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AN ANALYSIS OF MEAT DEMAND IN AKUNGBA-AKOKO, NIGERIA

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ABSTRACT

This study examined households' preference for and meat consumption patterns. Participants were 300 heads of household (141 males; 159 females) whose ages ranged between 18 to 65 years ($M = 43.20$; $SD = 10.11$). Results indicated that beef (60.14%) was the most preferred meat, followed by chicken (29.72%) and turkey (26.92%). The proportion of household's total expenditure on meat was high for low income households (18%), compared with middle or high income households. The percentage of household food expenditure expended on meat was high for both low income households and high income households, compared 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, in livestock farming the various determinants such as preferences, choices, sentiments that may influence the choices of meat consumers' should be considered.

Key words: 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 (Adesehinwa, Okunola & Adewumi, 2004). 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. Previous studies (e.g. Afolabi, 2002; Duruchukwu, 2010; Erhabor, Ahmadu & Ingawa, 2008; Mba, 1983;

Ogunniyi, Ajiboye & Sanusi, 2012; Oyenuga, 1987) on meat demand in Nigeria have focused their studies mainly on production and marketing aspects. Less research attention has focused the demand of meat and 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.

Meat has been regarded as one of the most nutritious animal products because it is a rich source of valuable proteins, vitamins, minerals, micronutrients and fats, which provide multifaceted nutrient for human health (Mba, 1983). 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 may be a deciding factor in the development of livestock sector. Varian (2009) defined consumer behavior as 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 (Varian, 2009). Studies (e.g. Ademosun, 2000; Adesehinwa et al., 2004; Emokaro & Amadasun, 2012; Omolaran, 2004) have shown that external factors such as culture, social class, family decisions, religious (Akinwumi, Odunsi, Omojola, Aworemi & Aderinola, 2011; Odo, Marire, Alaku, Akpa, Nwosu & Anikwe, 2004; Teklebrhan, 2012), and certain situational variables influence the consumer's purchase decisions. Since meat consumption behavior falls within these lines, it was hypothesized that *demand for meat in Akungba-Akoko varies with the societal set up where the consumers operate*.

METHODS

Study Setting

The study was carried out in Akungba-Akoko, a town in the Akoko South-West Local Government Area of Ondo State. As an agrarian town, the people of Akungba-Akoko were known for agricultural activities. Only few of them engaged in commercial activities like trading, weaving, and artisan. However, the relocation of Ondo State University from Ado-Ekiti to Akungba-Akoko, in November 1999, changed the socio-economic

state of the town. The population of the community increased from about 9,423 in 1991 to 15,579 in 2006 (Ehinmowo & Eludoyin, 2010).

Design and Participants

The study adopted a cross-sectional design. Three hundred heads of household (141 males; 159 females) whose ages ranged between 18 to 65 years (*M* = 43.20; *SD* = 10.11) participated in the study. Majority of the respondents (286 or 95.3%) were non-vegetarians. The respondents indicated their marital status. One hundred and fifty five (51.7%) of them were single, 118 (39.3%) were married, 14 (4.7%) were divorced, and 13 (4.3%) were widowed. In the case of family size, 45 (15%) of the indicated that their family had 1 – 3 persons, 136 (45.3%) had a family of 4 – 6 persons, 76 (25.3%) had 7 – 9 persons in their family, 32 (10.7%) had 10 – 12 persons, and 11 (3.7%) had at least 13 persons in the family. In terms of education, 10 (3.3%) had no formal education, 7 (2.3%) had primary education, 6 (2%) had junior secondary school education, 125 (41.7%) had senior secondary school education, 108 (36%) had tertiary education, and 44 (14.7%) had other higher education. The distribution of the respondents, in terms of occupation, indicated that 64 (21.3%) were public sector workers, 62 (20.7%) were private sector workers, 39 (13%) were artisans, 52 (17.3%) were underemployed or underemployed, 83 (27.7%) were either farmers or traders.

Measure

The data were collected based on a questionnaire designed to gather general information the respondents' socio-economic characteristics, monthly family expenditure on food, quantity of meat products consumed and; types of meat and meat products consumed as well as preference for different meat types.

Procedure

In order to select type of meat and products for this study, a pre-study interaction was conducted with consumers and marketers of meat products. Based on this, important meat types and meat products like beef, pork, bush meat, chicken, turkey, fish, cow skin (ponmo) and egg were selected for the study.

In selecting the participants, 2 sampling techniques were adopted. First, the sample was stratified into 4 groups: public sector workers (teachers, workers in Local, State and, Federal Government), private sector workers, artisans, and others. Second, convenient sampling technique was used in distributing the questionnaire to respondents in each group, who were willing to participate in the study. Out of the 340 questionnaires distributed, 300 were good enough for analysis. Data collection covered July and August, 2012.

Data Analysis

Data were analyzed using simple percentages, cross-tabulation, and a log-linear model.

RESULTS

Income-wise Distribution of House-holds

The sampled households were post-classified into five groups based on their monthly family income. The results are presented in Table 1.

Table1: **Income-wise Distribution of Households in Akungba-Akoko**

Monthly households income (in Naira)	Income group	Households	%
0 - 19,999	IG_1	44	14.7
20,000 – 39,999	IG_2	74	24.7
40,000 - 59,999	IG_3	93	31.0
60,000 - 79,999	IG_4	42	14.0
80,000 – above	IG_5	47	15.7

The households with monthly income of up to N19,999 were considered to belong to Income Group 1 (IG_1); those with income between N20,000 and N39,999 were classified into Income Group 2 (IG_2); those with income of N40,000 to N59,999 were grouped into Income Group 3 (IG_3), those with income of N60,000 to N79,999 were grouped into Income Group 4 (IG_4), and finally those with income of more than N80,000 were categorized as Income Group 5 (IG_5). Accordingly, the proportion of sample households in IG_1, IG_2, IG_3, IG_4 and IG_5 was approximately 15 per cent, 25 per cent, 31 per cent, 14 per cent and 16 percent respectively. Households that earned less than N40,000 were regarded as low income earners, those that earned between N40,000 and N80,000 were regarded as middle income earners and those that earned at least N80,000 were regarded as high income earners.

Patterns of Meat Consumption

The respondents' meat preference was calculated. Out of the 300 respondents, 14 respondents were found to be vegetarians. Therefore, analysis was based on the responses of 286 non-vegetarians. The results are presented in Table 2.

Table 2: **Consumer Preference for Meat Products**

Meat product	Income groups					
	IG₁	*IG₂*	*IG₃*	*IG₄*	*IG₅*	**Total**
Beef	33(19.2)	44(25.6)	54(31.4)	23(13.4)	18(10.5)	172
Pork	4(40)	1(10)	2(20)	2(20)	1(10)	10
Bush meat	2(5.1)	14(35.9)	13(33.3)	4(10.3)	6(15.4)	39
Chicken	15(17.7)	16(18.8)	26(30.6)	18(21.2)	10(11.8)	85
Turkey	16(20.8)	18(23.4)	21(27.3)	11(14.3)	11(14.3)	77
Cow skin	9(17.3)	10(19.2)	16(30.8)	14(26.9)	3(5.8)	52
Fish	3(6)	16(32)	15(30)	8(16)	8(16)	50
Egg	6(18.2)	7(21.2)	12(36.4)	7(21.2)	1(3)	33
Others	0(0)	1(9.1)	4(36.4)	5(45.5)	1(9.1)	11

Note: % is presented in brackets.

Table 2 reveals that the most preferred meat was beef (60.1%), followed by chicken (29.7%) and turkey (26.9%). It was also revealed that about 18% of the respondents preferred fish and ponmo (cow skin) each.

The average monthly expenditure on food and non-food items of the different income groups are presented in Table 3.

Table 3: **Average Monthly Expenditure on Meat and Non-meat Food Items**

Income group	Expenditure on food	Expenditure Non-food	Total expenditure
IG₁	2,305 (44.4) (19.7)	2,892	5,197 (44.4)
IG₂	4,890 [52.5] (17.8)	4,425	9,314 (34)
IG₃	4,195 [30] (09.3)	9,700	13,965 (31)
IG₄	5,950 [23.3] (09.2)	19,645	25,595 (39.4)
IG₅	12,990 [41.8] (09.8)	18,119	31,109 (23.4)

Note: % of food expenditure is in parenthesis. % of total expenditure is in bracket.

As shown in Table 3, the households in IG₁ devoted around 44.4 % 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%, 31%, 39.4% and 23.4%, respectively. It is further revealed from the table that, on an average that each household in IG₁ spent 19.7 % of its monthly total expenditure on meat and meat products. This proportion was 17.9 % for households in IG₂, 9.3 % for households in IG₃, 9.2 % for households in IG₄, and 9.8 % for households in IG₅.

Heads household in each income category were asked to indicate

how often their family consumed meat products on an 8-point response format. The results are presented in Table 4.

Table 4: **Frequency of Consumption of Meat Products by Income Groups**

Income group	Response category							
	None	Once	Twice	3 Times	4 Times	5 Times	6 Times	I don't know
Low-income	1(0.3)	2(0.7)	7(2.3)	15(5)	12(4)	16(5.3)	25(8.3)	36(12)
Middle-income	2(0.7)	1(0.3)	2(0.7)	5(1.7)	15(5)	11(3.7)	40(13.3)	57(19)
High-income	0	1(0.3)	0	2(0.7)	6(2)	8 (2.7)	21(7)	6(2)
Total	3(1.0)	4(1.3)	9(3)	22(7.3)	33(11)	35(11.7)	86(28.7)	94(33)

Note: % of response is presented in brackets.

Finally, a log-linear model, with dependent variable in the logarithm form and the explanatory variables in the linear form, was constructed to determine the extent to which the socio-economic variables influenced meat consumption. The results are presented in Table 5.

Table 5: **Effect of Socio-economic Variables on Meat Consumption**

Variable	Coefficient	Probability
Constant	7.84	.00
Age	0.001	.27
Education	0.008	.03
Family size	0.016	.001
Household income	4.59	.00
Sex	0.040	.14

The results in Table 5 show that the slope coefficients of the explanatory variables represent semi-elasticity. To determine the sex difference in the percentage change in meat consumption expenditure, 1 was subtracted from the anti-log of the sex coefficient of 0.040 and the difference was multiplied by 100 (Gujarati & Porter, 2009). Results indicated that sex only brought about 4.08% change in meat consumption expenditure. Whereas a unit increase in age of family head, on the average, raised meat consumption by about 0.13%.

DISCUSSION

This study investigated the extent to which meat consumption was associated with socio-economic

factors. Result indicated that meat preference could be attributed largely to taste and habits; but less associated with socio-economic factors. So the individuals' taste was the key factor in their preference for chicken, meat or fish. In the study area, pork had low preference. This could be attributed to religious influence. It's a well-established fact that religious belief forbids Muslims and some Christian sects from eating pork (Odo et al., 2004; Teklebrhan, 2012). 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.

The proportion of household food expenditure that went into meat consumption was high for both low income households and high income households compared with middle income households. The allure reason for the behaviour of the low income consumers might not unconnected with the tradition of not-eating without meat, regardless of the type of meat. Evidently, Table 4 confirmed this assertion. Twenty eight percent of the respondents consumed meat 6 times a week (only 25% were high income earners) and 33% lost count of the number of times they ate meat (about 93% were low and middle income earners).

The results on the connection between socio-economic variables and meat consumption indicated that family size, education and household income were statistically significant at 5% level. Age and sex of the household head were important factors although not statistically significant even at 10% level. The estimated coefficient household income indicated that a one thousand unit increase in income would lead to a 0.46 per cent increase in meat consumption expenditure. This finding did not support Keynes' (1936) absolute income hypothesis that income is the sole determinant of consumption.

The R^2 value indicated that 51% of the variation in the amount of meat consumed could be attributed to income, age, household size, sex, and educational level. Education might have been a strong variable because it might have afforded the respondents opportunities to know meat was a good source of protein. The coefficient of household income was also positively significant. This implied that an increase in family income would translate to an increase in the quantity of meat consumed. This finding was consistent with Akinwumi et al.'s (2011) and Ikpi's (1990) results. They reported that beef and chicken were the most preferred meat in Nigeria, compared with pork. The variation could be due to availability, cost, sensory value, income level, religion and socio-cultural factors. Studies (e.g. Odo et al., 2004; Teklebrhan, 2012) have shown pork consumption was negatively influenced by religion and socio-cultural taboos.

CONCLUSION

The present study have shown that meat consumption patterns of the people studied showed that beef was the most preferred meat, followed by chicken and turkey. The proportion of household's total expenditure that went into meat consumption 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 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. Hence, in livestock farming the various determinants such as preferences, choices, sentiments that may influence the choices of meat consumers' should be considered.

This study was 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. Finally, factors like prices of meat product, price of substitutes, taste, and religious belief were some of the factors not capture in the model. Future studies should investigate the contribution of these factors in meat demand.

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