

## Consumers' Preference and Perception of the different Types of Meat among Staff and Students of the University of Ibadan, Nigeria

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### Abstract

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In a bid to study consumers preference and perception of the different types of meat among staff and students of the University of Ibadan, a well structured questionnaire was administered to 370 randomly sampled respondents staff and students of the University. The respondents belong to different categories within the university: Non Academic Staff Union 17 (4.6%); Senior Staff Association of Nigerian Universities 19 (5.1%); Academic Staff Union of Universities 24 (6.5%); National Association of Academic Technologists 10 (2.7%); Undergraduates 120 (32.4%) and Postgraduates 180 (48.6%). All respondents were meat consumers as 204 (55.1%) consumed beef the most, 86 (23.2%) chicken, 59 (15.9%) turkey while 16 (4.3%) and 5 (1.4%) ate chevon and pork respectively. Most respondents preferred chicken (27.3%), turkey (18.6%) and beef (18.4%) to other types of meat. Availability (47.3%), price (15.9%) and income (11.1%) among others were the factors that influenced their choice of meat types. Consumers preferred lean meat to meats with moderate fat and meat from old animals to young or middle aged animals. Beef was most affordable, easiest to cook, most accessible; chicken the tastiest and most palatable while bush meat was believed to be most nutritious. Chi-square result however revealed there were significant differences in the consumption pattern ( $X^2 = 343.1$ ) and preference of meat ( $X^2 = 156.7$ ) by the respondents.

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**Keywords:** Consumer choice, Lean meat, University staff and students, Consumption pattern, Most preferred and consumed

### Introduction

Meat is the most valuable livestock product and for many people, serves as their first choice source of animal protein (Tsegay, 2012). Meat is any flesh of animal that is used for food.

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It is nutritious and highly attractive in appearance (Akinwumi et al., 2011). There are different kinds of meat depending on the source from which they are obtained, for example, mutton from sheep, chevon from goat, beef from cattle, pork from pig and chicken from birds (Soniran and Okubanjo, 2002).

Preferential consumption exists in spite of the importance of meat as a source of protein with high biological value. Earlier reports (Koppertt and Hladik, 1990; Burton and Young, 1992) classified factors that affect the consumption of meat as economic, social and cultural. Ojewola and Onwuka (2001) specifically highlighted religion, age, sex, socio-economic factors, individual variation and income as major factors in Nigeria. For instance, pork is unpopular in the Muslim northern part of the country (Ikeme, 1990), chevon is popular among the Ibos in the South-East (Obanu, 1975), while cow meat and chicken appear to predominate all over Nigeria.

Studies on consumers' preference are better appreciated by the food industry since they can explain consumers' decisions (Verbeke and Vackier, 2004) 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 (Kubickova and Serhantova, 2005). 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) earlier 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., The present study was however undertaken to assess the consumers' preference and perception of the different types of meat among staff and students of the University of Ibadan, Ibadan, Nigeria.

## **Materials and Method**

The study was carried out at the University of Ibadan, Ibadan, Oyo state, Nigeria. The University is located in Ibadan in the tropical rain forest zone of Nigeria within a latitude of 7° 26` north and longitude of 3° 54` east, with a mean altitude of 277 meters above sea level.

The University has a population of well over 50,000 residents comprising about 18,000 post graduates, 13,000 undergraduate students with about 5,000 staff strength and over 5,000 dependants.

A well-structured questionnaire was prepared for the study and administered to 370 randomly sampled respondents staff and students (ILCA, 1990). Data collected include socio-economic characteristics of the respondents, meat consumption level and pattern of consumers, consumers' preference for the different meat types (e.g. beef, pork, chevon, chicken, mutton), relative importance of meat to the respondents, limitation of meat consumption trends of consumers, factors influencing consumers' choice of meat, respondents' perception and expectations of the different meat types. Data were analyzed using descriptive statistic tools (SPSS, 2006) to generate tables, means and frequencies while excel software package was also used to generate graphs. Chi-square analysis was also employed to reveal the relationship in the respondents' consumption pattern and preferences for the different meat types.

## Results and Discussion

The personal profile of the respondents is shown in Table 1. It was observed that 262 of the respondents (70.8) were Yoruba, 38 (10.3%) were Igbo and 14 (3.8%) were Hausa. These are ethnic nations in Nigeria, while the remaining 15.1% represented other minority groups in the country (i.e. Fulani, Urhobo, Tiv, Ijaw etc.). This is a reflection of the university federal character nature as indicated by the diverse tribes resident in the university. More female 212 (57.3%) participants responding to the questionnaire as against 158 (42.7%) for male this result was in line with 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 other 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. Most of the respondents i.e. 278 (75.1%) were singles, 89 (24.1%) were married while 3(0.8%) were widowed; 309 (83.5%) of the respondents were christians, 15.9% were muslims and 0.5% indicated that they were neither Christians nor muslims. Report based on the category in which the respondents belonged also revealed that 17 (4.6%) were members of Non Academic staff union (NASU), 19 (5.1%) were Senior Staff Association of Nigerian University (SSANU), 24 (6.5%) were Academic staff Union of University, 10 (2.7%) were National Association of Academic Technologists (NAAT), 120 (32.4%) were undergraduates and 180 (48.6%) were post graduates; 76 (20.5%) of the respondents had an average monthly income of less than N10,000, while 141 (38.1%), 74 (20%), 46 (12.4%), and 33 (8.9%) have an average monthly income of N10,000-20,000, N20,000-50,000, N50,000-100,000 and N100,000 and above respectively.

**Table 1: Socio-Economic Characteristic of the Respondents**

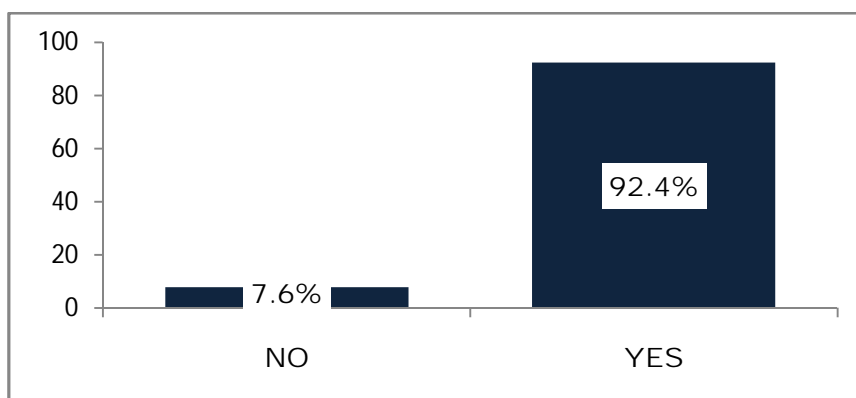
S/N	Characteristics		Frequency	Percentage (%)
1.	Tribe	Yoruba	262	70.8
		Igbo	38	10.3
		Hausa	14	3.8
		Others	56	15.1
2.	Sex	Male	158	42.7
		Female	212	57.3
3.	Marital status	Single	278	75.1
		Married	89	34.1
		Widowed	3	0.8
4.	Age (years)	16-25	182	49.2
		26-35	127	34.3
		36-55	60	16.2
		56 and above	1	0.3
5.	Religion	Christian	309	83.5
		Muslim	59	15.9
		Others	2	0.5
6.	Educational level	B.Sc. in view	115	31.1
		SSCE	4	1.1
		OND	16	4.3
		HND	14	3.8
		B. Degree	183	49.5
		Master's degree	18	4.9
		Ph.D.	20	5.4
7.	Category	NASU	17	4.6
		SSANU	19	5.1
		ASUU	24	6.5
		NAAT	10	2.7
		Undergraduate	120	32.4
		Post graduate	180	48.6
8.	Average income (N)	<1000	76	20.5
		10-20,000	141	38.1
		20-50,000	74	20.5
		50-100,000	46	12.4
		100,000 and above	31	8.4

SSCE:Senior School Certificate Examination, OND: Ordinary National Diploma, HND: Higher National Diploma, B. Degree: Bachelor's Degree, B.Sc in view: Bachelor of Science Degree in view, Ph.D: Doctorate, NASU: Non Academic Staff Union, SSANU: Senior Staff Association of Nigerian Universities, ASUU: Academic Staff Union of Universities, NAAT: National Association of Academic Technologists

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### Meat Consumption Level of Consumers

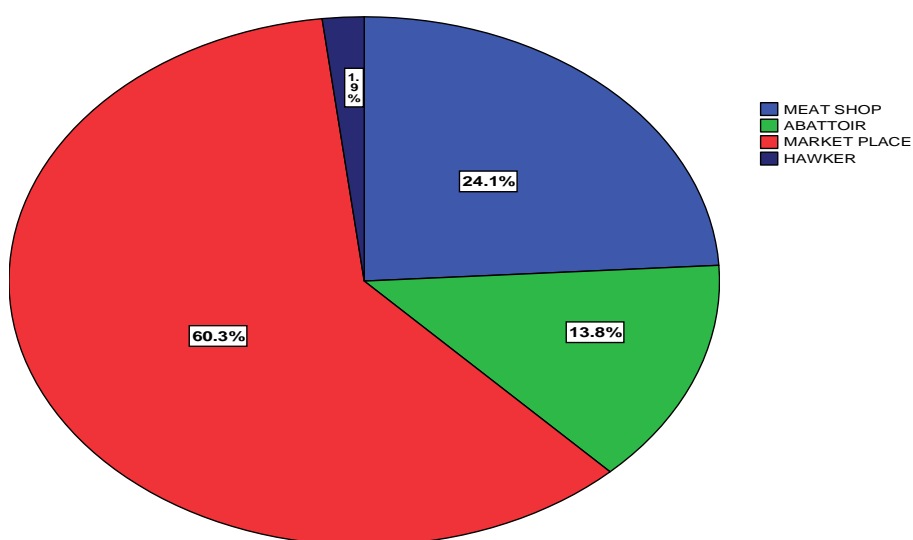
Table 2 shows that all respondents from this study consumed meat one way or the other as 219 of them preferred meat to fish. This was in line with Eyo (2007) that meat was clearly preferred to fish because consumers perceived it as being richer in protein, nutritious and more appetizing. When respondents were asked if they could eat without meat 264 (71.4%) submitted they could eat without meat, while 106 (28.6%) could not eat without meat (Table 2). This revealed that the importance of meat consumption cannot be under-emphasized as all the respondents interviewed consumed meat and a larger percentage preferred meat to fish. However, certain factors could be attributed to the non-consumption of meat by some respondents during meals, this could range from non-availability of meat to the presence of alternatives such as fish and egg. With regards to the frequency of meat consumption (Table 3); 18 (4.9%) eat meat once in a week, 125 (33.8%) at least twice a week, 77 (20.8%) once in a while, 148 (40%) daily and 2 (0.5%) consumed meat during festive periods.



**Figure 1: Number of Respondents who buy Meat**

Figure 1; shows the number of respondents that purchase meat. 342 (92.4%) buy meat while (7.6%) do not buy meat.

The respondents who indicated they do not buy meat were those that probably do not eat in cafeterias, eateries but at home. A greater number of the respondents, 223 (60.3%) purchased meat from the market place, 89 (24.1%) purchased meat from meat shop, 51 (13.8%) from abattoir, and 7 (1.9%) from hawkers as shown in Figure 2.

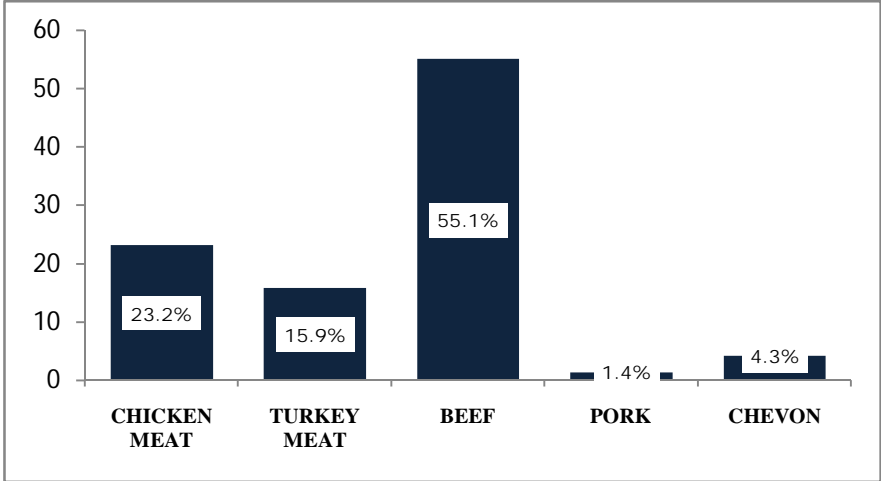


**Figure 2: Places of Meat Purchase**

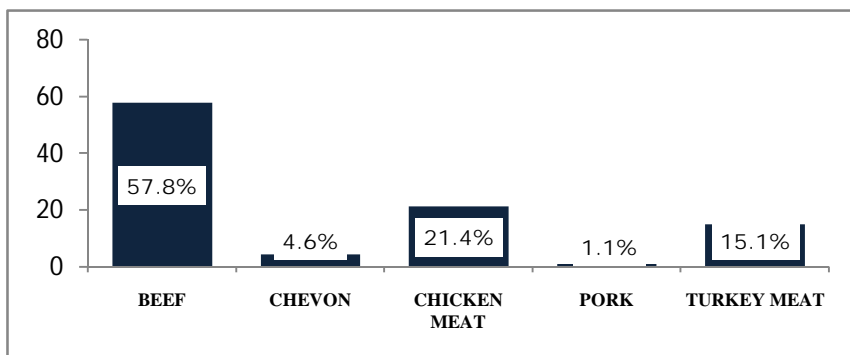
From this result though the old ways of meat purchase prevailed as exemplified by the number of respondents that purchased meat from the market place, the modern way of buying meat from designated meat shops was gaining ground. This could be attributed to the quest for convenience and the fact that consumers were becoming more health conscious. This was also corroborated by Akinwumi *et al.* (2011) that better standard of living and changing lifestyles has led to the shift towards more convenience in getting meat for food preparation. The average meat purchased range from 0.5kg to 3kg ( $1.3 \pm 0.6$ kg) as shown in Table 3 which conformed to the observation of Okubanjo (1990) that consumers buy meat daily in small loafs of 2kg or less. Amount spent on meat daily and weekly (Table 3) ranged from N20-500 ( $N125.9 \pm 99.5$ ) and N100-3,500 ( $N952.5 \pm 720.1$ ) respectively.

**Preference for Meat**

Figure 3 shows the consumption of the different types of meat by respondents. Beef ranked first with 204 respondents (55.1%) indicating they consumed more of beef than any other meat types, followed by chicken (23.2%), turkey (15.9%) while chevon and pork were 4.3% and 1.4% respectively. This result agreed with earlier reports (Ikpi, 1990; FAO, 2006; Akinwumi *et al.* 2011; Emakoro and Adamasun, 2012) that beef was the most consumed meat in Nigeria. Top among the factors as provided by the respondents (Table 4) that determined their choice of their most consumed meat were availability (37.8%), nutrient (22.2%), taste (14.8%) and Cost (7%). This was consistent with the report of Tsegay (2012) that the high degree of variation in meat consumption could be due to availability, cost, sensory value, income level, religion and socio cultural factors. Pork, though not consumed in Harar province of Ethiopia (Tsegay, 2012), was the least consumed meat in Ogbomoso, Nigeria (Akinwumi *et al.*, 2011) and this was consistent with the report of this study. Religion and socio-cultural reasons were attributed to its low patronage (Odoh *et al.*, 2004).

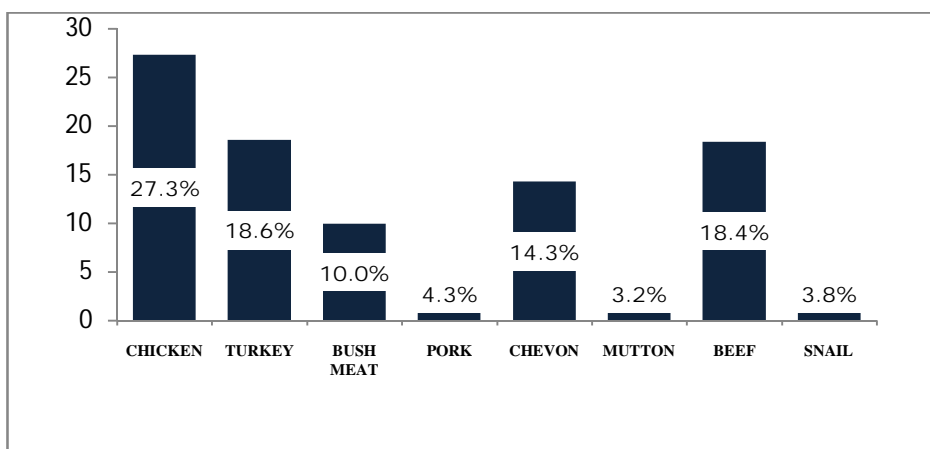


**Figure 3: Most Consumed Meat among Staff and Students of the University of Ibadan**



**Figure 4: Most Purchased Meat among Staff and Students of the University of Ibadan**

As shown (Figure 4) beef also remained the most purchased meat as 214 respondents (57.8%) declared it as the most bought, which corroborated the report of Eyo, (2007). Chicken followed with 21.4%, turkey (15.1%), chevon (4.6%) and pork (1.1%). Chicken, though second on the list of most consumed meat ranks highest with 27.3% on the list of the most preferred meat (Figure 5), followed by turkey, beef, chevon, bush meat, pork, snails and mutton in that order. Nutritious, likeness and accessibility were top reasons given for the choice of their most preferred meat. However, Akinwumi *et al.* (2011) declared cost, availability and income as the most limiting factors of meat preferences which was consistent with the report of this study.



**Figure 5: Most Preferred Meat among Staff and Students of the University of Ibadan**

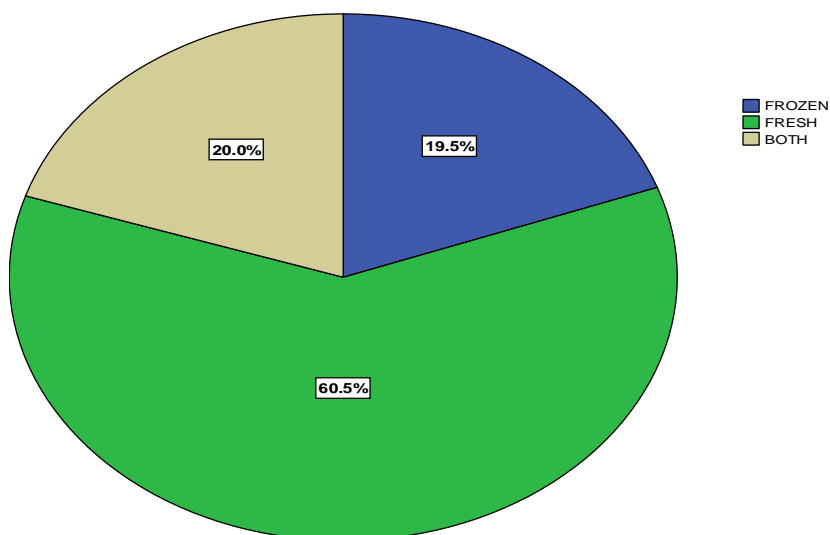
A high number of respondents 50% took their preferred meat once in a while, 29% at least twice a week, 17.8% daily and 5.1% at festive periods.



As shown in Table 2, 216 (58.4%) of the respondents agreed they consumed all the different meat types, while 154 (41.6%) do not eat all the meat types. Pork, rabbit, mutton rank high on the list of meats that were not consumed as dislike, religion, non-availability, health and socio-cultural reasons among others were the reasons given (Table 5). The low level of pork consumption could also be attributed to high level of marbling, as increased level of intra-muscular fat in meat could have a detrimental effect on meat acceptability by consumers (Fernandez *et al.*, 1999).

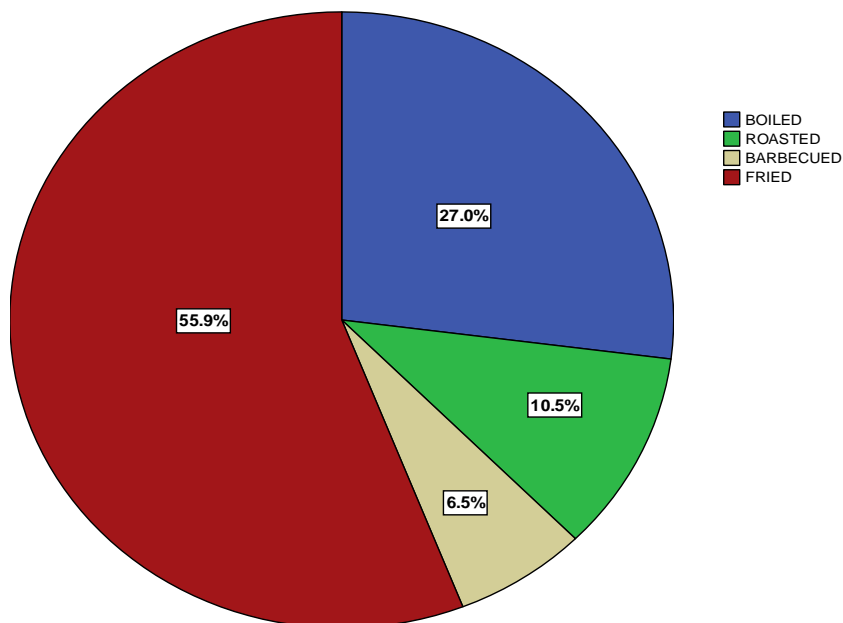
### Preference based on form of Purchase and Consumption

As shown in Figure 6, 224 (60.5%) of the respondents preferred to purchase their meat fresh, 19.5% preferred it frozen while 20% were not particular as they preferred both forms.



**Figure 6: Forms of Meat Purchase among Staff and Students of the University of Ibadan**

Also a high number (55.9%) of the respondents preferred consuming their meat fried while a few number preferred it barbecued (Figure 7).



**Figure 7: Preference for Meat Consumption among Staff and Students of the University of Ibadan**

### Preference Based on Sex and Age of Livestock

Preference of respondents with respect to sex and age of livestock are shown in Figures (8 & 9). Tsegay (2012) in his study reported that meat from male animals was preferred to meat from female animals. From this study however, a high number of the respondents (26.8%) preferred meat from male animals. 14.6% preferred meat from female animals while majority of the respondents (58.6%) were not particular about the sex of animals from which their meats were obtained. The difference in preferences could be variation of mass and sensory test of meat produced from different sexes of livestock (Tsegay, 2012). As shown in Figure 8; 10% of the respondents prefer meat from young animals, 29.5% preferred meat from middle-aged animals, 31.4% from old animals while 29.2% consume meat irrespective of the age of the animal from which it was obtained. The high number of people associated with the consumption of meats from older animals probably could be as a result of preference for tough meat which characterizes older animals.

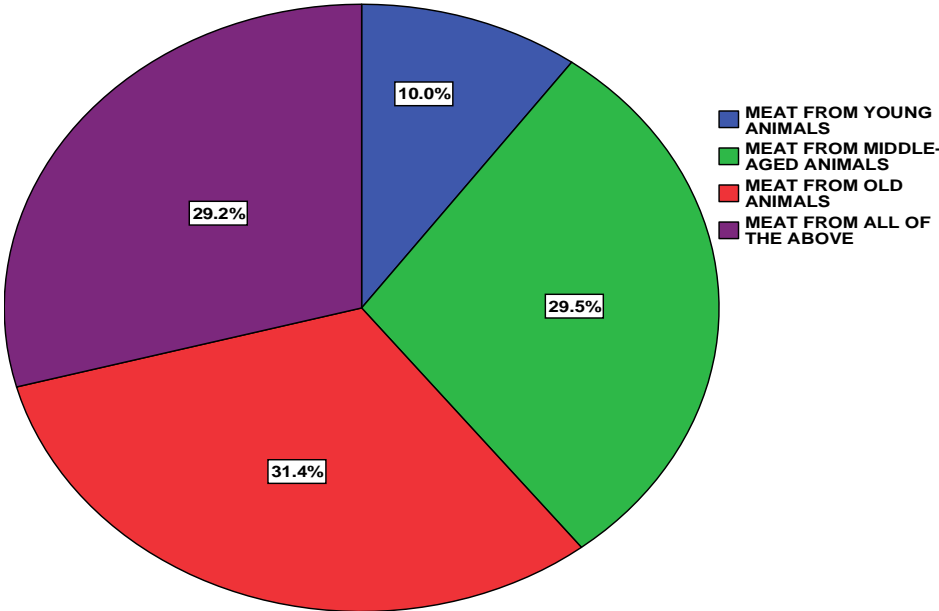


Figure 8: Preference for Livestock Meat-Age by Staff and Students of the University of Ibadan

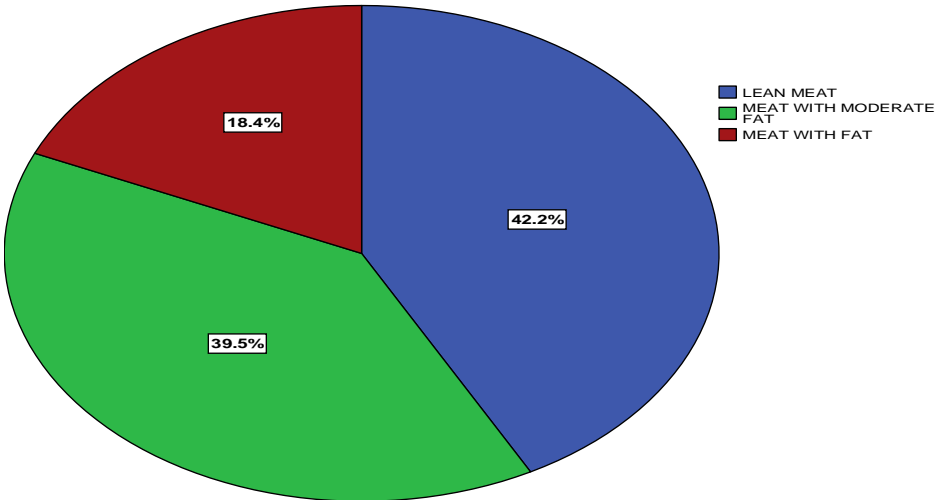
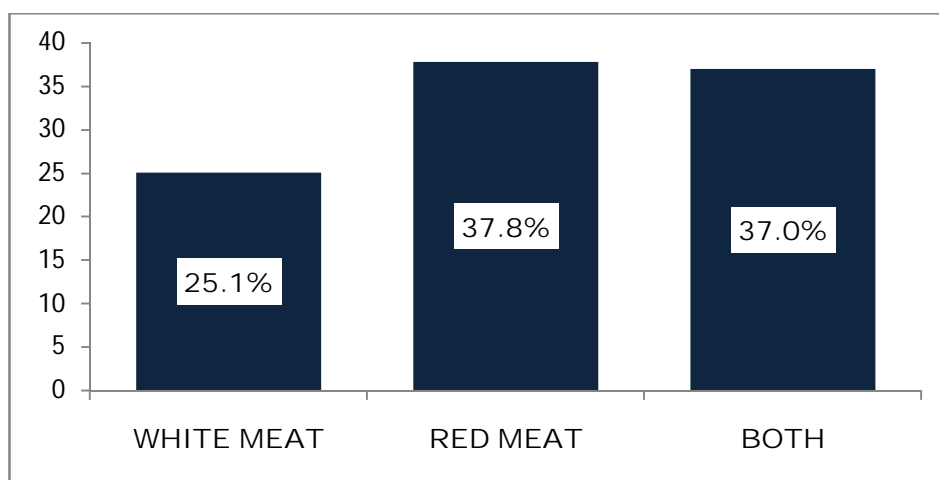


Figure 9: Meat fat Preference among staff and Students of University of Ibadan Preference Based on Meat Colour and fat

The characteristic colour of meat is a function of its pigment content and light scattering properties (MacDougall, 1982, Ledward, 1992). In Table 12 the meat colour preference of respondents revealed 140 (37.8%) of the respondents preferred red coloured meat to white meat as shown in Figure 10; while 137 (37%) preferred both colours. The high number of respondents who preferred red coloured meat could be attributed to the high number of beef consumers in this study, the fact that red meat is densely nutritious (Williamson *et al.*, 2005), and the colour is more appealing especially when fresh. The protein myoglobin present in tissues combines with oxygen to yield oxymyoglobin which gives a bright red colour of fresh meat (Priolo *et al.*, 2001).

In terms of preference for meat fat, Brewer *et al.* (2001) aptly illustrated that consumers expressed a higher degree of purchase intent for leaner meat. This was supported by the findings in this study as shown in Figure 9 as 156 respondents (42.2%) preferred lean meat, 39.5% preferred meat with moderate fat and 18.4% preferred meat with fat. The explanation for this could be because lean meat has a relatively low fat content, moderate in cholesterol (Williams *et al.*, 2006) and also the fact that consumers of meat are becoming more health conscious as excess fat consumption has been attributed to cause cardiovascular diseases (Department of Health, 1994; Moloney *et al.*, 2002; Iwanegbe and Igene, 2012) and accumulation of body fat that could lead to obesity.

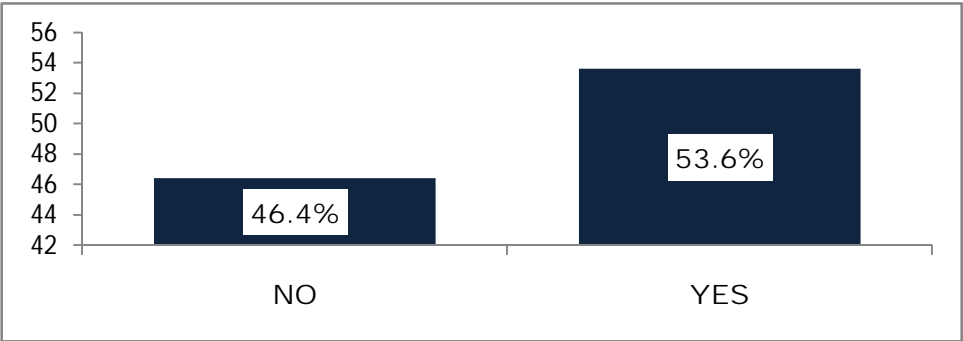


**Figure 10: Preference for Meat Colour among Staff and Students of University of Ibadan**

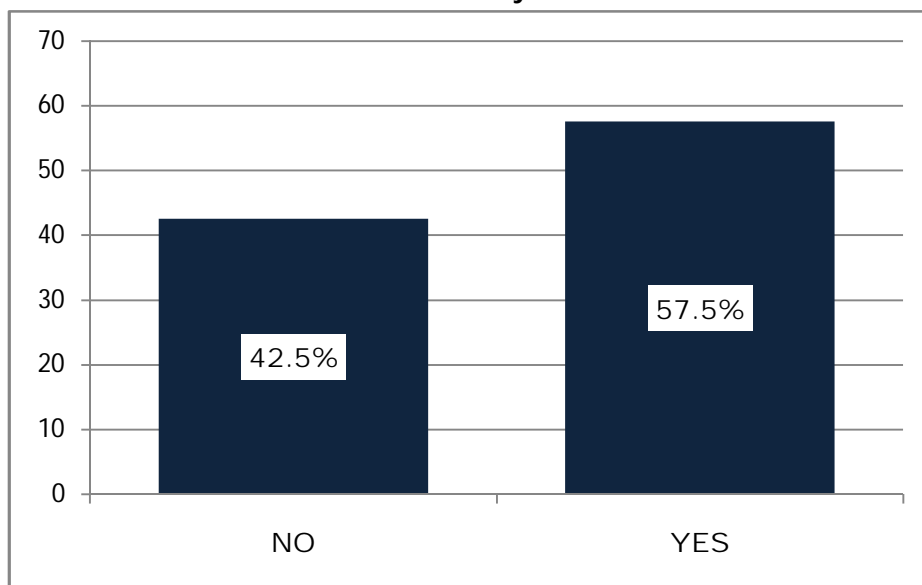
As shown in Table 4; Chicken, beef and turkey ranked high among meats with preferred fat content. Pork tops the list of meats with highest fat content, chicken, beef and turkey have the fat content preferred by consumers while snail, bush meat and rabbit were rated high on the list of meats with lowest fat content. Fernandez *et al.* (1999) demonstrated that increased level of intra muscular fat in meat could have a detrimental effect on meat acceptability by consumer, perhaps more of the reasons why pork reported a low patronage in the study area.

**Factors Responsible for Consumers’ Choice of Meat**

As discussed above, meat consumption trend of the respondents were skewed towards some livestock species. However, other potential meat producing animals were hardly utilized. This may lead to over utilization of the already existing livestock and underutilization, neglect of other meat animals. Table 5 shows the various factors influencing consumers’ choice of their most preferred, most consumed and non-consumed meats. As observed in Table 6, most of the respondents claimed availability (47.3%), price (15.9%) and income (11.1%) among others were the factors limiting their choice of meat types. Adetunji and Rauf (2012) in their study found that respondents’ preference for meat was influenced by their taste and level of income. With respect to income in this study however as shown in Figure 11; 194 respondents admitted they would consume more meat if income increased while 168 would not consume meat even if their income increased, also 211 respondents declared they would consume more meat if the price of meat reduces Figure 12, which strongly affirmed the study of Adetunji and Rauf (2012) that a percentage increase in price of meat will reduce its demand while 156 respondents would not consume more meat even if price reduces



**Figure 11: Meat Consumption with Respect to Increased Income by Staff and Students of the University of Ibadan**



**Figure 12: Meat Consumption with Respect to Reduced Price among Staff and Students of the University of Ibadan**

### Perception of Respondents to the Various Meat Types

As shown in Table 7, chicken, turkey and chevon were the tastiest as perceived by 25.9%, 20.5% and 14.1% of the respondents respectively. Beef (58.1%) and pork (18.1%) were said to be the most affordable; snail (23.5%), bush meat (20.5%) and chicken (18.9%) top the list of most nutritious; beef (37.3%) and chicken (30%) were the easiest to cook; beef (62.4%) and chicken (25.9%) were the most convenient to access; while chicken and turkey were rated most palatable. Eyo (2007) reported that chevon was considered more nutritious, more tasty, cooks faster even though less available but costlier. Akinwumi *et al.* (2011) reported that beef was the most convenient to access, most affordable, tastiest and easiest to cook. Among the various categories examined beef remained the most affordable, easiest to cook and most convenient to access as perceived by the respondents. It could be concluded therefore that beef was clearly preferred to other meat types in terms of all the attributes considered in this study which agreed with earlier reports (Eyo, 2007; Akinwumi *et al.* 2011).

It was expected that the different types of meat were consumed and preferred equally contrarily chi-square analysis (Table 8) revealed that the consumption  $X^2 = 343.1$  and preference  $X^2 = 156.7$  for the different meat types were significantly different.

It could however be deduced that the observation drawn from the field survey in terms of consumption and preference for the meat types was significantly different ( $P < 0.05$ ) from the expectation.

**Conclusion**

This study revealed that beef was the most consumed, followed by chicken, turkey and chevon. In addition to being the most consumed, beef was also the most affordable, easiest to cook, and most convenient to access. Chicken was rated most preferred followed by turkey, beef and chevon in that order. Incidentally, the first four most consumed meats (beef, chicken, turkey and beef) and the first four most preferred meats (chicken, turkey, beef and chevon) as rated by the respondents in the study area were the same, though there exist differences in their arrangement. Availability, income, price and taste however influenced their choice of most consumed and most preferred meats.

**Table 2: Importance of Meat to Respondents**

	Yes	No
Eat meat	370	--
Eat without meat	264	106
Prefer meat to fish	219	151
Buy meat	342	28
Eat all the different types of meat	216	154

**Table 3: Meat Purchase Attributes of staff and Students of University of Ibadan**

	Frequency	Minimum	Maximum
<b>Mean</b>			
Average meat Purchased (Kg)	162	0.5	3
Cost of a Kg	155	300	1800
Amount spent per day (₦)	177	20	1500
Amount spent per week (₦)	263	100	3500

**Table 4: Meat fat Perception by staff and Students of University of Ibadan**

	Highest fat	(%)	Preferred fat	(%)	Lowest fat	(%)
Beef	40	12.7	78	25.7	55	19.2
Bush meat	–	–	24	7.9	18	6.3
Chicken	21	6.6	79	26.1	33	11.5
Turkey	29	9.2	61	20.1	12	4.2
Chevon	–	–	27	8.9	10	3.5
Mutton	6	1.9	4	1.3	5	1.7
Pork	220	69.6	17	5.6	–	–
Rabbit	–	–	7	2.3	36	12.6
Snail	–	–	6	2.0	117	41.0

**Table 5: Factors Influencing Meat Consumption of Staff and Students of University of Ibadan**

Factors	Most consumed	(%)	Most preferred	(%)	Non- consumed	(%)
Availability	138	37.8	48	13.0	17	11.5
Nutritious	82	22.2	177	47.3	–	–
Cheap	26	7.0	16	4.3	–	–
Tasty	52	14.8	26	7	–	–
Just like	58	15.7	85	23	–	–
Easy to cut	11	3.0	15	4.1	–	–
Socio-cultural	–	–	3	0.8	23	15.5
Health	–	–	–	–	18	12.2
Dislike	–	–	–	–	52	35.1
Religion	3	0.8	–	–	35	23.6
Others	–	–	–	–	3	2
Total	370	100	370	100	148	100

**Table 6: Factors Limiting Choice of meat by Staff and Students of University of Ibadan**

	Frequency	(%)
Religious	30	8.1
Socio-cultural	22	5.9
Availability	175	47.3
Price	59	15.9
Income	41	11.1
Taste	23	6.2
Others	20	5.4



**Table 7: Perception of Various Meat Types by Staff and Students of University of Ibadan**

	Pork	Beef	Chicken	Turkey	Chevon	Mutton	Bush Meat	Snail	Rabbit
Tastiest	5.1	11.1	25.9	20.5	14.1	2.2	5.4	5.9	9.7
Most affordable	18.1	58.1	12.2	4.1	3.0	—	2.2	1.6	0.8
Most nutritious	3.8	6.5	18.9	13.5	8.4	1.9	23.5	13.5	20.5
Easiest to cook	1.9	37.3	30.0	17.3	5.4	—	4.1	1.1	3.0
Most Convenient to access	0.3	62.4	25.9	4.9	3.0	0.5	1.9	—	1.1
Most palatable	5.1	14.3	35.4	18.1	7.0	1.9	6.2	1.6	10.3

**Table 8: Result of Chi-Square Analysis**

	Degree of freedom	Chi-square
Consumption of meat	4	343.1
Preference for meat	7	156.7

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