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20 August 2013

Online at <https://mpra.ub.uni-muenchen.de/49223/>

MPRA Paper No. 49223, posted 22 Aug 2013 04:21 UTC

Meat Demand Analysis: A Case Study of Akungba-Akoko Township in Ondo State

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ABSTRACT

This study examined the preference for and consumption pattern of meat types by individual households - Specifically, the study investigated the extent to which household income, household size and other socio-economic factors predicted monthly expenditure on meat. Three Hundred household heads were selected from the area using the simple random sampling technique. Results indicated that beef was the most preferred meat (60.14%), followed by chicken (29.72%) and turkey (26.92%). The proportion of household's total expenditure on meat was high for low income households (on average 18%) while on average of 9% for middle/high income households. The percentage of household food expenditure expended on meat was high for both low income households and high income households relative to middle income households. The most important factor considered by households while purchasing meat was the taste and habits, followed by nutritional value and prices. Other factors observed were freshness, tenderness and religious sentiments.

Keywords: Expenditure Pattern, Meat Consumption, Households

INTRODUCTION

Prior to discovery of oil in 1970's, agricultural exports were the backbone of the Nigerian economy with livestock products contributing a significant share of exports. During this period, the country had a well-developed domestic agricultural market. In spite of this sound potential for growth in the domestic market, Nigeria has been witnessing a drastic decline in agricultural production, especially in livestock and meat sectors of the industry (Adesehinwa, et al, 2004). For instance, livestock and fishing contributed about 3% to Nigerian Gross Domestic Product in 2011 (CBN, 2012). This contribution to GDP mainly depends on the production and consequent utilization of the meat and fish products by the consumers.

Meat is considered to be highly nutritious among animal products and thus, has become an integral component of human diet (Atinmo & Akinyele, 1983). It is a rich source of valuable proteins, vitamins, minerals, micronutrients and fats. In addition to the supply of long chain 3 omega fatty acids, meat consumption is supposed to supply conjugated linolenic acid that provides multifaceted nutrient for human health. It is also said that meat consumption reduces risk of cancers, arteriosclerosis and adiposity, while delaying the onset of diabetes. As such, demand for meat is ever increasing with increase in the population and awareness about its nutritional value (Raghavendra, 2007). Nevertheless, there are worries in medical parlance regarding the fat content in meat and the possible effect on health; current evidences and research findings are in favour of intake of at least lean meats on a regular basis to protect and promote human health (Raghavendra, 2007).

The meat consumption behavior may be a deciding factor in the development of livestock sector. Consumer's behavior indicates the process, activities that people engage in when searching for, selecting, purchasing, using, evaluating and disposing of products and services, so

as to satisfy their needs and decisions. The consumer behavior theory postulates that consumers look at completeness, monotonicity, reflexivity and transitivity, continuity and convexity, which influences their behavior (Varian, 2009). The study of consumer helps firms and organizations improve their marketing strategies by understanding the issues such as (a) how consumers feels, reason and select between different alternatives and (b) how consumer is influenced by his environment.

There are many external factors such as culture, social class, family decisions and certain situational determinants that may influence the consumer's purchase decisions. The meat consumption behavior falls within these lines and varies with the societal set up in which the consumers are operating.

A few research studies have been carried out on meat demand in Nigeria (Mba, 1983; Oyenuga, 1987; Ademosun, 2000; Adesehinwa, et al, 2004; Amao et al., 2006; Afolabi, 2002, Erhabor, et al, 2008; Ogunniyi, et al (2012); Duruchukwu, 2010; Emokaro & Adamasun, 2012). However, these researchers have focused their studies mainly on production and marketing aspects with few being focused on the demand of meat/meat products. Against this background, this study aimed to identify the meat consumption patterns in Akungba-Akoko; and analyze consumer preferences for different types of meat in Akungba community.

METHODS

The study was carried out in Akungba-Akoko, a town in the Akoko South West local government area of Ondo State. The Local Government has its headquarters in Oka-Akoko with an area of 226km² and a population of 229, 486 at the 2006 census. It is bounded in the east by

Epinmi and Ipe; in the west by Akungba and Supare; in the north by IseIboropa and Ugbe; in the south by Oba and Ikun towns.

Predominantly, the vegetation is of the derived savanna with scattered forests all over the area. The adjacent lowlands have wood land savannah features a biotic climax which resulted from frequent bush burning. In terms of atmospheric conditions the situation remains almost the same as elsewhere in Ondo State. For lack of adequate arable farmland, Oka people are predominantly migrant farmers. Most of them engage in mere subsistence farming. They produced foodstuffs like Yams, maize and cassava. The more daring among them also combine the production of cash crops like cocoa, coffee and rubber. Besides, more and more of the Okas are going into commercial activities while others are engaged in tertiary occupation. (Wikipedia)

We use purposive and convenient sampling criteria to select Akungba Community as our sample area and then randomly chose the respondents. Akungba Akoko was purely an agrarian village. The people were known for agricultural activities, only few were engaged in some commercial activities like trading, weaving and artisan. Socio-economic activities were at the barest minimum. The relocation of Ondo State University from Ado-Ekiti to Akungba-Akoko on 9th November 1999, however changed the socio-economic state of the town. The population of the community is almost double in number compare to 1991 population census figure (Ehinmowo&Eludoyin, 2010). According to the 2006 census, the population of the host community Akungba-Akoko was 15,579 and their major economic activities are now farming, teaching, banking and trading.

The present study was carried out through a cross-sectional design and the heads of household were the participants. The data collected from three hundred (300) households pertained to;

- i. General information from individual respondents on their social and economic characteristics
- ii. Monthly family expenditure on food
- iii. Quantity of meat products consumed by individual and;
- iv. Types of meat and meat products consumed and the preference for different meat types.

The data were collected through interviewer administered questionnaires, conducted in July and August, 2012. We made use of two sampling methods. First, we used stratified sampling, whereby we divided the sample size into four groups; public servants (teachers, workers in local government, state government, federal government), private organization, artisans and others. There after we employed convenient sampling method to administer questionnaire to respondents in each group.

Selection of meat types

Important meat types and meat products like beef, pork, bush meat, chicken, turkey, fish, cow skin (ponmo) and egg were selected for the study based on the revealed preferences that were elicited from the consumers and the marketers during pre-study period. Beef and poultry were the important meat types consumed by the households irrespective of their socio-economic background. Only certain sections of the population used to consume bush meat and pork.

RESULTS AND DISCUSSION

Income Wise Distribution of Households

Income-wise distribution of sample households in Akungba-Akoko is presented in the Table 1. The sample households were post-classified into five groups based on their monthly family

income. For the purpose of analysis, households that earn less than N40,000 was classified as low income. Those earning between N40,000 and N80,000 were classified middle income and those that earn above N80,000 were grouped as high income grouped. More so, the households with monthly income of up to N19,999 were considered to belong to Income Group 1 (IG₁); those with income between N20,000 and N39,999 were classified into Income Group 2 (IG₂); those with income of N40,000 to N59,999 were grouped into Income Group 3 (IG₃), those with income of N60,000 to N79,999 were grouped into Income Group 4 (IG₄), and finally those with income of more than N80,000 were categorized as Income Group 5 (IG₅). Accordingly, the proportion of sample households in IG₁, IG₂, IG₃, IG₄ and IG₅ was approximately 15 per cent, 25 per cent, 31 per cent, 14 per cent and 16 percent respectively.

Table 1: Income-Wise Distribution of Households

Households income/month	Income Group	Number of households	Per cent of Total Number of Households
0 - 19,999	IG ₁	44	14.66
20,000 – 39,999	IG ₂	74	24.67
40,000 -59,999	IG ₃	93	31.00
60,000 -79,999	IG ₄	42	14.00
80,000 – above	IG ₅	47	15.67
		300	100.00

Socio-Economic characteristics of Sample households

The statistical analyses revealed that majority of the respondents were under 45 years of age (35.23 years on average), had the family size of 4.64 with about 77 percent nuclear families. Most of the respondents had education up to secondary school and intermediate (86.0%). Among the total respondents, about 42% were Public servant and workers in private organization, artisan and under-employed were about 31% and remaining respondents (27.7%) were Farmers, drivers, washman e.t.c. The average annual income of respondents from different sources was found to be about N56,363.

Table 2: Socio-Economic characteristics of Respondents

Variablee	Frequency	Percentage (%)
Age (Years)		
18 – 30	167	55.67
31 – 43	62	20.67
44 – 56	49	16.33
57 – 65	22	7.33
Total	300	100.00
Sex (Gender)		
Male	141	47.00
Female	159	53.00
Total	300	100.00
Marital Status		
Single	155	51.67
Married	118	39.33
Divorce	14	4.67
Widowed	13	4.33
Total	300	100.00
Educational level (years)		
No formal education (0)	10	3.33
Primary education (6)	7	2.33
Junior Secondary school (9)	6	2.00
Senior Secondary school (12)	125	41.67
Tertiary education (16)	108	36.00
Other higher education (18)	44	14.67
Total	300	100.00
Household size (number of persons)		
1 – 3	45	15.00
4 – 6	136	45.33
7 – 9	76	25.33
10 – 12	32	10.67
13 and above	11	3.67
Total	300	100.00
Occupation		
Public servant	64	21.33
Private organisation	62	20.67
Artisan	39	13.00
Unemployed/underemployed	52	17.33
Others e.g farmer	83	27.67
Total	300	100
Family type		
Nuclear	230	76.67
Extended	70	23.33
Total	300	100.00
Eating Habit		
Vegetarian	14	4.67

Non-vegetarian	286	95.33
	300	100.00

Table 3: Consumer preference for meat types

Meat	Income Groups					Total
	IG ₁	IG ₂	IG ₃	IG ₄	IG ₅	
Beef	33 (19.19)	44 (25.58)	54 (31.40)	23 (13.37)	18 (10.47)	172 (100.00)
Pork	4 (40)	1 (10)	2 (20)	2 (20)	1 (10)	10 (100.00)
Bushmeat	2 (5.13)	14 (35.90)	13 (33.33)	4 (10.26)	6 (15.39)	39 (100.00)
Chicken	15 (17.65)	16 (18.82)	26 (30.59)	18 (21.18)	10 (11.77)	85 (100.00)
Turkey	16 (20.78)	18 (23.38)	21 (27.29)	11 (14.29)	11 (14.29)	77 (100.00)
Cow skin	9 (17.31)	10 (19.23)	16 (30.77)	14 (26.92)	3 (5.77)	52 (100.00)
Fish	3 (6)	16 (32)	15 (30)	8 (16)	8 (16)	50 (100.00)
Egg	6 (18.18)	7 (21.21)	12 (36.36)	7 (21.21)	1 (3.03)	33 (100.00)
Others	0 (0)	1 (9.09)	4 (36.36)	5 (45.46)	1 (9.09)	11 (100.00)

Even though 300 respondents were selected for the study, only 286 respondents were considered in the present section as the remaining 14 respondents were found to be vegetarians. Hence, the data presented in the current section represents the expressions of 286 respondents only. The meat consumption patterns of people of Akungba-Akoko in Ondo State as shown in Table 3 revealed that the most preferred meat was beef (60.14%), followed by chicken (29.72%) and turkey (26.92%). It was also revealed that about 18% of the respondents have preference for fish and ponmo (Cow Skin) each.

The reasons the respondents attributed for their preference were largely taste and habits. So the individuals taste is the key factor for their preference of chicken/ mutton/fish. In the study area, pork had low preference. This is an indicator of how the religious sanctions influence the meat consumption behavior. It's a well-established fact that religious belief forbids Muslims and

some Christian sects from eating pork. So these factors ought to be considered by the livestock planners while advocating any species for meat purpose in a given area. During the study period, average cost per kg of beef, turkey and chicken in the study area was found to be N900, N750 and N700 respectively as against fish cost of N150 per units. As beef has much market potential, followed by turkey and chicken, more emphasis should be given to their production locally.

CONSUMPTION PATTERN OF HOUSEHOLDS

Table 4: Average Monthly Food and Non Food Expenditure

Income Group	Food Expenditure			Total Expenditure
	Meat and meat products	Other food Items	Total food expenditure	
IG ₁	2,305 [44.35](19.69)	2,892	5,197 (44.40)	11,704
IG ₂	4,890 [52.5](17.87)	4,425	9,314 (34.03)	27,369
IG ₃	4,195 [30.04](09.31)	9,700	13,965 (31.02)	45,016
IG ₄	5,950 [23.25](09.16)	19,645	25,595 (39.41)	64,940
IG ₅	12,990 [41.76](09.78)	18,119	31,109 (23.43)	132,787

% of food expenditure in parenthesis [], % of total expenditure in bracket ()

Table 4 presents average monthly food and non-food expenditure of households in different income groups. As the table reveals, the households in IG1 devoted around 44.40 per cent of their total monthly expenditure for food. The proportion of monthly expenditure set aside for food for IG₁, IG₂, IG₃, IG₄ and IG₅ was around 44.4%, 34.03%, 31.02%, 39.41% and 23.43% respectively. It is further revealed from the table that, on an average that each household in IG₁ spent 19.7 per cent of its monthly total expenditure on meat and meat products. This proportion was 17.87 per cent for households in IG₂, 9.32 per cents for households in IG₃, 9.16 per cent for households in IG₄ and 9.78 per cent for households in IG₅. The proportion of household food expenditure that goes into meat consumption is high for both low income households and high income households relative to middle income households. The allure reason for the behaviour of the low income consumers is not unconnected with the tradition of not-eating without meat,

regardless of the type of meat. Table 5, confirms this assertion in that it reveals the number of times the households in different income group, consumed meat and meat product. 28% of the respondents consumed meat 6 times a week (only 25% are high income earners) and 33% lost count of the number of times they eat meat (and about 93% of this category are low and middle income earners).

Table 5: Frequency of consumption of meat and meat product by households

Income Group	Frequency of consumption of meat and meat product in a week by households							
	None	Once	Twice	3 times	4 times	5 times	6 times	I don't know
Low-income Group	1 (0.33)	2 (0.66)	7 (2.33)	15 (5.0)	12 (4.0)	16 (5.33)	25 (8.33)	36 (12.0)
Middle-income Group	2 (0.66)	1 (0.33)	2 (0.66)	5 (1.66)	15 (5.0)	11 (3.66)	40 (13.33)	57 (19.0)
High-income Group	-	1 (0.33)	-	2 (0.66)	6 (2.0)	8 (2.66)	21 (7.0)	6 (2.0)
Total	3 (1.0)	4 (1.33)	9 (3.0)	22 (7.33)	33 (11)	35 (11.66)	86 (28.66)	94 (33.0)

*Number in parentheses indicate percentages to the total number of households consuming meat and meat product

Table 6: Effect of Socio-economic variables on meat consumption

Variable	coefficient	Probability
C	7.841125	0.0000
AGE	0.001294	0.2745
EDUCATION	0.008346	0.0265
FAMILY SIZE	0.015526	0.0007
HOUSEHOLD INCOME	4.59E-06	0.0000
SEX	0.039965	0.1435

Table 6 show the result of log-linear model (dependent variable in the logarithm form and the explanatory variables in the linear form), and the slope coefficients of the explanatory variables represent semi-elasticity. We use dummy variable to analyze the sex of the respondents. On the effect of socio-economic variables on meat consumption behavior; FAMILY SIZE, EDUCATION AND HOUSEHOLDS INCOME are statistically significant at 5% level, among the factors that influence meat consumption expenditure. AGE AND SEX of the household head

are important factors although not statistically significant even at 10% level. To find out the percentage change in meat consumption expenditure for female respondents versus male respondents, we take the anti-log of the SEX coefficient of 0.039965, subtract 1, and then multiply the difference by 100 (Gujarati and Porter 2009), i.e sex variable will only bring about 4.08% change to meat consumption expenditure. Whereas a unit increase in age of respondent/family head will on average raise meat consumption by about 0.13%. The R^2 value is an indication that 51% of the variation in the amount of meat consumed by the consumers is explained by these explanatory variables - income of consumers, age of consumers, household size of consumers, sex and educational level. Other factors like prices of meat product, price of substitutes, taste religious belief etc might be some of the factors not capture in the model. The significance of education variable, shows that consumption of meat has to do with knowing the importance of protein of which meat is a good source. The coefficient of household income was also positively significant which implies that it has a direct relationship on the meat consumption, more income to the family will lead to an increase in the quantity of meat to be consumed and finally, it is expected that household will increase their consumption of meat as the family size increase.

CONCLUSION

The present study was conducted in Akungba-Akoko Township in Ondo State using cross-sectional data. The meat consumption patterns of people in the study area shows that beef is the most preferred meat (this is consistent with finding of Ikpi, 1990), followed by chicken and turkey. The proportion of household's total expenditure that goes into meat consumption is high for low income households (on average 18%) while on average of 9% for middle/high income

households. The percentage of household food expenditure that is expended on meat is high for both low income households and high income households relative to middle income households. The most important factor considered by households while purchasing meat was the taste and habits, followed by nutritional value and prices. Other factors observed were freshness, tenderness and religious sentiments. Hence, livestock farmers, extension agencies, policy makers should consider the various determinants such as preferences, choices, sentiments that are influencing the meat consumption behavior among the people in formulating the strategies.

This study is limited, in that it only analyzed the preference for and consumption pattern of meat types. Future study could analyze the relationship between the prices of Meat products and their respective budget share.

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