ANALYSIS OF PREFERENCE FOR SELECTED MEAT TYPES IN AKWA IBOM STATE, NIGERIA.

***Onwukwe, F. O and **Udokure, U. J**
*Department of Agribusiness and Management
**Department of Agricultural Economics
College of Agricultural Economics, Rural Sociology and Extension
Michael Okpara University of Agriculture Umudike, Abia State, Nigeria

ABSTRACT
The study examined the preference for selected meat types in Akwa Ibom State, Nigeria. A multistage sampling technique was used in the selection of 120 households for the study. Panel data were employed in the study. The data collected were analyzed using descriptive statistical tools and ordered probit model. Beef (73.3%), chicken (70.8%), chevon (59.2%), dog meat (38.3%) and pork meat (26.7%) inntheir order of magnitude were the most preferred meat type. The result of ordered probit model shows the log likelihood was -153.571 and 1 percent level of significance. The R^2 was 0.674 meaning 67.4% variability in the dependent variables were accounted for by the independent variables. However, age was statistically significant and negatively related to preference for beef, chevon, chicken, pork and dog meat at the 5% level of probability. Education was statistically significant and positively related to preference for beef, chevon, chicken, pork and dog meat at the 1% level of probability. Household size was statistically significant and positively related to preference for beef, chevon, chicken, pork and dog meat at the 5% level of probability. Price of beef, chevon, chicken, pork and dog meat were statistically significant and negatively related to preference for chevon at the 1% level of probability. Some of the meat types like dog meat and pork were least preferred in the study area. Mass sensitization campaigns should be launched to re-orientate households on the need of meeting their protein needs through the consumption of pork and dog meat, as this will help eradicate malnutrition as well as fostering demand for pork and dog meat in the study area. Age of the respondents exerted negative effect on preference for meat in the study area. Government should stabilize the income of the aged who are dependent class in the society through prompt payment of pension, gratuity and bursary as this will help them to make effective demand for meat. Education is an important factor that determines meat preference in the study area. In order to increase meat preference, government agencies, NGOs, meat firms among others should educate and inform consumers on types of meat available in the area, the health benefit of consuming some meat types like dog and pork meat in the area.

Keywords: Preference, selected, meat types

INTRODUCTION

Background to the Study

Meat consumption has its origin from the ancient period when man hunted and killed animals for meals within the wild. In the interim, taming of animals such as sheep, rabbits, pigs, birds and cattle set in at the advent of civilization resulting in expansive scale production of meat for public consumption. Universally, meat has been seen as animal tissue consumed primarily by man as food and it forms the fundamentally portion of man's diets because it has been confirmed to contain reasonable amount of protein, palatable and nutritious (Olaleru and Ogunsola, 2015).

Meat can be categorized into red or white meat, based on its nutritional contents as well as physiological and biological changes that take place after death. For example, mutton gotten from sheep, chevon gotten from goat and beef gotten from cattle belong to the red meat while pork from swine, chicken and turkey breast gotten from bird belong to the white meat (Keeton and Dikeman, 2017). More so, numerous customers purchase meat in little sizes or in adequate amount on daily basis, week after week or month to month premise from the market for meal preparation. Meat is regularly consumed after it has been cooked and prepared or handled in assortment of ways to meet the request of the consumer (Akinwumi, Odunsi, Omojola, Aworemi, and Aderinola, 2011). Meats contain B group vitamins (particularly niacin and riboflavin), iron, phosphorus, ash and calcium including dietary protein which is the primary source of amino acids. Amino acid contained in meat items are of two sorts; the essential amino acids, which cannot be made available by the body, but are required for development, improvement, and upkeep of human wellbeing and non-essential amino acid which can be produced by the body (Pasiakos, Agarwal, Lieberman and Fulgoni, 2010).

However, consumer preference for meat is the act of ranking different meat types from the perspective of relative intensity of desire for a meat type over others, without regard to prevailing market prices and consumer's income (Garba, Adamu, Assam, and Abdullahi, 2014). It encompasses all the processes and activities which buyers engage in when scouting for,

making of choices among various options, buying, utilizing, evaluating and disposing meat products with the sole aim of deriving utility (Santos, 2013). It could also be seen as the combination of qualities, quantities and tendencies characterizing an individual's use of meat. According to Bisschoff and Liebenberg (2017) increased consumers' preference for meat in Nigeria depends on consumer's meat selection habits which encompasses familiarity, taste, palatability, conformity, prestige, security, love, deprivation, availability etc.

Consumer preference for meat in Nigeria is constantly changing particularly that of meat items like beef, chicken pork among others, as consumer prefer meat types that are of improved quality and will definitely agree to pay higher amount for such meat types (Hossain and Deb, 2009). Expanding preference for healthy and nutritious meat types in Nigeria owing to consumer's instructive level, income as well as other components, have bred the burning desire for modern items and services. In fact, consumers want high quality products that also deliver specific benefits in terms of health, safety and environmental quality (Baba-darma, 2017). Adequate knowledge of meat preference contributes greatly to the overall growth and development of a nation. It helps meat industry to evaluate product development and marketing strategies as well as identify potential consumers of their meat products. Consumers' preference for meat is potentially influenced by factors such as price of meat, income of meat consumers, price of other meat types, population growth, demographic profile, household size, advertisement, season, food safety and the level of economic growth. Monitoring these factors over time can provide a comprehensive understanding of current meat consumption trend (Zhang and Goddard, 2014).

To a great extent, consumers' educational level and health status plays a critical role in meat demand and preference. Most consumers are seen reducing their preference for some meat types since they are aware of the danger associated with it, especially red meat which has been associated with health complaints like coronary heart disease and stigma from epidemic associated with the consumption of meat products (Akinwumi *et al.*, 2011**)**. From a closer scrutiny of the existing literature, it has become evident that the research on preference for selected meat types in Nigeria is thin (Alimi, 2013). Very few economic researches have been conducted on meat preference in Akwa Ibom State, with the available literature focusing on production and marketing of meat (Udoh, Mbossoh, Udoh and Akpan, 2013). The above statements could hinder efficient economic policy on meat preferences in the State. Some of the cardinal objectives of many meat firms are to create place, time, form unity, and to have the highest possible market share. Some of these firms are unable to attain the expectation height owing to paucity of information with regards to the pattern of meat preference in the study area. This could exert negative impact on the marketing performance of meat enterprises in the state (Baba-darma, 2014).

The broad objective of the study was to examine the preferences for selected meat types in Akwa Ibom State, Nigeria. The specific objectives were to:

1. examine the socio-economic profile of meat buyers;
2. Identify the consumers' preferences among the selected meat types;
3. assess the factors influencing consumers' preferences for the selected meat types.

THEORETICAL REVIEW

Consumer Behavior Theory

This theory is fundamental to this study and the assumption of this theory holds that consumers are rational and therefore make effort to allocate his limited resources among available goods with the sole aim of maximizing utility (Reddy, 2009). From the theory, the quantity of a commodity purchased by a purchaser relies on the prices of the commodity and his monetary income. Literature also asserts that commodities with negative income elasticity can be referred to as inferior, those with income elasticity between zero and one can be termed as normal goods while a commodity with income elasticity greater than one can be termed as superior goods. Demand and preferences varies with location and are consequent on the socio-economic, cultural factors and the educational level of the consumers, which to a great extent determine the pattern of consumption (Baba-Darma, 2014). In most studies conducted income and price remain the dominant factors that determine consumer preference (Gelgado, 1998). Goods and services are most often described in terms of their attributes (Grunert, 1997). Attributes could be seen as those features or characteristics that the product may possess (Cichon, 1999). For instance attributes of meat to a consumer might be price, taste, quality and packaging. Similarly, the attributes of other products considered by a consumer before purchase could range from quality, price, brand name, popularity to country of origin (Booth, 1995).

METHODOLOGY

The study was conducted in Akwa Ibom State, one of the 36 states in Nigeria. Akwa Ibom State can be found in the coastal southern part of the country, lying between latitudes 4°32′N and 5°33′N, and longitudes 7°25′E and 8°25′E (Udoh et al., 2013). It is located in the South-South geopolitical zone, which is bordered on the east by Cross River State, on the west by Rivers State and Abia State, and on the south by the Atlantic Ocean and the southernmost tip of Cross River State.

Akwa Ibom State was created in 1987 from the former Cross River State. It occupies a total land area of 7.246 square kilometers, with a projected population of 5,482,200 people (NPC, 2016). It is a Niger Delta State and currently one of the highest oil-and gas-producing states in the country, which is prone to oil spillage, acid rain and increasing ocean encroachment (Udoh, 2010). The State has 31 Local Government Areas, which are divided into three senatorial districts, viz Uyo, Ikot ekpene and Eket and six Agricultural Zones, viz. Uyo, Ikot Ekpene, Abak, Eket, Etinan and Oron. Akwa Ibom State was created in 1987 from the former Cross River State.

Sampling Technique

The study utilized a multistage sampling technique. All local government areas in Akwa Ibom State were clustered into three senatorial districts namely Uyo, Ikot Ekpene and Eket senatorial districts. One Local Government Area was purposively selected from the senatorial districts for the study based on population size as well as the number of meat enterprises which gave a total of three Local Government Areas namely: Uyo, Ikot Ekpene and Eket. From each selected Local Government Areas, two Clans were purposively selected namely Oku clan, Offot clan, Amayam, Ikot Obong Edong, Afaha clan and Idua clan from each of the three chosen Local Government Areas based on population size as well as the number of meat enterprises which gave a total of six clans for the study. Two villages were randomly selected from each of the chosen clans namely Afaha Oku and Ikot Ntuen Oku, Afaha Offot and Epri Nusara, Amayam Ikot Nkpo and Amayam Ntong Uno, Ifuho and Nkap, Afaha Atai and Afaha Ukwa, Atabong and Idua respectively, giving a total of 12 villages for the study. All villages selected were clustered into twelve (12) groups and ten households were randomly selected per cluster, giving a total sample size of 120 respondents.

Model Specification

Ordered Probit Model

Factors influencing consumers' preferences for the selected meat types

The standard ordered probit model was widely used to analyze discrete data of this variety and is built around and ordinal regression of the following form:

$Y^* = X^T \beta + E$….3.1

Y^*= Exact but unobserved dependent variable

X = Vector of independent variables

β = Vector of regression coefficients

X^T = Standard variables

Where:

Y^* = Preference for selected meat types (Dog meat=1, pork=2, chevon=3, chicken =4 beef=5)

X_1= Age (Years)

X_2= Education (Number of years)

X_3= Household size (Number of persons)

X_4= Income (Naira)

X_5= Price of the commodity (Naira)

X_6= Price of the substitute (Naira)

X_7= Taste (Good=1, otherwise=0)

β_0 = Intercept

β_1- β = Parameter estimate

ei = Stochastic variables or error term

RESULTS AND DISCUSSIONS

4.1 Socio economic characteristics of the respondents

Demand and preferences for meat have been known to be influenced by a number of socioeconomic factors. The following were the socio-economic characteristics of the household sampled during the survey.

4.1.1 Gender

The distribution of respondents according to Gender is presented in Table 4.1.

Table 4.1: Distribution of respondents according to gender

Gender	Frequency	Percentage
Male	58	48.30
Female	62	51.70
Total	**120**	**100.00**

Source: Field survey, 2019

The results from Table 4.1 showed that majority of the respondents were females (51.70%) while males accounted for (48.30%). This result implies preponderance of female household heads in the study area with regards to meat demand. This is probably because more women rather than men are universally in charge of meals preparation and they are likely to be met at home during data collection (Ibrahim, 2014). Also, gender could influence meat demand and preference and this was shown by Oyinbo (2014), who reported that gender was one of the socioeconomic factors that significantly influenced meat demand and preferences.

4.1.2 Age

The distribution of respondents according to Age is presented in Table 4.2

Table 4.2: Distribution of respondents according to age

Age	Frequency	Percentage
21-30	27	22.50
31-40	36	30.00
41-50	33	27.50
51-60	18	15.00
61-70	6	5.00
Total	**120**	**100.00**
Mean	**40.68**	

Source: Field survey, 2019

As indicated in the result from Table 4.2, 30.00% and 27.50% of the respondents were between the age of 31-40 and 41-50 years respectively. The result also showed that about 22.50%, 15.00% and 5.00% of the respondents were between the age ranges of 21-30, 51-60 and 61-70 respectively with the mean age of 40.68. However, age distribution is classified into four major age groups. These are, the youthful dynamic age group, which is made up of those within ages 20 years to 30 years, the actively productive working class which consist of those within ages 31 years to 45 years, the declining productivity age class which is made up of those within ages 46 years to 60 years and the old age class which is made up of those above 60 years (Oni, 2016). From the above categorization, most of the respondents (31-40 and 41-50 years) fall within the active working class, which implies that these age groups can make rational decision pertaining to meat demand and preference. They can also make effective demand for meat since they are actively working and are earning some forms of income. According to Omonona (2010), age was significant in influencing demand for chicken, yam flour and green leaves in semi-urban and rural households in south-west Nigeria.

4.1.3 Marital Status

The distribution of respondents according to marital status is presented in Table 4.1.

Table 4.3: Distribution of respondents according to marital status

Marital status	Frequency	Percentage
Single	32	26.67
Married	71	59.17
Widowed	13	10.83
Divorced	4	3.33
Total	**120**	**100.00**

Source: Field survey, 2019

The results in Table 4.3 showed that most of the respondents (59.17%) were married. (26.67%) were single, (10.83%) were widowed while (3.33%) were divorced. However, high percentage for the married indicates increased number of families, family members, increased family demand for meat and increased household head responsibilities in terms of meeting the protein needs of his family.

4.1.4 Educational Qualification

The distribution of respondents according to educational qualification is presented in Table 4.4.

Table 4.4: Distribution of respondents according to educational qualification

Education	Frequency	Percentage
NONE	7	5.83
FSLC	10	8.33
SSCE/GCE	5	4.17
OND/NCE	22	18.33
HND/B.Sc	56	46.67
M.Sc/Ph.D	20	16.67
Total	**120**	**100.00**
Mean	**14.79**	

Source: Field survey, 2019

The findings from Table 4.4 indicated that (46.67%) of the respondents bagged (HND/B.Sc). Among the other respondents, (18.33%) and (16.67%) obtained OND/NCE and M.Sc/Ph.D respectively. (8.33%) and (4.17%) obtained FSLC and SSCE/GCE respectively, while (5.83%) had no formal education. The educational qualification of the respondents appeared impressive with the mean value of 15.79 implying that majority of the respondent had formal education. This could be attributed to the educational environment of the study area in which education to some extent is free and compulsory (Akwa Ibom State Universal

Basic Education Board, 2014). The attainment of higher educational levels by most of the respondents does not only increase awareness of the importance of meat but also enhance access to job opportunities, which in turn increases disposable income and purchasing power, which might result in increased demand for meat in the area (Maurice, 2015). Nevertheless, educational status of household heads could influence demand and preference for meat since they are rational and could demand more of meat types with higher utility and forgo those meat types that are perceived to be frivolous, hazardous and injurious to their health (Olukosi, and Isitor, 1990).

4.1.5 Household Size

The distribution of respondents according to household size is presented in Table 4.5

Table 4.5: Distribution of respondents according to household size

Household Size	Frequency	Percentage
1-5	93	77.50
6-10	26	21.67
11-15	1	0.83
Total	**120**	**100.00**
Mean	**3.85**	

***Source:* Field survey, 2019**

As shown in Table 4.5, majority of the respondents (77.50%) had household size of 1-5, (21.67%) of the respondents had household size of 6-10 while (0.83%) of the respondents had household size of 11 and above. The mean household size in the study area was approximately four (4) persons. This implies that the household size of majority of the respondents were fairly large to have significant positive impact on household meat demand, as large household size indicates large protein requirement per head. The result conforms with Haq (2009) who noted that household size is an important determinant of meat demand.

4.1.6 Occupation

The distribution of respondents according to occupation is presented in Table 4.6

Table 4.6: Distribution of respondents according to occupation

Occupation	Frequency	Percentage
Farming	14	11.67
Trading	18	15.00
Civil service	29	62.49
Artisanship	5	4.17
Tailoring	8	6.67
Total	**120**	**100.00**

***Source:* Field survey, 2019**

The finding from Table 4.6 shows that (62.69%) of the respondents were civil servant, (15.00%), (11.67%), (6.67%) and (4.17%) of the respondents' occupation were trading, farming, tailoring and artisanship respectively. This result suggested that most of the respondents were civil servants, which implies that there is a greater tendency for the respondent to make effective demand for meat since they are all engaged in one form of occupation or the other, and might be earning reasonable amount of income (Oyinbo, 2014).

4.1.7 Monthly Income

The distribution of respondents according to monthly income is presented in table 4.7.

Table 4.7: Distribution of respondents according to monthly income

Annual income (₦)	Frequency	Percentage
1,000-99,000	57	47.50
100,000-199,000	35	29.17
200,000-299,000	17	14.17
300,000-499,000	11	9.16
Total	**120**	**100.00**
Mean	**₦146,669.00**	

Source: Field survey, 2019

The result from Table 4.7 indicated that (47.50%) and (29.17%) of the respondents had monthly income of ₦1,000-99,000 and ₦100,000-199,000 respectively. Only about (14.17%) and (9.16%) of the respondents had ₦200,000-299,000 and ₦300, 000–₦499, 000 as monthly income respectively. The mean monthly income was ₦146,669.00. However, high monthly income status of most of the households in the study area has positive implication on their household welfare status, as regard to meat demand and

preference. High monthly income implies increase in the purchasing power of the respondents. This result conforms with Okidim (2012) who showed that high household income influences food consumption.

4.1.8 Religion

The distribution of respondents according to religion is presented in table 4.8.

Table 4.8: Distribution of respondents according to religion

Religion	Frequency	Percentage
Christian	102	85.00
Traditional	18	15.00
Total	**120**	**100.00**

Source: Field survey, 2019

The result from Table 4.8 indicated that majority of the respondents (85.00%) were Christians while (15.00%) were into traditional religion. This implies that the study area is religiously heterogeneous. However, individual's living in societies that are more heterogeneous are less willing to follow religious norms. This findings conforms to Hong (2016) who conducted a study on the effect of religion on meat consumption and greenhouse gas emissions. According to Alimi (2013) religious believes have been noted to influence meat demand, as it is now a well-established fact that religious belief forbids some religion like Islam and some Christian sects from eating some meat types.

4.1.9 Household expenditure for meat per month

The distribution of respondents according to household expenditure for meat per month is presented in table 4.9.

Table 4.9: Distribution of Respondents according to household expenditure for meat per month

Annual income (₦)	Frequency	Percentage
100-900	8	6.67
1,000-9,000	100	83.33
10,000-19,000	9	7.50
20,000-29,000	3	2.50
Total	**120**	**100.00**
Mean	**₦5,505.83**	

Source: Field survey, 2019

The result from Table 4.9 indicated that household expenditure on meat for majority of the respondents (83.33%) was ₦1,000-9,000. While (7.50%, 6.67% and 2.50%) expenditure for meat was ₦10,000-19,000, ₦100-9,00 and ₦20,000-₦29, 000 respectively. The mean value for household expenditure on meat was ₦5,505.83. This findings implies that on the average, household monthly expenditure for meat for most of the respondents was ₦5,505.83.

4.2 Consumers' preference for selected meat types

The distribution of respondents according to preference for selected meat types is presented in table 4.10.

Table 4.10: Distribution of respondents according to preference for the selected meat types

Meat type	Frequency	Percentage	Rank
Chevon	71	59.2	3th
Chicken	85	70.8	2nd
Pork	32	26.7	4th
Beef	88	73.3	1st
Dog meat	46	38.3	5th

Source: Field survey, 2019

Table 4.10 presents the household preference for the selected meat types such as chevon, beef, pork, chicken and dog meat. The frequency was based on multiple responses, which means that a respondent preferred more than one meat type in the study area. From the result, beef (73.3%) was the mostly preferred meat type in the study area. This could be due to the fact that beef is available in the study area. Also, chicken and chevon were also preferred in the study. This could be attributed to the fact that beef and chevon are tasty and available in the study area.

4.3 Factors affecting consumers' preferences for the selected meat types (chevon, beef, pork, chicken, dog)

The ordered probit regression estimates of the factors affecting consumers' preferences for selected meat types in Akwa Ibom State are presented in Table 4.11

Table 4.11: Ordered probit regression analysis of the factors affecting consumers' preferences for selected meat types in Akwa Ibom State

Variables	Parameters	Coefficient	S. Error	Wald
Age	β_1	-0.089	0.043	-4.321**
Education	β_2	0.249	0.070	12.570***
Household size	β_3	0.491	0.217	5.144**
Income	β_4	-1.554	1.953	-0.633
Price	β_5	-0.000	0.000	-7.824***
Taste	β_7	0.673	0.367	3.362*
Chi-square	**134.657**			
Log likelihood	**- 153.571**			
Pseudo R^2	**0.674**			

Source: Field Survey, 2019, *** = Significant at 1% level, ** = Significant at 5% level * = Significant at 10% level

Table 4.11 presents the factors affecting consumers' preferences for selected meat types in Akwa Ibom State. The ordered probit consisting of six independent variables was used. Table 4.2 shows a chi-quare of 134.657 percent at 1percent level of significance implying that the model has a good fit to the data. The log likelihood was -153.571 and 1 percent level of significance. The R^2 was 0.674 meaning 67.4% variability in the dependent variables were accounted for by the independent variables. Six out of the seven regressors were significant at various levels of significance.

However, age was statistically significant and negatively related to preference for beef, chevon, chicken, pork and dog meat at the 5% level of probability. The negative sign indicated that the aged were more concerned with the products nutritive value. A possible reason might be that the aged in the study area were more concerned about health related problems associated with some meat types like beef, chevon and dog meat which as classified as red meat. Also, at old age preference for for beef, chevon, chicken, pork and dog meat might drop since they are dependent and might be lacking purchasing power for chevon.

Education was statistically significant and positively related to preference for beef, chevon, chicken, pork and dog meat at the 1% level of probability. This implies that as the respondents' educational level increases, their preferences for beef, chevon, chicken, pork and dog meat increases. This could be attributed to the fact that educated people are associated with high income and they are more aware of the nutritive value of beef, chevon, chicken, pork and dog meat as good protein sources, hence, their increased preference. This finding collaborates with Salawu et at., (2014) who carried out a study on consumption and consumer preference for poultry meat types in Ibadan Metropolis. More so, the reasons are not far-fetched as education guides the decision on proper dietary source that would improve state of health. This is also consistent with the findings of Amimo (2011) who reported that education empowers people, strengthens their abilities to meet their needs and increase their productivity and potential to improve their quality of life.

Household size was statistically significant and positively related to preference for beef, chevon, chicken, pork and dog meat at the 5% level of probability. This implies that as the respondents' household size increases, their preferences for beef, chevon, chicken, pork and dog meat meat increases. Price of for beef, chevon, chicken, pork and dog meat were statistically significant and negatively related to preference for chevon at the 1% level of probability. This implies that as price of beef, chevon, chicken, pork and dog meat increases, preference in favour of beef, chevon, chicken, pork and dog meat decreases. A possible reason may be that increased price of beef, chevon, chicken, pork and dog meat have given the respondents signal to switch to other meat types. Also, the respondents are rational and prudent in spending, they prefer meat types that are less expensive to beef, chevon, chicken, pork and dog meat. This finding is consistent with theory, as consumers will prefer other meat types that are less-expensive and affordable in the study area to beef.

CONCLUSION

The empirical result of this study revealed various points of interest for relevant stakeholders, meat firms, policy makers, government and other researchers. Based on the empirical results, beef (73.3%), chicken (70.8%), chevon (59.2%), dog meat (38.3%) and pork meat (26.7%) were the most preferred meat type in the study area. The result of ordered probit model shows the log likelihood was -153.571. The R^2 was 0.674 meaning 67.4% variability in the dependent variables were accounted for by the independent variables. However, age was statistically significant and

negatively related to preference for beef, chevon, chicken, pork and dog meat at the 5% level of probability. Education was statistically significant and positively related to preference for beef, chevon, chicken, pork and dog meat at the 1% level of probability. Household size was statistically significant and positively related to preference for beef, chevon, chicken, pork and dog meat at the 5% level of probability. Price of beef, chevon, chicken, pork and dog meat were statistically significant and negatively related to preference for chevon at the 1% level of probability.

RECOMMENDATIONS

Based on the findings of this result, the following recommendations were made:

i. Some of the meat types like dog meat and pork were least preferred in the study area. Mass sensitization campaigns should be launched to re-orientate households on the need of meeting their protein needs through the consumption of pork and dog meat, as this will help eradicate malnutrition as well as fostering demand for pork and dog meat in the study area.

ii. Age of the respondents exerted negative effect on preference for meat in the study area. Government should stabilize the income of the aged who are dependent class in the society through prompt payment of pension, gratuity and bursary as this will help them to make effective demand for meat.

iii. Education is an important factor that determine meat preference in the study area. In order to increase meat preference, government agencies, NGOs, meat firms among others should educate and inform consumers on types of meat available in the area, the health benefit of consuming some meat types like dog and pork meat in the area.

REFERENCES

Akinwumi, A. O. Odunsi, A. A. Omojola, A. B. Aworemi, J. R. and Aderinola, A. O. (2011). Consumer perception and preference for meat type in Ogbomosho area of Oyo State, Nigeria. *International Journal of Applied Agricultural and Apicultural Research,* 7(1), 8-15.

Alimi, S. R. (2013). An analysis of meat demand in Akungba-akoko, Nigeria. *Nigerian Journal of Applied Behavioral Sciences,* 1(1), 96-104.

Amimo, J. O. (2011). Socio-economic characteristics and perceptions of cattle keepers and constraints to cattle production in Western Kenya. *Livestock Research for Rural Development,* 23(6),2-11.

Baba-darma, I. D. (2014). Consumer preferences and demand for livestock products in Kano Metropolis, Nigeria. A Ph.D Thesis submitted to the department of Agricultural Economics, Faculty Of Agriculture, University Of Nigeria, Nsukka in partial fulfillment of the requirements for the award of doctor of philosophy (Ph.D) degree in agricultural economics (marketing and agribusiness).

Bisschoff, C. A, and Liebenberg, C. C. (2017). An analysis of consumers' preferences of meat in a typical South African township. *Journal of contemporary management*, 14(10), 584-594.

Garba, S. A, Adamu, S. H, Assam, E. D and Abdullahi, A. N. (2014). Consumers' preferences for selected Nigerian meat types in Sokoto metropolis, Sokoto State. 48th annual conference of Agricultural Society of Nigeria, at University of Abuja, Abuja, Nigeria, 48.

Haq. A. K. (2009). Factors influencing buying attitude of pricing products and its impact to Malaysian market. *International Review of Business Research Paper,* 5(2), 383-401.

Hong, Y. A. (2016). The effect of religion on meat consumption and greenhouse gas emissions. *Journal of Economic Growth*, 8(2), 15-19.

Hossain, M. K. and Deb, U. B. (2009). Food security and containing escalation in prices: Facts and implication for policy. Key note paper presented at the CPD conference on development with equity and justice—Immediate tasks for the newly elected government, Dhaka, 15.

Igwe, K. C and Onyekwere, O. N. (2007). Meat demand Analysis in Umuahia Metropolis, Abia State, Nigeria. *Agricultural Journal,* 2(4),550-554.

Keeton, J. T and Dikeman, M. E. (2017). Chemical and physical characteristics of meat: Adi-pose tissue. *Encyclopedia of meat sciences 2e. Elsevier Science Publishers,* 1(1), 222–234.

Maurice, D. C. (2015). Analysis of factors affecting meat demand in Michika local government area of Adamawa state, Nigeria. *Journal of Plant and Agriculture Research*, 1(1),1-6.

NPC (2016). National population commission estimated population figures. Abuja: National Population Commission of Nigeria.

Obasi, O. L, Ekanem, E.O. Ifut, O.J. and Ogbebor, M.E. (2002). Food animal supply and consumption pattern in Akwa Ibom State, Nigeria. *Global Journal of Agricultural Sciences,* 1(1), 1-10.

Okidim, I. A. and Tuaneh, G. L. (2015). Econometrics analysis of aggregate demand for meats in Rivers State, Nigeria. *International Journal*

of Applied Research and Technology, 10(4): 3-8.

Olaleru, I. F and Ogunsola, O. O. (2015). Consumer preference and consumption patterns for meat in Ekiti State, Nigeria. *International Journal of Applied Research and Technology*, 10(4), 125-131.

Olukosi, J.O., S.U. Isitor and M. O. Ode (2012). *Introduction to agricultural marketing: principles and applications*. Living Books Series, GU Publications, Abuja FCT, Nigeria. Chapter 2.

Olukosi, O. J and Isitor, S. U. (1990). *Introduction to agricultural marketing and prices.* Living Books Series. GU Publications. Abuja FCT, Nigeria.

Omonona, B. T. (2010). Household food demand analysis: A survey of semi–urban and rural households in South-West Nigeria. *Global Journal of Pure and Applied Sciences*, 15(4), 315-324.

Oyinbo, O. D. (2014). Household demand structure for rice consumption in Kaduna state, Nigeria. *Global Journal of Science Frontier Research Agriculture and Biology*, 10(1):15-22.

Pasiakos, S. M, Agarwal, S. B, Lieberman, H. R and Fulgoni, V. L. (2010). Sources and amounts of animal, dairy, and plant protein intake of US adults. *Journal of animal science*, 7(1), 70-79.

Salawu, M. B, Ibrahim, A. G, Lamidi, L. O and Sodeeq, A. E. (2014). Consumption and consumer preference for poultry meat types in Ibadan Metropolis. Journal of Economics and Sustainable Development, 28(5), 1-10.

Santos, R. A. (2013). Meat demand analysis: A case study of Akungba-Akoko Township in Ondo State. Economics Department, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria.

Udoh, E. J. (2010). Economic Analysis of Land Allocation Use and Intensification among Arable Crop Farmers in Uruan Local Government Area of Akwa Ibom State. *Journal of Economics and Sustainable Development.* 12(2), 1-10

Udoh, E. J. Mbossoh, E. R, Udoh, E. S. and Akpan, S. B. (2013). The structure of food demand in urban city of Nigeria: an application of a linearized almost ideal demand system (LA/AIDS). *Journal of Development and Agricultural Economics*, 5(1), 12-18.

Zhang, X. A and Goddard, E. U. (2014). Analysis of value-added meat product choice behavior by Canadian households. Department of Rural Economy University of Alberta Edmonton, Canada.