

Preferences of Meat Demand Among Households in Bauchi State, Nigeria

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Abstract

The study analyzed the Preferences of Meat demand among households in some selected Local Government Areas of Bauchi State, Nigeria. Multi-stage sampling procedure was employed and 200 respondents were selected. The data collected were analyzed through the use of descriptive statistics. The study revealed that mutton was the most preferred meat item in Bauchi State with about 34% preferences. This is followed by beef, chicken and chevon with 30%, 25% and 11% respectively. The major constraints identified were low income, high price and unpleasant taste thus, it was recommended that more priority should be given to the policies that will improve income and increase awareness of the people to the importance of meat to the health and wellbeing of individuals. The government, cooperative societies and other non-governmental organizations should consider construction of modern abattoirs in the markets, regular pre-mortem and post-mortem meat inspection, provision of sanitary truck for transporting meat by the marketers from the abattoirs to the markets or retail shops. The characteristic unpleasant taste of goat's meat should be reduced through increased awareness of the procedures involved and principles of disbudding/descending to the farmers.

Keywords: Preferences, Demand, Households, Meat

JEL Code:

Contribution/Originality

The uniqueness of this study has to do with the fact that other studies were conducted on determinants of demand while this work assesses the preferences of meat products and their constraints in Bauchi state Nigeria. Hence, it pushes the frontier of knowledge in that respect.

1.0 Introduction

Meat is defined as flesh of animals that serve for human consumption and termed very important product of agriculture particularly animal production and backbone of the Nigerian economy. It is believed to be one of the most nutritious diets in existence worldwide as it contains appreciable amount of protein, vitamins, micro nutrients and fats which are essential for human health (Chinda *et al.*, 2015).

The most important attribute of meat lies in its ability to serve as the primary source of energy and the most consumed product in our daily meals. The appreciable number of people accepts meat as the unavoidable component of every meal and thus forms the basis for food consumption. However,

considering the availability of different meat products, consumers would prefer one type of meat to another which consequently affects consumers' choice over various types of meat (Kalambet, 2015).

It has been established that consumers' perspectives on meat quality attributes consider color as the most important intrinsic attributes while tenderness and flavor as the most pronounced eating quality attributes. Furthermore, taste and nutritional value are also important meat quality attributes for most consumers upon which their choice is based. The fat content of meat is believed to be one of the attributes that can influence consumers' preferences. On the general note consumers prefer meat with low fat content to that with high fat content (Ngapo *et al.*, 2017).

Bauchi State is one of the major livestock producers in Nigeria. This is because out of the estimated population of 16 million cattle, 35 million sheep and 56.5 million goats in Nigeria, the state production estimates stood at 1.8 million cattle, 2.8 million sheep and 3.4 million goats (Patience, 2012). Despite all the potentials of livestock production in Bauchi State, not much has been exploited. Although there was a study by Sani *et al* (2017) on the income elasticity and the socio-economic factors affecting meat demand. However, the study did not look at the preferences and the constraints associated with its' demand. This study therefore assesses the preferences of meat and the constraints associated with its demand among households in Bauchi state Nigeria. Thus, this constitute the gap in research that this study is designed to fill and to achieve it the study considered the following objectives; it examined the preferences of meat demand among households and also assessed the problems associated with the demand for meat in Bauchi State.

2.0 Literature Review

Maina and Babagana (2012) revealed that beef was the most preferred meat item in Borno State with 73.3% preference. The reason for such is, a given quantity of hind of cattle gives more quantity and a greater satisfaction as well, more than that of sheep or goat. Mutton was the next on the scale with 20% preference and chevon remain the least with only 6.7% preference. On a similar note Adetunji and Rauf (2012) reported that beef was most preferred meat type in Southwest Nigeria with 17.2%, 16.4%, and 9.4% of the respondents in Oyo, Osun, and Ondo respectively. The sampled households in these selected states also emphasized that taste of the meat (65.0%), price (47.9%) and their income level (41.4%) were the major reasons for their choice of preference. Meat choices and mean monthly expenditure as presented by Yakubu, *et al.* (2013) showed that beef was the most predominant meat item in the study area with 73.3% preference. The reason for such result was because beef stays for a longer period in a stew without "dissociating".

Similarly, a study conducted on meat preferences on students in the university of Agriculture Abeokuta Ogun State by Elegbede & Oyedepo (2018) showed that the mean monthly expenditure on meat types were for beef was ₦462, chicken ₦399 and fish ₦294 which represented 24.22%, 20.94% and 15.38% of the income of the students. While the perception of various meat types by taste, showed that 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.

Other reason could be because of quantity and greater satisfaction more than mutton and chevon (Maina, 2017). Moreover, Dhanda *et al.* (2003) opined that flavor, tenderness, aroma and juiciness influenced goat meat acceptability in decreasing order, while PH and color of the meat had very little organoleptic influence (Andrea, 2020).

On the problems associated with meat demand, ruminant meat products such as beef, chevon and mutton are mostly affected due to market prices, consumers taste, credit availability and consumers' wealth or income. Similarly, Yakubu *et al.* (2013) showed that the major problems for fresh beef in Sokoto Metropolis, Nigeria were price 28.89%, availability 8.89%, and health effect 8.89%. While Ivanovic *et al.* (2016) reported that the major problem with chevon is its smell and taste and it is more noticeable if the animal is older.

There are many ways to make goat meat odor less noticeable. These ways include both pre-slaughter and post-slaughter techniques. The pre-slaughter techniques include isolation and descenting/disbudding. While post-slaughter techniques include salt water soaking. Descenting of male goats is often necessary because of a strong odor that is produced by multiple oil glands located behind the base of the male's horn that are stimulated by testosterone, making the odor most offensive during breeding season (Gardener, 2011).

3.0 Materials and Method

3.1 Study Area

The study was conducted in some selected Local Government Areas of Bauchi State, Nigeria. The State is divided into three Agricultural Development Program Zones; The Western Zone, Northern Zone and Central Zone. The Western Zone has seven Local Government Areas; Bauchi, Toro, Dass, Bogoro, Tafawa Balewa, Kirfi and Alkaleri. Northern Zone include; Katagum, Zaki, Dambam, Giade, Jama'are, Gamawa, Itas Gadau, Misau and Shira. While Central Zone comprising of Ningi, Warji, Darazo and Ganjuwa making a total of twenty Local Government Areas. The State lies between $9^{\circ}3'$ and $12^{\circ}3'$ North of the equator and longitude $8^{\circ}50'$ to $11^{\circ}0'$ East of the Greenwich Meridian. The average high temperature in April is 36°C , while the average low temperature in December is 12°C . The population of the area was 4,653,066 out of which 2,369,266 were males and 2,283,800 were females according to the census (2006) this figure was projected to increase to 6,596,137 in 2019 (NPC, 2006).

3.2 Sampling Technique and Sample Size

Multi-stage sampling procedure was used to select 200 meat consuming households in the state. The first stage involved the purposive selection of three Local Government Areas (Bauchi, Katagum and Ningi from Western, Northern and Central Zones respectively). The second stage involved the purposive selection of Bauchi, Azare and Ningi town from Bauchi, Katagum and Ningi Local Government areas respectively. The third stage was the proportionate sampling selection of four, two and two wards from Bauchi, Azare and Ningi Town respectively, giving rise to a total number of eight wards. The fourth stage was the proportionate sampling selection of 31, 30, 24, 26, 24, 20, 23 and 22 household heads from Makama A, Hardo, Dan'ya, Makama B, Nasarawa Bakin Kasuwa, Madangala, Ningi and Tiffi respectively, making a total of 200 households for the study.

Table1: Meat Consumers Sampling Frame in Bauchi State

S/NO	Zones	LGAs	Towns	Wards Selected	HHN	Proportionate Sampling	Sample Size
1	Western Bauchi	Bauchi	Bauchi				
			Makama A	Makama A	9644	$\frac{9644}{62217} \times 200$	31
	Toro		Makama B	Makama B	8088	$\frac{8088}{62217} \times 200$	26
	T/Balewa		Hardo	Dan`iya	7466	$\frac{7466}{62217} \times 200$	24
	Kirfi		Dan`iya	Hardo	9333	$\frac{9333}{62217} \times 200$	30
	Alkaleri		Dawaki				
	Dass		Majidadi A				
	Bogoro		Majidadi B				
2	Northern Katagum	Katagum	Dan`amar				
	Gamawa		Azare				
	Jama`are		Kofar	Nasarawa	7466	$\frac{7466}{62217} \times 200$	24
			Gabas	B/Kasuwa			
	Dambam		Kofar Kuka	Madangala	6222	$\frac{6222}{62217} \times 200$	20
	Shira		Nasarawa				
			B/Kasuwa				
	Misau		Madangala				
	Zaki						
	Itasgadau						
	Giade						
3	Central Ningi	Ningi	Ningi				
			Ningi	Ningi	7155	$\frac{7155}{62217} \times 200$	23
	Warji		Tiffi	Tiffi	6844	$\frac{6844}{62217} \times 200$	22
	Ganjuwa		Dingis				
	Darazo		Janga				
			Guda				
	Total	3	17	8	62,217		200

Source: Field Survey 2017

3.3 Data Collection

The data for the study were obtained using primary source. The data were collected using, well-structured questionnaires that were administered to the respondents, with the assistance of trained enumerators in the study area. The questionnaires involved both open and close ended questions. The household heads were administered questionnaires and the appropriate information was recorded. Information meat preferences and the lists of major problems associated with meat demand were given for the respondents to tick the most pronounced.

3.4 Analytical Techniques

The analytical tools used for the analysis were descriptive statistics. It includes mean, frequency distribution, and percentages to represent the preferences and constraints associated with meat demand.

4.0 Results and Discussion

4.1 Households Preferences for Meat Demand

The study examined the various meat types demanded by households in the study area. Table 2 presents their preferences.

Table 2: Distribution of household heads according to the preferred meat types

S/n	Variable	Frequencies	Percentage
1.	Beef	60	30
2.	Mutton	68	34
3.	Chevon	22	11
4.	Chicken	50	25
	Total	200	100

Source: Survey data, 2017

The households' preferences to the demand for beef, mutton, chevon and chicken revealed that mutton was the most preferred meat item in Bauchi State with about 34% preferences. The reason could be because mutton is a good source of lean meat and agreed to be softer and sweeter than beef. In addition to that, the state is dominated by muslim faithful that use mutton during festivities and therefore, accorded comparative advantage. The implication is that mutton future prospects will be so appealing and its demand will likely over powered the other meat types under study. This is followed by beef, chicken and chevon with 30%, 25% and 11% respectively as presented on Table 2. This is contrary to the findings of Maina and Babagana (2012) and Adetunji and Rauf (2012) which showed that beef was most preferred meat type. It is also contrary to the findings of Elegbede *et al.* (2018) which showed that chicken is the most preferred.

However, some respondents have indicated their preference for chevon over other meat types despite its characteristic odor. This is because the study area is cosmopolitan thus there are some easterners who are known for their preference of chevon that reside in the area. This corresponds with the findings of Maina (2012).

4.2 Major Constraints Affecting the Demand for Major Meat Types

The major constraints affecting meat demand in the study area are presented in Table 3.

Table 3: The Major Constraints Affecting Meat Demand

	Beef		Mutton		Chevon		Chicken	
	f	%	f	%	f	%	f	%
Low income	102	51	103	51.5	63	31.5	85	42.5
Non available	5	2.5	3	1.5	14	7	1	0.5
Lack of preservation	18	9	19	9.5	6	3	12	6
Transportation	5	2.5	1	0.5	1	0.5	1	0.5
High price or cost	28	14	32	16	17	8.5	20	10
Unpleasant taste	0	0	0	0	82	41	0	0
Hygiene / diseases	26	13	25	12.5	9	4.5	32	16
Quality	8	4	11	5.5	5	2.5	5	2.5
Cheapness of substitute	1	0.5	1	0.5	0	0	4	2
No constraints	7	3.5	5	2.5	3	1.5	1	0.5
Lack of the use of kilo	-	-	-	-	-	-	7	3.5
Lack of disaggregation	-	-	-	-	-	-	32	16
Total	200	100	200	100	200	100	200	100

Source: Survey Data, 2017

f = frequency

% = percentage

Constraints to Beef Demand: The constraints that hinder the accessibility of the household heads to beef include low income which accounts for (51%), others were non-availability of the product lack of preservation, transportation, high cost, hygiene/disease, quality and cheapness of close substitute, at 2.5%, 9%, 2.5%, 14%, 13%, 4% and 0.5% respectively. This coincides with the findings of Akinniran *et al* (2017) which shows that low income was a constraint to beef demand.

Constraints to Mutton Demand: The results also indicated that the problems faced by mutton consumers include low income, which constitute the highest 52%, while non-availability, lack of preservation, transportation, high price, hygiene or disease, quality, cheapness of close substitute accounted for 1.5%, 9.5%, 0.5%, 16%, 12.5%, 5.5% and 0.5% respectively. This is similar to that of beef where low income accounted for the most problem while the cheapness of close substitute and transportation were the least on the table.

Constraints to Chevron demand: With respect to chevon, the study revealed that about 41% of the respondents had unpleasant taste as their major problem. They indicated that chevon has a unique characteristic flavor which is disliked by the majority. Other problems include low income, non-availability, lack of preservation, transportation, high price, unpleasant taste, hygiene or disease, quality, were at 32%, 7%, 3%, 0.5%, 8.5%, 41%, 4.5% and 2.5% respectively. However, low income as a problem was the least when beef mutton and chevon were compared also availability of substitute was also not chosen for this meat category this means that regardless to the nutritional value, goat meat is still less appreciated due to their specific smell and taste. This is in line with the findings of Ivanovic *et al.* (2016).

Constraint to Chicken Demand: The findings further revealed that about 42.5% of the household heads faced the problems of low income while non-availability, lack of preservation, transportation, high price, hygiene/disease, quality, cheapness of close substitute, lack of the use of kilo (standard measure), and lack of disaggregation in chicken accounted for 0.5%, 6%, 0.5%, 10%, 16%, 2.5%, 2%, 3.5% and 16% respectively. This is similar to the findings of Kisungwe *et al.* (2012) which reported that scavenging local chickens are basically marketed as a commodity without proper packaging, there is no product branding and product diversification into sub unit (i.e. selling chicken wings legs or quarters), and there is hardly any market segmentation. This implies that the accessibility of chicken meat to low and middle income earners will be relatively low as they cannot afford to buy the commodity in whole.

5.0 Conclusion and Policy Recommendations

This study found some noticeable conclusions. Firstly, on the preferences, the study found out that mutton was the most preferred meat item in Bauchi State with about 34% preferences. Secondly, the constraints associated with meat demand revealed that the major constraints were found to be low income associated with beef, mutton and chicken at 51%, 51.5% and 42.5% respectively. While Chevron had unpleasant taste as the major constraint associated with its demand with 41% of the respondents who reported it. Another major constraint faced by chicken consumers are the lack of the use of kilo (standard measure) and lack of disaggregation (selling in quarters or parts) Other problems identified were non-availability, lack of preservation, transportation, high price, hygiene or disease, quality and cheapness of close substitute.

Therefore, the study recommends the following policies; that relevant stake holders and prospective investors should take benefit of the comparative advantage associated with mutton demand in the state and reap the expected future prospects by engaging in sheep production in the study area. Also, government, cooperative societies and other non-governmental organizations should consider construction of modern abattoirs in the markets, regular pre-mortem and post-mortem meat inspection and there should be a provision of sanitary truck for transporting meat by the marketers from the abattoirs to the markets or retail shops. While the characteristic unpleasant taste of goat's meat should be reduced through increased awareness of the procedures involved in the principles of disbudding/descending to the farmers.

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