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CONSUMER PREFERENCE AND COST FOR GOAT MEAT (CHEVON) IN OYO METROPOLIS, SOUTHERN GUINEA SAVANNA ENVIRONMENT OF NIGERIA

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Abstract

The nutritional value of goat meat affects human health due to low content of saturated fatty acids and cholesterol, the goat meat in the human diet is healthier alternative compared to other types of red meat. The study focuses the consumers' preference of goat meat consumption in Oyo metropolis, southern guinea savanna zone of Nigeria. A total number of two hundred (200) respondents were randomly sampled in the four (4) local government areas that made up of Oyo township (Atiba, Afijio, Oyo west and Oyo east). A structural questionnaire was adopted for obtaining the data for the study. Data obtained were statistically analyzed for means and percentages determination. Results observed affirmed that majority of the respondents are female, married, adult, secondary schools levers and business man and women in terms of sex, marital status, age, education status with tendency to increase in demand when compared to other meat types due to awareness on health issue associated with red meat. Consumer of goat meat endorsed slaughtering of younger goat (6 months) than other slaughtered time due to its tenderness and lesser fat at this stage of life. Majority of the consumers eat goat meat once in a week and preferred male goats while the cut part most consumed was the legs coupled with most preferred cooking method

Keywords:
Consumer preferences, cost, chevon, meat, Oyo metropolis, Nigeria

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was dry cooking (Roasting). Cost implication shows that those earning higher incomes spent more on goat meat on weekly basis. It can be concluded that through the help of awareness of extensive health education campaigns for its nutritive values and attempt should be intensified to encourage its consumption by the populance.

Introduction

Most goats in Nigeria are indigenous breeds used for meat, hides and savings while goats are mainly produced by smallholder farmers in low input, low yielding systems. The breeding of goats had many merits as they are typano-tolerant and represent an important component of the crop-livestock farming system of the indigenous population. Besides provision of food, they act as a reserve of wealth, a living bank, a source of income, employment, manure, raw material and part of the social and customary ceremonies (Anyanwu *et al*., 2020). Their size and adaptability and short generation interval make them the most preferred among domestic animals and makes for easy management among women and children. The short generation interval makes them easier to replenish stocks after disease outbreak and it is also a form of insurance against crop failure (Adeleye *et al*., 2016).

According to the USDA Food Composition Databases (2016), goat meat is a lean meat with more favorable nutritional qualities than chicken, beef, lamb, or pork. Goat meat is a good match for consumers' demands for leaner and more nutritious meat (Webb *et al*., 2005). Raising meat goats is an affordable livestock enterprise (Solaiman, 2007) and goats are enterprises for Nigerian people but has resulted in low reproduction rates, low growth rates, high animal mortality, an undeveloped market structure and infrastructure while over 90% of animals slaughtered within the region are supplied from northern Nigeria (Francis, 1990). Studies have also indicated that there is an emerging demand for goat meat as an epicure item and barbecues around the southern Nigerian populace. Today, numerous of general population is being introduced to the tasty and healthy product from goats (Ivanonic *et al*., 2016). The recent acceptability of goat meat as an excellent source of nutritious and healthy source of protein for meat eaters has opened the market for goat meat consumption in nationwide (Adeleye *et al*., 2016).

Availability of the nutrient composition of goat meat (USDA, 2001) has attracted health-conscious consumers, thereby expanding demand for goat meat and goat food products such as cheese and milk (Montgomery 2010; Kick, 2012). Goat meat has less fat and cholesterol than beef, pork, chicken and lamb (Ekanem *et al*., 2013). The

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goat meat has about the same nutritional value as the sheep (more precisely, more protein and less fat compared to the sheep meat).

Anaeto *et al.* (2010) affirmed that, because of the molecular structure, the goat meat is more easily digested. Due to low content of saturated fatty acids and cholesterol, the goat meat in the human diet is healthier alternative compared to other types of red meat. According to Ivanovic *et al.* (2014), polyunsaturated fatty acids prevalent in goat meat, and the diet rich in unsaturated fatty acids is correlated with a reduced risk of stroke and coronary disease. In addition, in goat meat are present the essential amino acids such as lysine, threonine and tryptophan (Madruga *et al*., 2009). The nutritional value of goat meat affects human health, because it is not only contains less total fat and cholesterol, but also content of saturated fatty acids are lower than in the traditional types of meat (Stanisz *et al*., 2009).The consumer tastes and preferences will act as the determining factor for the development of the livestock sector in general and small ruminants in particular (Elbukhary *et al*., 2019) but lack of data and information on consumer meat preference has hindered the achievement of this goal. So the study determined to measure the consumers' preference and cost for goat meat (chevon) consumption in Oyo metropolis. Oyo State, Nigeria.

Materials and Methods

Study Site

The study was carried out around the Oyo township, Oyo State, Nigeria and Oyo lies on the longitude 3°5' East of the Greenwich meridian and Latitudes 7° 3' North eastwards from Ibadan, the capital of Oyo State. The altitude is between 300m and 600m above level. The mean annual temperature and rainfall are 27°C and 1,165mm respectively. The vegetation of the area is Southern Guinea Savanna zone of Nigeria (Google Earth, 2023).

Population of the Study

The population of the study comprises of all identified goat consumers in Oyo West, Oyo East, Atiba and Afijio local government areas of Oyo state that formed the Oyo metropolis.

Sampling and Sample Technique

The consumers of goat meat were identified and samples as two-hundred (200) in number. This comprises of 25 goat meat consumers from each of the local government areas under this study. Five (5) goat meat consumers were sample from each ward within the local government area; i.e. five (5) goat meat consumers per ward multiply by ten (10) wards totaling 50 respondents per local government. The

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total of 200 questionnaires was allotted to these randomly sampled goat meat consumers.

Research Instrument

The instrument used for assessing this study was a structured questionnaire. These structured questionnaires were sections into A, B, C, D and E items. Section A contains demographic characteristics of the respondents, Section B for the type of meat is preferred; Section C described the attitudes about goat meat consumers while section D indicated the frequency of consumption. However, items on sections E, F, G and H described the provide choices between characteristics of type of cut, age and sex of the animal, and type of cooking methods respectively.

Data Collection

The primary data were collected through the use of questionnaire on the consumer preferences for goat meat (chevon) in Oyo communities. These questionnaires were structured and were administered by the researcher in order to bring about accuracy data.

Data Analysis

The method of data analysis used for this is simple descriptive statistic and this involves the use of percentage, frequency distribution and tabular presentation of the data collected.

Results

The demographic characteristics and percentages of goat meat consumers in the study area are presented in Table 1. The results indicated that females (60%) were the major consumers of the goat meat followed by male which amounted to 40% of the respondents. Those who consumed the goat meats are married (55%) followed by divorced (20%), single (15%) and least consumed by widow/widower of 10 % in terms of marital status of the respondents. Majority of those who consumed goat meat belong to age bracket of 21-30 years (62.50%), followed by age group of 31-40 years (22.50%) with the least age of 41-50 years (5%). The educational status of the respondents was highest for secondary school (60%), followed by tertiary school (34%) with lowest level of education amounted to 6% for primary school. The occupational status of the respondents show that majority are business men/women (45%) followed by professional workers (25%), students (12.50%), farming (20%) and others (7.50%).

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Table 1: Demographic characteristics and percentages of goat meat consumers in the study area

Variable	Description	Frequency	Percent
Sex			
	Male	80	40.00
	Female	120	60.00
Marital status			
	Single	30	15.00
	Married	110	55.00
	Divorced	40	20.00
	Widow/widower	20	10.00
Age			
	<20 years	20	10.00
	21-30 years	125	62.50
	31-40 years	45	22.50
	41-50 years	10	05.00
Educational Status			
	Primary School	12	06.00
	Secondary School	120	60.00
	Tertiary School	68	34.00
Occupation			
	Business	90	45.00
	Farming	20	10.00
	Professional work	50	25.00
	Students	25	12.50
	Others	15	07.50

Source: Field work, 2023

Table 2 depicted the consumer meat preference based on species of animal. The results revealed that beef meat (40%) was highest preferred by the consumers followed by chickens (17.50%), fish (15%), chevon (12.50%), mutton (10%), pork (2.50%) and busy meat (2.50%) respectively.

Table 2: Consumer Meat preference based on species of animal

Meat Type	Frequency	Percent
Beef (Cattle)	80	40.00
Mutton (Sheep)	20	10.00

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Chevon (Goat)	25	12.50
Chicken (Poultry)	35	17.50
Fish (Fish)	30	15.00
Pork (Swine)	05	2.50
Busy meat	05	2.50

Source: Field work, 2023

The goat preferences in terms of breeds availability is as shown in Table 3. The results indicated that the highest preferred goat breeds was Red Sokoto goat (Maradi) of 60% followed by WAD goat (30.00%), Sahelian goat (10%) with foreign goat amounted to 0%.

Table 3: Goat preferences in terms of breeds

Breed	Frequency	Percent
WAD goat	60	30.00
Red Sokoto goat (Maradi)	120	60.00
Sahelian goat	20	10.00
Foreign goat	00	0.00

Source: Field work, 2023

Table 4 indicated the consumer of goat in terms of sex of the goat. The results shows that majority of the respondents preferred male (buck) (80%) meat followed by female (doe) (15.00) and 5% was recorded for respondents who preferred for both sexes of the meat. This implies that male goat is more consumed area the study area.

Table 4: Consumer of goat meat in respect to sex of the goat

Sex	Frequency	Percent
Male (Buck)	160	80.00
Female (Doe)	30	15.00
Both sexes	10	05.00

Source: Field work, 2023

Table 5 depicted the consumer consumption of goat in respect to age of the animal. The results revealed that majority of goat consumers consumed tender age goat of 6 months (40%), 9 months (25%), one year (20%) and more than a year (15%). This implies that the respondents preferred the younger meats over the older goats and the

results also indicated that as the animal attained ages of slaughtering resulted to less consumers' preferences.

Table 5: Consumer consumption of goat in terms of age

Age	Frequency	Percent
6 months	80	40.00
9 months	50	25.00
One year	40	20.00
More than a year	30	15.00

Source: Field work, 2023

The consumer preferences on carcass cuts were presented in Table 6. The results indicated that many of the respondents preferred legs (35%) followed by legs visceral organs (20%), loin (15%), limbs (10%), no preferences (10%), ribs (5%) and neck (5%). The implication of this is that internal organs such as liver, kidney and edible organs were more consumed among the respondents.

Table 6: Consumer preferences on carcass cuts

Cuts	Frequency	Percent
Legs	70	35.00
Loin	30	15.00
Limbs	20	10.00
Ribs	10	05.00
Neck	10	05.00
Visceral Organs	40	20.00
No preferences	20	10.00

Source: Field work, 2023

Table 7 shows the consumer consumption frequency of goat meat per week. The results revealed that majority of the respondents consumed goat meat once in a week (40.00%), twice in a week (25.00%), thrice in a week (20.00%), 4 times in a week (10%) and everyday (5.00%). However, those who consumed goat meat belong to those who earn higher incomes (75.00%) while 25.00% respondents were accounted lower incomes. The amount spent of weekly basis by the respondents cost between (#11, 000:00 – 20,000:00/week) i.e 51.50% while those who spent less than #10,000:00/week are 38.50% of the respondents and those who spent above #20,000:00/week accounted for the 10.00% of the respondents.

Table 7: Consumer consumption frequency of goat meat and Cost per week

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Meat Type	Frequency	Percent
Once in a week	80	40.00
Twice in a week	50	25.00
Thrice in a week	40	20.00
4 times in a week	20	10.00
Everyday	10	05.00
Income		
Higher Income	150	75.00
Lower Income	50	25.00
Amount Spent/wk		
Less #10,000:00	77	38.50
#11,000: 00 - #20,000:00	103	51.50
Above #20,000:00	20	10.00

Source: Field work, 2023

The consumer preferences on cooking methods are presented in Table 8. The results indicated that numerous respondents endorsed dry cooking method with indication of roasting (30%), followed by dry methods-grilling (20%), boiling (12.50%), pan-frying (12.50%), rotisserie (10%), sautéing (5%) and braising (5%) and stewing (5%) moist method.

Table 8: Consumer preferences on cooking methods

Method	Description	Frequency	Percent
Dry			
	Grilling	40	20.00
	Rotisserie	20	10.00
	Boiling	25	12.50
	Roasting	60	30.00
	Sautéing	10	05.00
	Pan-frying	25	12.50
Moist			
	Braising	10	05.00
	Stewing	10	05.00

Source: Field work, 2023

Discussion

The demographic characteristic of the respondents that indicated that female, married, adult, secondary schools and business man and women in terms of sex, marital status, age, education status and occupation consumed more of goat meat in

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this current study was in accordance with the reports of Ibrahim *et al.* (2013) who documented similar records for goat meat consumers in Georgia. The consumer meat preference based on species of animals that implied that beef meat was highest endorsed by the consumers and placed the chevon at the lower was agreed with the earlier studies of Elbukhary *et al*. (2019) and Hermas *et al.* (2010) that Libyans consumers and ranks below other meat such as beef and mutton with tendency to increase in demand.

The breed that was more consumed by the respondents goat breeds was Red Sokoto goat and this was the breed that was common after WAD goat in the southern Nigeria, this might be the choose of respondent because of their less musky odour compared to the WAD goat. The respondents in this study preferred males meat were preferred to females which was similar to the earlier reports of Elbukhary *et al*. (2019) and Madruga *et al.* (2009) who ranked the preference of goat meat for male over female goats. The male goat preferences over the female goat meats by the consumer also agreed with that findings in black Iraqi goat; male carcasses were significantly leaner and less fat as compared to females as observed by Jalal *et al.* (2014).

It was affirmed that the most preferred carcass cut by the goat meat consumer in the study area was the leg, and their preference might due to the fact that the leg has more muscles and less fat content compared to other cuts. These observations were in accordance with the Simela (2005) in South Africa who claimed that the South African people endorsed high value with goat legs because of lesser carcass fat and high lean content. Also, Ivanonic *et al.* (2016) affirmed that legs or hind limbs were more preferable by the Serbian due to the analysed lesser fat contents and high lean for both Serbian white goat and Balkan goat.

The consumer's consumption of goat meat in respect to age of the animal in the current study was linked to the tenderness of the meat since the most of the respondents' preferred soft meat. Tenderness is one of the most important factors influencing consumer acceptance of meat and meat generally becomes less tender as animals age. When an animal matures and the size of each muscle fiber increases, a decrease in tenderness will be expected. Young animals have more
connective tissue per unit weight in their muscles, but it is fairly soluble. With age, the solubility of collagen decreases when the meat is cooked, and intra- and inter-molecular cross-linking of collagen molecules increase resulting in tougher meat. Thus, this observation was in line with the findings of Arain *et al*. (2010) and Elbukhary *et al*. (2019) who affirmed that most goat meat eaters endorsed consumption of young goats which provided them tender with moderate fat and have a delicious test and little fat.

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The methods of cooking adopted by most of the respondents was the roasting of the goat meat and this was similar to the findings of Elbukhary *et al*. (2019) that for the both dry and moist methods of cooking goat meats, the people of Libra preferred eating the goat meat that were roasted. Arain *et al.* (2010) affirmed that roasted goat meats were by consumers in their study. Xazela *et al*. (2011) also asserted that cooking methods generally accepted in their study by the consumer was the dry method and with specify roasted method. Stanisz *et al.* (2009) asserted that meat quality of goat kids were adopted by their respondents by roasting it. Rai *et al.* (2016) found that dry method was adopted on their study on evaluation of various cooking methods on the nutritional and biochemical attributes and consumer appeal of chevon.

Conclusion

This study revealed that majority of the respondents are female, married, adult, secondary schools and business man and women in terms of sex, marital status, age, education status and occupation consumed more of goat meat in the study. Moreover, beef meat was placed above all meats followed by chicken, fish, chevon, mutton while pork had the least acceptance. The result also indicated that breed age and sex had a great influence on acceptability and weaned male kids were the most preferable. The results also revealed that goat meat is preferred above mutton, pork and busy meat with a great tendency to increase because of awareness of health issue associated with red meat (beef) and this will also affects amount spent on this goat meat. In addition to it could be concluded that goat kids meat can be an alternative meat source to other kinds of livestock as this has been seen in many hotels and restaurants as prepared barbecues.

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