CONSUMERS' PERCEPTION ABOUT MEAT TYPES AMONG STUDENTS OF THE UNIVERSITY OF AGRICULTURE ABEOKUTA, OGUN STATE.

Elegbede, V. A, Afolami C.A, and Oyedepo. E.O

Department of Agricultural Economics and Farm Management
Federal University of Agriculture, P.M.B 2240, Abeokuta, Nigeria.
Lead author: asikavivian@yahoo.com Phone number: 08060156956
Co-author: lolaoyedepo1@gmail.com Phone number: 08038648941

ABSTRACT
This study carried out the Analysis of Consumers' Perception about Meat Types among Students of the University of Agriculture Abeokuta Ogun State. The study utilized primary data collected from 150 students of the University through the administration of questionnaire. A stratified random sampling technique was utilized to sample students from each level of 100-500 and post graduate level in which 25 students were selected from each level. The data collected were analyzed with descriptive statistics, a seven point likert-scale. The mean monthly expenditure on meat types revealed that beef (₦462), chicken (₦399) and fish (₦294) represent 24.22%, 20.94% and 15.38% percentage respectively of the income of the students. In terms of perception of various meat types by taste, chicken was the most preferred with a mean of 5.58, perception by nutritional content and cholesterol level revealed that fish was most preferred with a mean of 6.31 while pork was least preferred with a mean of 6.42. Results also revealed that in terms of economic value and ease of cooking turkey and fish were most preferred protein sources. In terms of overall preference, beef was most preferred among the students. Based on the findings, it is therefore recommended that there is a need to increase the supply of beef, chicken and fish in shops close to students' residence as they were found to be the most important meat types consumed.

Keywords: *consumer choice, meat types, university students, consumer perception, most consumed*

INTRODUCTION
Nigeria is faced with nutritional food problem which is mostly due to inadequate food supply, poor income, lack of proper education on food consumption habits, price of food items and unemployment. This problem has spread to the students who really need good food with good nutritional value in order to be able to withstand the rigour of education and also to meet up with their counterpart in developed countries. Meat is an important component in the daily diet of a large proportion of society and is regarded as a valuable food from a nutritional perspective. Meat provides important nutritional elements including protein, fats, vitamins, and minerals that efficiently aid in the normal functioning of body systems of consumers. Nwaoney, (2011)

However, students may have preference for a particular meat type as a result of socio-economic factor like allowance received, sex and meat attributes such; as taste, cholesterol, nutritional content, economic value, fat, convenience/ease in cooking and overall preference. These factors also influence their eating habits, diet choice and meat or other types of food consumption. However, most of them are impoverished and cannot afford a two square meals not to talk of a three. Therefore, hunger and malnutrition are common feature of these class of people who are learning under harsh economic condition. Nwaoney, (2011).

Studies on consumers' preference are better appreciated by the food industry since they can explain consumers' decisions (Rimal, and Fletcher, 2003) and should be considered when commercial policies are designed (Diez *et al*., 2006). Studies carried out in Czech Republic indicated that chicken and pork were the most consumed (Ogunwole, and Adedeji, 2014).

Tsegay (2012) reported that chicken, beef and chevon were the most preferred livestock meat in Ethiopia, Studies on the consumers perception and preference for the different types of meat in Nigeria have not been adequately documented. Ogunwole *et al*. (2009) reported that broiler meats was most preferred among chicken meats by employees of University of Ibadan, Ibadan while Akinwunmi *et al*. (2011) indicated that beef was the most preferred meat in Ogbomoso, Nigeria. Futherrmore, students are the potential work-force of any nation being the future heads of parastatals, managers of private companies, policy and decision makers. It is therefore important that the food consumption pattern of students be given adequate consideration. This study was therefore, undertaken to assess the consumers' perception of the different types of meat among students of the University of Agricilture, Abeokuta , Nigeria.

MATERIAL AND METHODS
Sampling and Collection
The study was carried out at the Federal University of Agriculture, Abeokuta. The University has a 10,000-hectare campus which is located next to the Ogun-Oshun River Basin Development Authority on Abeokuta-Ibadan road in the North Eastern end of the city, 15km from Abeokuta city centre.
A well-structured questionnaire was prepared for the study and administered to 150 stratified randomly sampled respondents student. Data collected include socioeconomic characteristics of the respondents, monthly expenditures on meat types, Consumers' perception of various meat types (e.g. beef, pork, chicken, fish, turkey, goat meat, bush meat), factors influencing consumers' choice of meat based on attributes such as; taste, nutritional content, cholesterol level, fat content, economic value, convenience/ease of cooking and overall preference. Data were analyzed, using descriptive statistics tools (SPSS, 2006) to

generate tables, means and frequencies. Consumers' perception of various meat types was assessed using a sevenpoint–likert scale (1-7) which took into consideration the various attributes of the meat. The attributes assessed are: taste, nutritional content, cholesterol level, fat content, economic value, convenience/ease of cooking and overall preference. The total score for each attribute is a summation of the individual score using the 1-7 scale, where 1 is very low attribute and 7 is very high attribute. Bar chart was then used to show the distribution of the mean perception score based on each attribute.

RESULTS AND DISCUSSION

The socio-economic characteristics of the students examined include age, sex, educational level of students, marital status, total monthly income (allowance) of the students, residential status, amount spent on substitutes as well as amount spent on food as shown in table 1. It was observed that majority (69.3%) of the students are within the age range of 19 to 24 years and constituted the largest group observed in the study while the least group were students between 31 and 34 years constituting 4.0% of the study population. This implies that majority of the students were young and active in age. More female (56%)

participants responding to the questionnaire as against (44%) for male this result was in linewith the observation of Diez *et al*. (2006) that reported more female participants in their study for identifying market segments in beef. This contrasted the report by authors (Eyo, 2007; Ogunwole *et al*., 2009; Akinwumi *et al*., 2011 and Tsegay,2012) that there were more male participants in Niger-Delta, Ibadan, Ogbomoso and Ethiopia respectively.Only (8%) of the students were married while (92%) were single. Equal numbers of students were sampled using their educational level. 25 people were randomly selected from each level constituting 16.7% of the study population. The result also revealed that (76%) of the students have household size within the range of 1 to 4 people and constituted the largest group observed in the study area. While the least group were students with 9-12 people in a household constituting 22.7% of the study population. About112 (74.7%) of the students were observed to be Christians while 38 (25.3%) were Muslims. Majority of the students 78 (52%) lived off campus while 72 (48%) of the students reside on campus. This implies that more than half of the students sampled under this study reside outside the University campus.

Table 1; Socio- Economic Characteristics of the Respondents.

Characteristics	Frequency	Percentage (%)
Age grade		
Below 18 years	8	5.3
19-24	104	69.3
25-30	25	16.7
31-34	6	4.0
35 years above	7	4.7
Sex		
Male	66	44.0
Female	84	56.0
Marital status		
Single	138	92.0
Married	12	8.0
Educational level		
100 level	25	16.7
200 level	25	16.7
300 level	25	16.7
400 level	25	16.7
500 level	25	16.7
Post graduate	25	16.7
Household Size		
1-4	114	76.0
5-8	34	22.7
9-12	2	1.3
Religious Affiliation		
Muslim	38	25.3
Christian	112	74.7
Place of residence		
Campus	72	48.0
Off campus	78	52.0
Total	**150**	**100.0**

Source; Computed from field survey, 2017

Monthly Expenditure on Meat Types and Substitutes

Table 2, showed the average amount of the income spent on meat consumption as ₦ 1,904 per month while the amount spent on substitutes such as egg and fish was ₦ 147. This implies that the students spent more on meat.

Table 2: Income Expenditure on Meat Types and Substitutes

Amount Spent		Mean (₦)	Std. Deviation (₦)
Total Expenditure on Meant (₦/Month)	150	1904.3	± 615.9
Monthly Allowance (₦/Month)	150	13,894.0	± 19,368.3
Total Food Expenditure (₦/Month)	150	5,291.3	± 5,992.1
Expenditure on Meat Substitutes	150	147.9	±97.0

Source; Field Survey 2017

Table 3: Revealed that 27.3% of the students received below ₦ 5001 per month, majority (44.7%) of the students received an income between ₦5001 and ₦10000 per month. While 13.3% of the students received ₦10001to ₦15000 per month and 14.7% of the students received above ₦15000 per month.

Table 3: Distribution of Respondents by Monthly Income/Allowance

Total Monthly Allowance (₦)	Frequency	Percent
Below 5001	41	27.3
5001 – 10000	67	44.7
10001- 15000	20	13.3
Above 15000	22	14.7
Total	**150**	**100.0**

Source; Field Survey 2017

Average Monthly Expenditure on Meat Types

Table 4, shows that beef accounted for the highest percentage of 24.4% of the monthly expenditure among female students while it constitutes 24.0% of the males. Also, chicken accounted for 20.4% of the total monthly meat expenditure among female students and 21.5% of total monthly expenditure of meat among male students. Furthermore, pork accounted for the lowest percentage of 7.0% and 6.0% of total monthly meat expenditure in male and female respectively.

Table 4: Monthly Expenditure on Meat Types by Sex

Meat Types	Male Mean	Amount (₦)%	Female Mean	Amount (₦) %
Beef	465	24.0	459	24.4
Chicken	416	21.5	383	20.4
Fish	292	15.1	295	15.7
Turkey	281	14.5	253	13.5
Bush meat	175	9.0	189	10.1
Goat meat	171	8.9	186	9.9
Pork	136	7.0	114	6.0
Total	**1936**	**100.0**	**1879**	**100**

Source; Field Survey 2017

Table 5, showed the percentage of the mean monthly income expended on the meat types. The results reveals that beef (₦462), chicken (₦399) and fish (₦294) represent 24.22%, 20.94% and 15.38% percentage respectively of the income of the students.

Table 5: Percentage expenditure on Different Meat Types

Meat Types	Amount Expended (₦)	Percentage of Total Expenditure (%)
Beef	462	24.22
Chicken	399.5	20.94
Fish	293.5	15.38
Turkey	267	13.99
Bush Meat	182	9.54
Goat Meat	178.5	9.35
Pork	125	6.55
Total Expenditure on meat	**1907.5**	**100**

Source; Field Survey 2017

Perception of Meat Types and Factors Influencing Consumers' Choice of Meat based on Attributes Taste

As regards the perception of various meat types by taste, the result revealed that chicken was the most preferred meat type by taste among the students with a mean of 5.58 and 16.2 % of the meat type by taste. Turkey meat revealed a mean of 5.41 (0.16%) as it is the second meat type preferred by taste classification. Beef was classified as the third preferred meat type among the students revealing a mean of 5.39. Bush meat was ranked fourth with a mean of 4.83 (14.52%) while fish was positioned as the fifth preferred meat type by taste with a mean of 4.73 (14.22%). Goat meat as well as pork was ranked sixth and seventh position with a mean of 4.24 and 3.08 respectively as depicted in the table 6 below.

Table 6: Perception of Meat Types and Factors Influencing Consumers' Choice of Meat based on Attributes Taste

Meat types	Mean attribute	Attribute Percentage (%)
Beef	5.39	16.2
Chicken	5.58	16.77
Turkey	5.41	0.16
Bush meat	4.83	14.52
Goat meat	4.24	12.74
Pork	3.08	9.26
Fish	4.73	14.22
Total	**33.26**	**83.87**

Source; Field Survey 2017

Nutritional Content

As regards the perception of students on the different meat types by its nutritional content, fish was categorized as the most preferred with a mean of 6.31 (17.95%). Chicken, turkey and beef are ranked second, third and fourth preferred meat types based on nutritional content with a mean of 5.29, 5.21 and 5.07 respectively followed by goat meat with a mean of 4.49 and bush meat ranked fifth with a mean of 4.69. Pork was observed as the least preferred meat type by nutritional content with a mean of 3.08 as depicted in table 7 below.

Table 7: Perception of Meat Types and Factors Influencing Consumers' Choice of Meat based on Attributes Nutrition Content

Meat types	Mean attribute	Attribute Percentage (%)
Beef	5.07	14.42
Chicken	5.29	15.05
Turkey	6.21	17.67
Bush meat	4.69	13.34
Goat meat	4.49	12.77
Pork	3.08	8.76
Fish	6.31	17.95
Total	**35.14**	**99.96**

Source; Field Survey 2017

As regards, the perception of students on the different meat types by cholesterol level, the result revealed pork as the least preferred meat type due to its very high cholesterol level as revealed by a mean of 6.42 (21.07%) among the respondent. Others in order of increasing cholesterol level revealed bush meat, chicken, goat meat, turkey and beef with respective mean of 3.88, 4.07, 4.13, 4.27 and 5.41 with 13.36%, 13.55%, 14.01% and 17.76%. Fish had the lowest cholesterol level and was mostly preferred as revealed by a mean of 2.28 (2.28%) as depicted in table 8 below.

Table 8: Perception of Meat Types and Factors Influencing Consumers' Choice of Meat based on Attributes Cholesterol Level

Meat types	Mean attribute	Attribute Percentage (%)
Beef	5.41	17.76
Chicken	4.07	13.36
Turkey	4.27	14.01
Bush meat	3.88	12.73
Goat meat	4.13	13.55
Pork	6.42	21.07
Fish	2.28	7.48
Total	**30.46**	**99.96**

Source; Field Survey 2017

Economic Value

As regards the perception of students on the different meat types by economic value, turkey was perceived as the highest economic valued among the meat types with a mean of 5.49 (16.72%) while chicken was considered as the second most preferred meat type due to its economic value with a mean of 5.39 (16.42%). Beef and bush meat also revealed a significant value economically and positioned third and fourth respectively. The mean of beef and bush meat was observed to be 5.13 (15.63%) and 4.91 (14.96%) respectively. Also, goat meat and pork were ranked fifth and sixth economically with a mean value of 4.12 (12.55%)and 4.37 (13.31%) respectively. It was observed that fish is the least economic valued meat type with a mean of 3.41 as depicted in table 9 below.

Table 9: Perception of Meat Types and Factors Influencing Consumers' Choice of Meat based on Attributes Economic Value

Meat types	Mean attributes	Percentage attribute (%)
Beef	5.13	15.63
Chicken	5.39	16.42
Turkey	5.49	16.72
Bush meat	4.91	14.96
Goat meat	4.37	13.31
Pork	4.12	12.55
Fish	3.41	10.39
Total	**32.82**	**99.98**

Source; Field Survey 2017

Fat Content

As regards the perception of students on the different meat types by perceived level of fat content, the result revealed pork as the meat type perceived with the highest fat content with a mean of 6.71 (21.59%) among the students. Other meat types by fat content revealed chicken, goat meat, turkey and beef with a respective mean of 4.28, 4.33, 4.58 and 4.92 with 13.77%, 13.93%, 14.74% and 15.83%. Fish had the lowest fat content and was mostly preferred with a mean of 2.45 (7.88%) as depicted in table 10 below.

Table 10: Perception of Meat Types and Factors Influencing Consumers' Choice of Meat based on Attributes Fat Content

Meat types	Mean attribute	Attribute Percentage (%)
Beef	4.92	15.83
Chicken	4.28	13.77
Turkey	4.58	14.74
Bush meat	3.8	12.23
Goat meat	4.33	13.93
Pork	6.71	21.59
Fish	2.45	7.88
Total	**31.07**	**99.97**

Source; Field Survey 2017

Conveniences/Ease of Cooking

As regards the perception of students on the different meat types by convenience/ease of cooking, the opinion of students revealed that the most convenient and easy to cook meat type is fish as revealed with a mean of 6.25 (19.59%). Following fish is the chicken as well as turkey with a mean value of 5.48 (17.51%) and 4.86 (15.53%). Others revealed pork, bush meat, goat and beef meats with respective mean of 3.38 (10.8%), 3.47 (11.12%), 3.48(11.12%) and 4.37 (13.96%) as depicted in table 11 below.

Table 11: Perception of Meat Types and Factors Influencing Consumers' Choice of Meat based on Attributes Conveniences/ease of cooking

Meat types	Mean attribute	Attribute Percentage (%)
Beef	4.37	13.96
Chicken	5.48	17.51
Turkey	4.86	15.53
Bush meat	3.47	11.08
Goat meat	3.48	11.12
Pork	3.38	10.8
Fish	6.25	19.59
Total	**31.29**	**99.59**

Source; Field Survey 2017

Overall Preference f Meat Types

As regards the perception of the students on the different meat types by perceived overall preference, majority of the students preferred beef to any other meat types with a mean of 6.01 (18.3%). The second preferred meat type revealed chicken as shown by a mean of 5.55 (16.9%),while turkey meat as well as fish occupies the third and the fourth position among the students overall preference of the meat types. Bush meat was ranked fifth with a mean of 4.21 (12.82%), while goat meat followed in preference with a mean of 3.97(12.09%). Pork meat revealed the least preferred with a mean of 2.53(7.70%) as depicted in table 12 below.

Table 12: Perception of Meat Types and Factors Influencing Consumers' Choice of Meat based on Attributes Overall Preference of Meat Types

Meat types	Mean Attribute	Percentage Mean Attribute (%)
Beef	6.01	18.3
Chicken	5.55	16.9
Turkey	5.35	16.29
Bush meat	4.21	12.82
Goat meat	3.97	12.09
Pork	2.53	7.7
Fish	5.21	15.86
Total	**32.83**	**99.96**

Source; Field Survey 2017

CONCLUSION

From the study, The mean monthly expenditure on meat types revealed that beef (₦462), chicken (₦399) and fish (₦294) represent 24.22%, 20.94% and 15.38% percentage respectively of the income of the students. This shows that students spend more on beef per month than other meat types. In terms of perception of various meat types by taste, chicken was the most preferred with a mean of 5.58 (16.77%), perception by nutritional content and cholesterol level revealed that fish was most preferred with a mean of 6.31 (17.95%)

while pork was least preferred with a mean of 6.42 (21.07%). Results also revealed that in terms of economic value and ease of cooking, turkey and fish were most preferred protein sources. However, in terms of overall preference, beef was most preferred among the students. Therefore, the first four most consumed meats are beef, chicken, fish and turkey based on meat attributes. Availability, income, meat attributes (such as taste, nutritional content, economic value, and ease of cooking) however influenced their choice of most consumed meats. Based on the findings, it therefore implies that these meats- beef, chicken, fish and turkey should be made available to students in many small unit outlets close to students' residential quarters. Furthermore, there is a need to increase the supply of beef, chicken, fish and turkey in shops close to students' residence as they were found to be the most important meat types consumed.

REFERENCES

Akinwumi, A. O., Odunsi, A. A., Omojola, A. B., Aworemi, J. R., Aderinola, O. A. (2011). Consumer perception and preference for meat types in Ogbomoso area of Oyo State, Nigeria. In International Journal of Applied Agricultural and Apicultural Research, Vol. 7, No. 1-2, p. 96-106.Biesalski, H. K. (2005). Meat as a component of a healthy diet – are there any risks or benefits if meat is avoided in the diet?. Meat Science, 70: 509–524.

Dıez, J., Del Coz, J. J., Bahamonde, A., Olleta, J. L., Macie, S., Campo. M. M., Panea B., and Alberti., P. (2006). Identifying market segments in beef:Breed, slaughter weight and ageing time implications. Meat science 74: 667-675.

Eyo, E. O. (2007). Consumers' preference for meat from food animals in the Niger Delta, Nigeria. Nig. J. Anim. Prod. 34 (1): 113-120.

Nwaoney, V.A. (2011). Meat Consumption and Consumers' Perception about Meat Types among Students of University of Agriculture Abeokuta, Ogun State. Nigeria. Unpublished Thesis in the Department of Agricultural Economics and Farm Management, Federal University of Agriculture Abeokuta, Ogun State. Nigeria.

Ogunwole, O. A. and B. S. Adedeji, **(**2014)Consumers' Preference and Perception of the different Types of Meat among Staff and Students of the University of Ibadan, Nigeria. Journal of Agriculture and Environmental Sciences June 2014, Vol. 3, No. 2, pp. 77-95

Ogunwole, O. A., Rahji, M. A. Y., Olomola, A. O., Hamzat, R. A., Uwagboe, E. O. And Mako, A. A. (2009). Consumer preference for different meats of chicken in Nigeria: A case study of University of Ibadan employees. Book of Abstracts, International Poultry Scientific Forum held at the World Congress Center, Atlanta, GA. USA. January 26-27.

Rimal, A.P. and Fletcher, S.M. (2003) Understanding Consumers' Attitude toward Meat Labels and Meat Consumption Pattern. A paper presented at The Southern Agricultural Economics Association Annual Meeting, Mobile, Alabama, February 1-5, 2003.

Tsegay, H. (2012). Consumer perception and preferences of meat types in Harare and Haramaya province, Ethiopia. Journal of Microbiology, Biotechnology and Food Science. 2(3): 959. Verbeke, W., and Vackier, I. (2004). Profile and effects of consumer involvement in fresh meat. Meat Science, 67, 159–168.