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Factors influencing Consumer Preference for Fresh Beef in Sokoto Metropolis, Nigeria

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Abstract

A total of 90 Household heads (15 from each of the six electoral wards of Sokoto metropolis) were randomly selected and interviewed to identify factors that affect preference for fresh beef and to determine the nature of the relationship. Factors identified were; household size, educational level, occupation, expenditure on beef, and expenditure on beef substitutes. A quadratic regression model was found to best explain the relationship between preference and the factors identified. Household size, level of education and expenditure on beef substitutes were significantly related to preference for fresh beef (P<0.01), However, occupation and expenditure on beef did not influence preference (P>0.05). As expected expenditure on beef substitutes tends to decrease preference for beef. Beef has been found to be preferred over other sources of meats.

Keywords: Consumer, Preference, fresh beef, Sokoto Metropolis, Nigeria

Introduction

Meat is generally defined as the skeletal muscle from animals, including the connective tissues and fat that are naturally associated with the muscle (Jeremiah, 1978) and may also include all the edible parts of an animal (Gambo, *et al*., 2010). Meat according to Udo and Akintola (2003) is the most important source of animal protein in Nigeria. Beef is widely cherished and consumed in households almost on daily basis. It is a source of high quality protein (Aduku and Olukosi, 2000; Oloyede, 2005). Some of the major contribution of beef to the national economy is that it serves as a source of animal protein and provides a source of livelihood for a large number of the Nigerian populace. Agaie *et al., (*1997) estimated beef to account for about 52% of the total meat consumed in Sokoto metropolis. Studies about consumers' preference are appreciated by the food industry since they can explain and predict consumers' decisions (Verbeke and Vackier, 2004). Consumers preference for meat are influenced by geography, race, ethnicity, social background, family composition and household income (Gossard and York, 2003). Consumer preference describes the reasons for the choice people make when selecting products/services. In addition, analyzing the factors that determine consumer preference helps the business target their products towards specific consumer groups, develop new products and identify why some products are more successful than others. A rational consumer prefers and buys more of

a commodity at a lower price and vice versa. However, there are other factors that determine why so much or less are preferred at a particular price. One of the most important of these factors is money people have to spend, change in income level of the consumers are likely to have considerable influence on the level of preference for the commodity. Taste, flavor, quality, social, economic factors may tend to dictate preference for a product. This study is aimed at identifying some factors that affect preference for fresh beef and to determine the nature of the relationship in Sokoto metropolis.

Methodology

Sokoto metropolis is made four Local Government areas, Sokoto north, Sokoto south, Wamakko and part of Kware. Three LGAs were selected purposely for the study. It lies within latitude 12-13 ’58 N and longitude 4 ‘8 -6’54 E. It covers about 28.30 Km^2 (Junaidu, *et al.,* 1995).

Two wards were selected randomly from each of the three Local Government Areas. The selected wards were Tudun wada and Waziri from Sokoto North, Sarkin adar and Rijiya from Sokoto South, while Gwiwa, and Bado in Wamakko Local Governent areas respectively. Fifteen respondents were randomly selected from each of these wards to constitute a total of ninety respondents. Structured questionnaire was used to elicit information on preference for beef, monthly expenditure on beef, monthly expenditures on beef substitute, education, and family size. The data was fitted to various regression models. However, the quadratic model gave the best fit based on R^2 and t value.

Model specification

The model is a quadratic function specified as follows:

$Pb = B_o + B_1x_1 + B_2x_2 + B_3x_3 + B_4x_4 + B_5x_5 + e$

Where:

Pb=Preference for consumption
Bo=Constant in the regression equation
B= 1-5 the coefficients
X_1=Household size (numbers of persons)
X_2=Educational level of respondents
X_3=Occupation of respondents
X_4=Monthly expenditure on beef (₦)
X_5=Monthly expenditure on beef substitute (₦)
e = Disturbance term or error term

Table 1: Results of quadratic regression analysis for beef preference

Variable	Regression coefficient	T-value
Constant	1.445	18.626*
X_1 (household size)	3.14	7.784**
X_2 (education level)	0.726	1.739**
X_3 (occupation)	0.050	0.110ns
X_4 (monthly expenditure on beef)	0.744	1.015ns
X_5 (monthly expenditure on beef substitute)	-1.982	-2.585**

Source: Field survey, 2006
R^2 = 0.822 82.2%
F value = 36.413
N =90
ns = not significant
* * = significant at 1% level
* = significant at 5%

Results and Discussion

Result of quadratic regression analysis of beef preference

Table 1 shows the estimated coefficients with respect to each independent variable as well as their corresponding t-values, it also shows the coefficient of determination (R^2) to be (0.822).This R^2 value indicates that the independent variables are responsible for 82.2% contribution on the dependent variable. This implies that the independent variables are good explanatory variables or explain the variation in the dependent variable (beef preference) for consumers. It was shown from Table 1 that the household size X_1 with the highest coefficient of 3.14, positive sign and highly significant at 1 % indicates that the larger the household size the more the consumption and higher the preference to beef in the metropolis. Particularly households with children are more likely concerned with high preference for red meat to balance up the nutritional requirements for proper development and growth of the young once. The level of education was highly significant at 1% among all the variables considered, indicating that literacy level of the respondents influenced the choice of beef as an important source of protein in the area. These may be attributed to the fact that education guide to decide proper dietary source that would improve state of health. This could be attributed to the awareness of educated household head that proteinous foods are essential for healthy development and growth of human. Further more advanced education appears to positively influence the preference for meat. This is also in consistent with the findings of Amimo *et al. (*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. The regression coefficient for X_3 (occupation) is 0.050. This signifies that increasing the number of people with occupation by 1% holding other factors constant will lead to 0.049 increases in level of preference for beef. Because with occupation household heads could generate more income that would afford them to buy beef for their family members. The positive sign on the coefficient indicate that the higher the occupational earning of the household head the higher will be the level of preference, but the relationship is insignificant, signifying that there are other expenses to be considered other than beef. This result is consistent with the findings of Gambo *et al.* (2010) who reported that occupation of the household head as the determinant for beef preference in Maiduguri metropolitan, north-western, Nigeria.

The regression coefficient for X_4 (monthly expenditure on beef) is 0.744. This indicate that increasing the monthly expenditure on beef by 1% holding other factors constant will lead to 0.744 increase in preference for beef, the positive sign indicates that the higher the monthly expenditure on beef, the higher the preference, because people spend more money on what they prefer most, this view is in accordance with Aromolaran (1999) who recorded a positive relationship between monthly expenditure of household on food and meat because consumers often desire more expensive goods and services when their income improves.

The regression coefficient of X_5 (monthly expenditure on beef substitute) is -1.982, this implies that a decrease in monthly expenditure on beef substitute by

1% will lead to 1.982 increase in level of preference for beef, the negative sign here means that monthly expenditure on beef substitute is a factor that account for variation in preference for beef consumption. This result suggests that the lower the monthly expenditure on beef substitute the higher will be the level of preference for beef.

Table 2: Reasons for beef preference of the respondents

Reason(s)	**Frequency**	**Percentage (%)**
Availability	08	8.9
Taste	46	51.1
Cheapness	07	7.8
Others specify	29	32.2
Total	**90**	**100**

Source: Field survey 2006

Table 2 shows that majority of the respondents (51.1%) prefer to consume beef because of the perceived better taste than other meats. Others (32.2 %) prefer beef because of nearness to beef source, culture, habit and flavor, made them to prefer fresh beef compared to other meats.

Table 3: Frequency of fresh beef consumption

Frequency of consumption	**Frequency**	**Percentage (%)**
Daily	38	42.2
Weekly	04	9.8
Fortnightly	08	8.9
Total	**90**	**100**

Source: Field survey 2006

Table 3 indicates the frequency at which consumers took beef as a source of protein. Only 42.2 % consume beef on daily basis as their daily dietary menu. This signifies that not all households eat beef daily, which may imply the likely inability of meeting the required daily intake of protein though beef is not the only available source of protein. This could also be attributed to low expenditure to beef, prohibitive prices of beef at certain period of the year or switching to other sources of meat/proteins to balance the daily dietary allowance/requirements.

The forms of fresh beef preparation differ from one another depending on the type of cooking and the spices used to package the desired form. The commonly used in the metropolis are listed in Table 4 below.

Table 4: Forms of fresh beef preparation preferred by the respondents

Form of beef	Frequency	Percentage (%)
Roasted	13	14.4
Stewed	44	48.9
Fried	28	31.1
Kilishi	05	5.60
Total	**90**	**100**

Source: Field survey 2006

Majority of the respondents (48.9%) prefer to eat stewed beef as obtained in family diet menu, 31.1% prefer fried beef. Kilishi, a seasoned and dried meat product was preferred the least (5.60%). This might be due to the ease with which the products are prepared and the cost involved in their production. For example stewing require cheaper ingredients compared to frying and kilishi requires more time, more ingredients and is more expensive than all the other products.

Problems associated with beef preference

There are some constraints that are associated with beef preference in the study area during the survey. It was revealed that majority (5.4%) of the respondents do not have any problem with beef preference, where as 45.6% had problem with beef preference due what respondents perceived as problems indicated in Table 5.

Table 5: Distribution of respondents according to problems with beef preference

Problem	Frequency	Percentage (%)
Price	26	28.89
Availability	8	8.89
Health effect	8	8.89
No constraint	48	53.33
Total	**90**	**100**

Source: Field survey 2006

The problems outlined by some of the households in terms of price and availability are in consistent with economic theory of demand (Luz *et a*l., 2009). According to Adetunji and Rauf (2012), price of beef is among major reasons for the household's choice of preference, when price for a commodity is high its lead to lower consumption. This suggests that households are very sensitive to change in prices of various meat types been sources of proteins. There are virtually no religious or cultural taboos on the eating of beef in the study area compared to goat meat which is dictated by cultural and traditional backgrounds of Sokoto metropolitans' (Abdullahi *et al*., 2011). This could be the reasons why only few (9.8%) respondents opined that beef may be detrimental to their health.

Conclusion

Beef has been found to be a very important source of protein among the respondents; this is demonstrated by the fact that majority of the respondents have preferences for beef over other meat sources in the area. Considerable proportions of the respondents have reported consuming beef on a daily basis. Finally it was found that beef preference is influenced most by Household size, level of education and expenditure on beef substitutes. Research into the social, biological and technological dimensions of beef preference will be of importance as it will fine tune our understanding of the primary basis of preference.

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