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Biological SciencesJournal homepage: www.Sjournals.com**Original article****Structure and conduct of beef marketing in Sokoto metropolis, Sokoto state, Nigeria****N. Garba^{a,*}, M.A. Saulawa^b, S. Ukashatu^c, U.B. Kyiogwom^a, A.L. Ala^a**^aCollege of Agriculture, Hassan Usman Katsina Polytechnic, Katsina State, Nigeria.^bDepartment of Veterinary Public Health and Preventive Medicine, Usmanu Danfodiyo University Sokoto, Nigeria.^cDepartment of Agricultural Economics and Extension, Usmanu Danfodiyo University Sokoto, Nigeria.

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ABSTRACT

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This research was conducted in Sokoto metropolis to examine the structure and conduct of beef marketing. Data were collected using three sets of structured questionnaires, one each for the producers, retailers and consumers. Ten respondents were randomly selected from each category making 30 respondents in each Local Government. This gives a total of 90 respondents as the sample size for the study. The data generated were analyzed using descriptive statistics (frequencies and percentages), measures of marketing efficiency, Gini coefficient and budgeting. A Gini coefficient of 0.24 showed that marketing is perfectly competitive in the study area. Marketing profitability of #275,361 showed that beef marketing is profitable in the study area. Marketing is also efficient in the study area, with a value of 6.72. Breaking or subsidizing the price is the behavior adopted by the respondents in order to get more buyers. The result showed that, effort should be made to improving beef marketing in the study area. It has been recommended that, government and the private sector should be part of beef marketing in the study area and an ultra modern abattoir should be built.

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1. Introduction

Beef is the culinary name for meat from bovines, especially domestic cattle. Beef can be harvested from cows, bulls, heifers or steers. It is one of the principal meats used in the cuisine of the Middle East (including Pakistan and Afghanistan), Australia, Argentina, Brazil, Europe and North America, and is also important in Africa, parts of East Asia, and Southeast Asia. Beef is considered a taboo food in some cultures, especially in Indian culture, and hence is eschewed by Hindus and Jains; however, Hinduism's scriptures indicate a recorded history of beef consumption, with the taboo arising at a later period due to the ascendancy of the cow in terms of importance to the farming communities of the time.

Beef is the third most widely consumed meat in the world, accounting for about 25% of meat production worldwide, after pork and poultry at 38% and 30% respectively (Raloff,2003). In absolute numbers, the United States, Brazil, and the People's Republic of China are the world's three largest consumers of beef. On a per capita basis in 2009, Argentines ate the most beef at 64.6 kg per person; people in the US ate 40.2 kg, while those in the EU ate 16.9 kg (Livestock and Poultry, 2009).

According to Olukosi *et al.* (2007), market structure tends to consider whether the number of firms producing a product is large or whether the firms are of equal sizes or dominated by a small group. It is also concerned with whether entry for new firms is easy or difficult and whether the purchases for the products are in a competitive state or not. It equally relates to the degree of market knowledge that is available to the participants. Structure is the set up of market in terms of the degree of concentration (number and size of buyers and sellers), integration, product differentiation etc. It also includes parameters such as distribution of buyers and sellers, ease of new firm into the industry and availability of market information. Conduct on the other hand refers to the strategies that firms pursue with regard to price, product and promotions and the relationships among firms. Marketing can be defined as the sum total of all business activities involved in the movement of commodities from production to consumption. While Agricultural marketing is the selling of goods and services by the farmers and ranchers. It includes various functions *viz.*, assembling, transportation, storing, buying, selling, standardization, grading, processing, sales promotion and so on (Reddy *et al.*, 2004). A series of factors militate against the effectiveness of marketing activities in the study area. These factors are associated with marketing channels, storage transportation and lack of assistance from the government. This reasons encouraged the researchers to conduct a research of this kind with a view to identifying how marketing is going on in the study area and the problems associated with it. The objective of the study is to determine the structure and conduct of beef marketing in Sokoto metropolis.

2. Materials and methods

A structured questionnaire was used to generate data from the respondents. Several questions were asked, some of the questions were:

- a. What are the socio-economic characteristics of the respondents?
- b. How many kilograms of beef do they sell in a day?
- c. Where do they sell their meat?
- d. Do they pay tax?
- e. What do they do to attract customers?
- f. How do they transport their meat after slaughter?
- g. What is the cost of purchasing a live animal?
- h. How much do they sell it after slaughter?
- i. What problems do you encounter in the business?

2.1. Study area

The study was conducted in Sokoto metropolis, Sokoto State. The area is located in the north-western part of Nigeria; it has a population of 607,379 people (census, 2006). It lies between longitudes $4^{\circ} 8'E$ and $6^{\circ} 54'E$ and latitude $12^{\circ} 0'N$ and $13^{\circ} 56'N$ (Mamman *et al.*, 2000). Farming and crop production is the major occupations of the people living in the study area major crops grown include millet, sorghum, groundnut, cowpea and tobacco. Livestock reared include cattle, sheep, goat, donkey, camel, horses and poultry. It is characterized by 3-4 months annual rainfall (June-September) and 7-8 months dry season (October-May).

2.2. Sampling techniques and sample size

A simple random sampling technique was used to select three places from Sokoto metropolis namely Sokoto north, Sokoto south and Wammakko Local Government Areas. Ten respondents were randomly selected from the producers, retailers and consumers. Therefore a sample of 90 respondents was used to generate the survey data.

2.3. Data analysis

Analytical technique: Descriptive statistics such as frequencies and percentages were used to analyze marketing conduct of the respondents. Gini coefficient was used to examine the market concentration for beef marketers in the study area. Mathematically, it is represented by equation (1) i.e. $G.C = 1 - \sum XY$

Where:

G.C = Gini coefficient

X = the percentage of beef sellers

Y = the cumulative percentage of their sales.

Gross margin analysis was employed to determine the profitability of beef marketing in the study area. The gross margin was represented by equation (2) i.e. $GM = GI - TVC$

Where:

G.M = Gross margin

G.I = Gross Sales/Income

TVC = Total variable cost

3. Results and discussion

Table 1 showed that more than 50% of the respondents involved in beef marketing are producing small quantity of beef in the market. That is about 57% slaughter only one cattle and 90% slaughter 1-2 cattle and 10% slaughter 3-4 cattle.

Table 1

Beef sold (producers and retailers), beef bought (consumers) and practiced used to attract customers (Field Survey, 2006).

Parameter	Frequency	Percentage
No. of cattle		
1 cattle	17	56.67
2 Cattle	10	33.33
3 cattle	2	6.67
4 and above	1	3.33
Total	30	100
Quantity sold		
Quantity of animals	1	3.3
Half of animals	6	20
Three quarters-one	10	46.7
Whole animal	-	-
Two or more	9	30
Total	30	100
quantity		
Kilogram	29	96.7
Some parts	1	3.3
Total	30	100
Practice		
Improving quality	11	18.3
Breaking price (subsidy)	41	68.3
Giving the meat on credit	8	13.4
Total	60	100

46% of the respondents sell three quarter to one cattle per day and 30% sell 1-2 cattle per day. 90% of the consumers purchase their meat in kilogram form. This indicated that majority of the consumers buy their beef in small quantity. On the practiced used to attract customers by the sellers, 68% of the sellers used price breaking as the way of attracting customers. Table 2 showed the nature of competition in the study area, the Gini coefficient of 0.24 obtained implied that marketing is carried out in a competitive manner. Table 3 showed that 47% of the respondents purchase their cattle at a price that ranges between #7000- #25000. On the cost of transporting beef, 76% of the respondents pay #50-#100 for a quarter of beef. 50% of the respondents sell their beef at rate between #15500-#40000. Table 4 showed the distribution of respondent based on cost incurred in marketing and the gross receipt. A value of #275,361 obtained showed that beef marketing is profitable in the study area. Table 5 showed the distribution of retailers and producer based on the measures of marketing efficiency. Marketing Efficiency was calculated, a ratio of 6.72 obtained indicated that beef marketing is efficient in the study area. Table 6 showed that 90% of the respondents have problems of storage and 10% have transportation problem.

Table 2
Competitive nature of the market.

Respondents	REVENUE (₦)	X	Y	XY
Producers	220	0.59	0.59	0.35
Retailers	1500.5	0.41	1.0	0.14
Total	3700.5	1.0	1.59	0.76

Source: Field Survey, 2006.

Table 3
Purchase price of animal, transportation cost and sell price of animal.

Parameter	Frequency	Percentage
Purchase price		
N7000 – N25000	14	46.7
N25500 – N35000	11	36.7
N35500 – N45000	2	6.6
N4550 – N55000	3	10
Total	30	100
Purchase price		
N100	23	76.7
N150	6	20
N200	1	3.3
Total	30	100
Purchase price		
N7000 – N1000	3	10
N10500 – N15000	5	16.7
N15500 – N40000	15	50
N40500 – N60000	7	23.3
Total	30	100

Table 4
Distribution of respondents based on cost incurred and gross receipt.

Purchase price	Cost (₦)	Gross receipt (₦)
Producer	948,404	1,061,750
Retailers	786,235	948,250
Total	1,734,639	2,010,000

Source: Field Survey, 2006

Table 5

Distribution of respondents' base on the measures of marketing efficiency.

Respondents	value of output	value of input
Producer	2200	350
Retailer	1500	200
Total	3700	550

Source: Field Survey, 2006

Table 6

Distribution of respondents based on marketing problems.

Problems	Frequency	Percentage
Lack of storage facilities	27	90
Transportation problem	3	10
Total	30	100

Source: Field Survey, 2006

4. Conclusion

The result showed that beef marketing is profitable and efficient in the study area. There is also no barrier to entry in beef marketing in the study area. The study also showed that the respondents faced the problems of storage and lack of government assistance in beef marketing.

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