Profitability analysis of cow meat marketing in Ado metropolis, Ekiti State Nigeria

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Abstract
The marketing of cow meat in Ado - Ekiti metropolis of Ekiti State, Nigeria, was studied to determine its profitability and examine the factors affecting the marketing margin. One hundred and twenty (120) cow meat sellers were randomly selected in five markets purposively as respondents to well-structured and validated questionnaire. Descriptive statistics was used to analyze the socio-economic characteristics of the cow meat marketers; the profit function was used to determine profitability while the factors affecting cow meat marketing margin were determined with regression analysis. The results show that cow meat marketing is dominated by males (81.7%) aged 37 years on the average and 75% with some forms of formal education. Cow meat marketing was profitable in the study area with average profit realized per kg at N140.17. Transportation cost, rentage cost and middlemen profit had significant effects on the marketing margin. It is recommended that government should site more abattoirs close to major cow meat markets to reduce transportation cost and the price to consumers.

Keywords:- Profitability, analysis, cow-meat, marketing.

Introduction

The livestock sub-sector is characterized by the traditional systems of production, processing and marketing thereby limiting the output and consumption level of livestock products in Nigeria. The per-capita meat consumption at approximately 6.4 kilogram (kg) per year compared to China (23 kg), Canada (65 kg) and United States of America (95 kg) reflects the resultant low level of animal protein intake. In order to ensure adequate intake level of animal protein by the teeming population, output has to be substantially increased (Suleiman *et al.*, 2013).

The ability of the average Nigerian family to sustain animal protein consumption has become a sensitive indicator for assessing not only the physical, but also the economic well-being of the nation. The livestock industry is beclouded with limitations ranging from inadequate production inputs to poor management and inefficient marketing. The demand pool generated in the industry through rapid increase in population and per-capita incomes, relative prices and availability of substitutes, greatly expanded taste preference and nutritional education (Okaiyeto, 1999) needs to be matched with equivalent development in management and technical expertise.

The shortage of animal protein is severe in Nigeria with current estimated per-capita supply being less than 35% of recommended daily requirement. The situation is more critical in the southern part of Nigeria where the failure of the livestock sector to expand production means that the current rising demand cannot be met by adequate supplies. For beef to get to the consumer, just as other agricultural products, there must be a well-organized marketing system. Cow meat purchasing and consumption patterns vary substantially among the people. Factors like characteristics of the consumer, characteristics of the products, buying practices and trade practices motivate people in making purchasing decision. Consumer preferences and consumption pattern are the main determinants of the demand for the various quantities and qualities of meat products. Not much has been known about the pricing efficiency/profitability in the marketing of cow meat in Ado-Ekiti metropolis. Moreover, not much research work has been done in this area to determine the cost of marketing of beef and the consequent benefit to the marketers in the study areas.

However, this study aims to;

i. describe the socio-economic characteristics of cow-meat marketers in Ado metropolis;
ii. estimate the profitability of cow-meat marketing in the study area;
iii. analyze the factors affecting marketing margin of cow-meat; and
iv. identify the constraints to cow-meat marketing in the study area.

Methodology

The study was carried out in Ado Ekiti, the capital of Ekiti State. Ado-Ekiti metropolis is characterized by both perfect and imperfect market whereby there are many cow-meat sellers at different geographical spots. A multi-stage sampling procedure was used to select the cow meat marketers. The first stage involved the random selection of five (5) cow meat markets in Ado-Ekiti metropolis. The second stage involved the selection of 24 sellers from each market for a total of one hundred (120) respondents. Data for the study were collected from primary and secondary sources. The primary data were sourced through the aid of well-structured questionnaire and interview schedule. The secondary sources of data were textbooks, journals, reports and the internet. The data collected were analyzed using descriptive and inferential statistics such as frequency counts, percentages and regression. The profit function was used to estimate the profitability of cow meat marketing.

The profit function is given by

$$\pi = TR - TC \text{ .... } (1)$$

where:

π = Profit function

TR = Total revenue

TC = Total cost (which includes cost of transportation, packaging, market charges, storage and middlemen profits)

Multiple regression analysis was used to determine the factors affecting marketing margin of cow meat marketers.

The implicit and explicit postulations of factors affecting cow meat marketing model are shown by:

$$Y = F(X_1, X_2, X_3, X_4, X_5, X_6) \text{ .... } (2)$$

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + \mu \text{ .... } (3)$$

where: Y = Magnitude of the marketing margin of beef ($P_2 - P_1$)

P_2 = Seller's Price, P_1 = Buyer's Price

b_0 = Intercept

X_1 = Transport cost (Naira)

X_2 = Packaging cost (Naira)

X_3 = Marketing charges (Naira)

X_4 = Storage cost (Naira)

X_5 = Middle-men profit (Naira)

X_6 = Rentage cost (Naira)

μ =Stochastic error term

Results and Discussion

Socio-economic characteristics of cow meat marketers

Table 1 shows that majority of the respondents were male (81.7%) and within the age group of 30 and 45 years (83.33%) while 10.83 percent and 5.84 percent were below 30 and above 45 years of age respectively. The mean age of the respondent at 37.10 years implies that respondents would still have the energy for active involvement and smooth operation required in cow meat marketing. This relates to fact that an individual's performance efficiency or productivity declines with increase in age (Oseni, 2011). This makes cow-meat marketing business a male-dominated enterprise as observed by Ebowore and Idoge (2013). Fig. 1 shows that majority (86.70 percent) was married indicating that the family can complement the profit from the business and which is enough to cater for the needs of household members. This finding contradicts Ebowore and Idoge (2013) who obtained a higher percentage of respondents in cow meat marketing being not married in Oshimili Local Government Area, Delta State. The household size of 35.8 percent of the respondents was 1-3, 4 in the family 34.2 percent of the respondents and 5-6 in 30 percent of the respondents. The mean household size was 4 such that cow meat marketers had manageable family sizes which may assure extra helping hands in the operations.

Table 1: Distribution of cow meat marketers by their socio-economic characteristics

Variables	Freq.	Percent.
Age (years)		
Less than 30	13	10.83
30--35	40	33.33
36--40	36	30.00
41--45	24	20.00
Above 45	7	5.84
Gender (dummy)		
Female	22	18.30
Male	98	81.70
Household size		
1	3	2.50
2	16	13.30
3	24	20.00
4	41	34.20
5	18	15.00
6	18	15.00
Educational level		
No formal education	30	25.0
Primary education	71	59.20
Secondary education	19	15.80
Marketing experience (years)		
Below 6	3	2.50
6 – 10	46	38.30
11 – 15	38	31.60
16 – 20	17	14.20
Above 20	16	13.30
Marketing form		
Retailers	68	56.70
Wholesalers	16	13.30
Both	36	30.00

Source: Field survey, 2016.

Most of the respondents had formal education as 59.2 and 15.8% finished in primary and secondary schools. This desirable development will increase awareness and adoption of new marketing strategies and enable them to take business decisions that can enhance market performance. Majority of the respondents (69.9%) had business experience between 6 and 15 years, 25% had between 1 and 5 years of experience while 14.20 and 13,3 percent of the marketers had 16-20 and >20 years of business experience. The mean year of experience in cow meat business at 14.4 years is important as it plays very key roles in every human endeavor and the basis of success and progress even as the likely outcomes of the lack are low production and income for farmers (Mafimisebi *et al.*, 2012). Two types of intermediaries were encountered in cow meat marketing; retailers who sell small quantities and wholesalers which accounted for 56.70 and 13.3% while 30% sells on the basis of both. This result showing majority of the respondents as retailers is similar to the findings of Ebowore and Idoge (2013) that retail marketing of beef is the commonest form of beef marketing in Delta State.

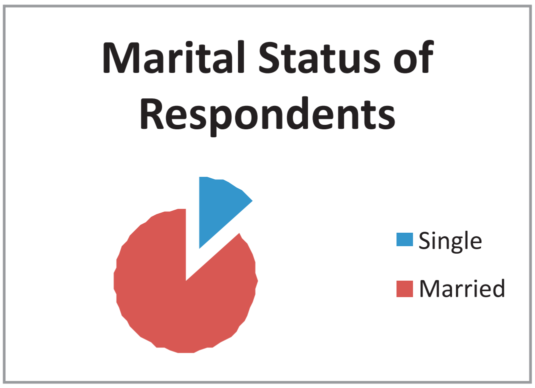

Fig. 1: Pie chart showing the marital status of respondents

Table 2: Gross Margin Analysis

Variable (Kg)	Value ₦ (per Kg)
Cost of Purchase (farm gate price)	538.83
Transportation cost	15.00
Packaging cost	10.50
Market charges	25.00
Storage cost	18.00
Middlemen profit	155.00
Total Va riable Cost	762.33
Total Revenue	902.50

Source: Field survey, 2016.

Profitability of cow meat marketers

Table 2 shows that the beef marketers incurred total variable costs of N762.33 which include cost of purchase, transportation cost, packaging, storage and middle men profit and generated revenue of N902.50 per kg of cow meat. Since the items of cow meat marketing are variable (i.e. negligible fixed cost), gross margin was estimated to be the profit. A profit margin of N140.17 per kg of beef was obtained showing that cow meat marketing is profitable in the study area.

Factors Influencing marketing margin of cow meat

Table 3 shows the regression analysis of factors affecting marketing margin of cow meat. The adjusted R^2 was 0.969 for the independent variables while the F-cal (620.781) was significant suggested that the model is a good fit. Rentage cost and middlemen profit were significant at 5% and 1% respectively. This implies that these independent variables have significant effect on the marketing margin. The independent variables which exhibited positive coefficient values are packaging cost, storage cost and market charges such that the increase in their costs will increase the marketing margin of marketers. The negative coefficient variables of transport cost, rentage cost and middlemen profit whose increase in value will reduce the marketing margin of cow meat

The result in Table 4 gives the following equation: Y= 28.954 - 0.003X1 + 0.054X2 – 0.010X3 + 0.001X4 - 0.947X5 - 0.000X6

The negative coefficient of transportation cost means that it has a negative impact on the marketing margin. The positive coefficient for packaging (0.054) implies that when 1 kg of beef is well packaged, it attracts higher prices thereby increasing the marketing margin. The market charges and storage costs have positive coefficients (0.000) and (0.001) respectively such that whenever market charges and storage costs are high, the marketing margin also rises. The middlemen profit and transport costs have negative coefficients of -0.947 and -0.003 respectively. This means that an increase in middlemen profit and transport cost will reduce the marketing margin because what should have accrued to the marketers will be paid to the middlemen and this will be passed on to the consumers. The outcome is that the customer would pay more for 1 kg of cow meat.

Table 3a: Linear regression of the factors influencing marketing margin of cow meat marketers

Model		Unstand. Coeff.		Stand. Coeff.	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	28.954	8.434		3.433	.001
	Transport cost	-.003	.003	-.119	-1.210	.229
	Packaging cost	.054	.092	.065	.585	.560
	Rentage cost	-.010	.005	-.060	-1.874	.064
	Storage cost	.001	.001	.041	1.390	.167
	Middlemen profit	-.947	.019	-.958	-49.671	.000
	Market charges	.000	.001	.011	.676	.501

a. Dependent Variable: market margin of beef Unstand Coeff. = Unstandardized Coefficients Stand. Coeff. = Standardized Coefficients.

Table 3b: ANOVA [b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1666769.964	6	277794.994	620.781	.000[a]
	Residual	50566.702	113	447.493		
	Total	1717336.667	119			

a. Predictors: (Constant), market charges, storage cost, middlemen profit, rentage cost, transport cost, packaging cost.

b. Dependent Variable: market margin of cow meat

Constraints faced in cow meat marketing

The problems militating against the effective and efficient marketing of cow meat in the study area are shown in Table 4. High transportation cost was the most serious constraint (74.17%) as its rising value will increase the marketing margin per kg of cow meat on the sellers' side but the higher price per kg of cow meat can make the consumers to purchase lower quantities of cow meat. The risk of spoilage as a problem of beef marketing (66.67%) becomes more critical for unsold stock due to erratic power supply. Inadequate storage facilities were also identified as a limitation to effective cow meat marketing. The cow meat marketers cannot afford appropriate storage facilities and this is compounded by unstable power supply and the recent hike in electricity tariffs. More than half (53.33%) of the marketers lamented about the recent hike in market charges associated with the revenue drive of the government in Ekiti State. Also, half of the respondents opined that there were no credit facilities available to boost cow meat business. Other constraints include the existence of numerous sellers indicating the homogeneity state characterized by a perfect market. This made 43.33% to complain about some sellers charge or agree to sell at favorable prices due to familiarity or closeness of customers.

Table 4: Constraints faced by cow meat marketers

Constraints	Frequency (%)
Transportation cost	89 (74.17)
Risk of spoilage	80 (66.67)
Inadequate storage facilities	72 (60.00)
Market charges	64 (53.33)
Inadequate credit facilities	60 (50.00)
Price discrimination	52 (43.33)
Too many sellers	45 (37.50)

Source: Field survey, 2016. *Multiple Responses

Conclusion

This study examined the profitability of cow meat marketing in Ado-Ekiti metropolis, Ekiti State, Nigeria. It looked at the socio-economic characteristics of 120 cow-meat marketers, cost and returns, marketing channel, marketing margin and the constraints to cow-meat marketing. Cow meat marketing is male-dominated and the mean age of the respondents was 37.10 years who were mostly literates. The profit margin of N140.17 per kg of cow meat showed that cow meat marketing is profitable in the study area. Rentage cost and middlemen profit had the most significant effects on the marketing margin. The constraints to cow meat marketing rated high transportation cost as the most serious as it will increase the marketing margin of a kilogram of cow meat on the sellers' side but as the price/kg increases, the consumers may choose to purchase lower quantity of cow meat.

Recommendations

From this study, some recommendations emerge:

- The government should ease transportation and storage facilities
- problems, as to facilitate quality of the product which attracts buyers.
- The cow meat marketing infrastructure should be developed and modernized to include transportation, appropriate storage facilities and constant power supply.
- Government should site more abattoirs close to major beef markets to reduce transportation cost and consumer price.
- Producers and marketers alike should be encouraged to form co-operatives for the purpose of helping members in thrift and credit access.

Acknowledgement
The effort of Mr. Bobade Blessing during the data collection process for this study is hereby appreciated.

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