consumers could be attributed to the fact that at the time of collecting data for this study the country economy was in deep recession which might possibly be responsible for having this figure because respondents admitted that the economic situation then was what prevented them from having meat in their diet.

Table 5: Distribution of respondents according to constraint to meat consumption

Constraint	Frequency	Percentage	Rank
Financial problems	274*	46.75	1 st
High cost of meat	182	31.05	2 nd
Health related problem	68	11.60	3 rd
Poor sanitary condition of meat vendors	51	8.70	4 th
High prices of other food items	28	4.77	5 th
Unavailability of the product	17	2.80	6 th
Long distance to market	9	1.53	7 th
Poor storage of meat	6	1.02	8 th
Large household size	5	0.85	9 th
Cultural belief	3	0.51	10 th

*Multiple responses

Source: Field Survey, 2016

The findings of this study agreed with that of Moses *et al.* (2015) whose findings revealed that income, availability of fish and good storage facility were factors limiting consumers' preference for fish in Yola North local government area of Adamawa state, Akinwumi *et al.* (2011) who declared cost, availability and income as the most limiting factors of meat preferences and the findings of Yakubu *et al.* (2013) whose findings also revealed that



majority of the fresh beef consumers in Sokoto perceived price and availability of fresh beef as their major constraints to beef preference.

The findings agreed with Moses *et al.* (2015) whose findings revealed that income, availability of fish and good storage facility were factors limiting consumers' preference for fish in Yola North local government area of Adamawa state, Akinwumi *et al.* (2011) who declared cost, availability and income as the most limiting factors of meat preferences and the findings of Yakubu *et al.* (2013) whose findings also revealed that majority of the fresh beef consumers in Sokoto perceived price and availability of fresh beef as their major constraints to beef preference.

CONCLUSION AND RECOMMENDATIONS

It was evident from the findings of this study that the significant factors affecting the demand for meat were price, household head income, household size and market locations. However, it was discovered that the constraints to meat consumption as ranked by the respondents were financial problem, high cost of meat, health related problems, poor sanitary condition of meat vendors and high prices of other food items. Based on the findings of this study it is therefore recommended that the federal/State governments should come with programmes that will improve the income of consumers. There should be a concerted effort on the part of government and non-governmental bodies on measures of increasing animal feeds and feeding such as found in Cameroon and Ethiopia to boost animal production. This will be increasing the supply of animal products to the market and reduce the high cost of the products.

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