

Analysis of market structure and performance of cattle marketing in Southwest Nigeria

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Target Audience: *Policy makers, Marketers, Investors, Extension officers*

Abstract

*The protein intake of Nigerians is far below the global average, despite the large population of livestock in Nigeria. Attributable to this scenario is the regionalized suitability of the livestock to the humid areas, thus leading to a situation in which there is a multiplicity of intermediaries and stakeholders in the marketing chain. The study investigated the structure of cattle markets in Lagos State with primary data collected using structured questionnaires. Multi-stage sampling technique was deployed to sample 169 respondents. Herfindahl-Hirschman Index (HHI) examined the nature of competition, while **Shepherd-Furtriel Model** measured market efficiency. Weak competitiveness was observed for the cattle markets with HHI values of 0.34 and 0.40. The marketing efficiency indices ranged from 0.02 to 0.43 indicating inefficient system. Measures to eliminate impediments to new entrants to the markets should be introduced while market supervisory government agencies should intensify oversight functions to minimize collusion practices among the associations. Exposure of the marketers to educational activities such as seminars to enhance efficient marketing be made available.*

Keywords: *Market Structure; Market Performance; Cattle Marketing; Lagos State.*

Description of Problem

The economic development of a nation has been linked to the level of animal protein consumption, which implies excellent physical and health condition of citizens in nations consuming substantial amounts of good quality animal protein (5). The rapid increase in human population has resulted in an increase in the demand for animal protein as human being requires good quality protein for growth, development and maintenance of metabolic activities (4). The protein intake of Nigerians and most countries in sub-Saharan Africa is far below the global average (6). Animal agriculture is an indispensable prerequisite towards the sustainability of human development because of food provision and employment generation, among others (1).

Ruminants play very important role in the Nigerian agriculture. (2) observed that cattle contribute over 50% of the national meat supply while the remaining 40-50% is contributed by other classes of livestock and other domesticated animals.

Idachaba (6) posited that it is not sufficient for policy makers to concentrate on solving production problems without reference to their marketing problems because actual production may be adequate, marketable and marketed surplus may be inadequate and unreliable. Cattle is a commodity supplied from the northern part of Nigeria to the areas of high demand in the south. This situation warrants a survey of the marketing system. For instance, the challenge posed by market actors has

increased transaction costs and thus, upward trends in the final retail price of these animals and their products (7). The effect of the activities of these marketers is capable of making the pricing of the animals and their products inaccessible to the poor through inefficient system (8). Contemporary information on market efficiency in the study area is, however inadequate. Thus, the basis for identifying the inadequacies in terms of how efficient the system of cattle marketing in the study area is performed, so that feasible policy recommendations can be provided. The objective of the study was to examine cattle market structure and performance in Lagos State.

Materials and Method

The study was conducted in Lagos State, in the South-west Nigeria. Primary

data was collected through structured questionnaire to obtain pertinent information. A multi-stage sampling procedure was used for the study. At the first stage, the state was purposively selected given the high traffic of cattle trading. The next stage involved the selection of five Local Governments that were noted for cattle business in the State. The third stage involved selection of one market from each local government based on market size and high concentration of cattle marketing activities. In the final stage, 30 per cent of the respondents were proportionally selected in each market using the registers of members kept by leaders of market associations. Finally, 169 cattle marketers were sampled for the study.

Table 1: Sample size and sampling of the respondents in the Study Area

Name of the market	Total Number of registered members	30% of registered members	Marketers
Sabo	143	43	43
Oko-oba	207	62	62
Alaba Rago	78	23	24
Imota	68	20	20
Igan	68	20	20
Total	564	169	169

Analytical Techniques

Nature of concentration in cattle markets

Herfindahl-Hirschman Index (HHI) was used to measure the nature of market concentration following (9).

$$HHI = \sum_{i=1}^n (MS)^2 \text{-----} (1)$$

Where:

HHI = Herfindahl-Hirschman Index

MS = Market share

n = Number of observations

The market share (MS), is the proportion of the sales of a seller relative to others in the market:

$$MS_t = \frac{Qt}{\sum_i^t Qt} \text{-----} (2)$$

Where:

Qt= Quantity of cattle handled by seller *i*

$\sum Qt$ = is the sum of cattle handled by all the sellers in the market (*i-t*).

According to (10) and (11); any HHI that is less than 0.1 considers the market as unconcentrated, indicating a competitive market condition. Values ranging from 0.1 to 0.18 represent moderate concentration and HHI of more than 0.18 indicates high market concentration. The higher the HHI, the more the market is tending

towards monopoly by the cross section of the market.

If $ME < 1$, marketing system is not efficient

Market Efficiency Index (MEI)

Marketing efficiency is the ratio of marketing cost to marketing margin. A higher value of the ratio indicates relative efficiency in the marketing system and lower value denotes relative inefficiency in the system of marketing. The form is:

Shepherd-Futrel method of analyzing marketing efficiency was deployed for use: (12); (13); and (14):

$$ME = \left(\frac{V}{I}\right) - 1 \quad \text{-----} \quad (3)$$

Where:

ME = Index of Marketing Efficiency

V = Value of goods sold (consumer price)

I = Total Marketing Cost

If $ME = 1$, marketing system is efficient

If $ME > 1$, marketing system is highly efficient

Results and Discussion

Analysis of Market concentration

The results of the Herfindahl-Hirschman Indices (HHI) for cattle markets are presented in Table 2. The markets had HHI values ranging from 0.1642 (16.42%) and 0.5256 (52.6%). This reflects the existence of cattle market participants exhibiting different structures of concentration, either as slightly perfectly competitive or oligopolistic inclination. This implies that in some markets a large proportion of cattle trading are controlled by few traders who could afford the huge capital demands of the business. (16) reported highly concentrated markets cattle in Nigeria with few traders controlling most economic activity of the business. This finding tallied with that of (17), who reported imperfect small ruminants' markets.

Table 2: Estimation of the Herfindahl - Hirschman Index for Cattle Markets

Markets	HHI	Remarks
Sabo	0.2496	Perfectly competitive
Oko-Oba	0.2258	Perfectly competitive
Alaba	0.5256	Strong monopolistic market
Imota	0.4425	Weak monopolistic market
Igan	0.1642	Perfectly competitive

Legend: >50% == strong monopolistic market; 33-50% = weak monopolistic market, < 33% = perfectly competitive.

Cattle Marketing Efficiency

The findings in Table 3 indicated that the ME for cattle across the markets studied ranged from 0.02 and 0.43 indicating the evidence inefficient system of cattle

marketing. The findings were at variance with that of (18) who reported that sheep marketing in Gombe metropolis was efficient.

Table 3: Estimation of the marketing efficiency per head of cattle in study area

Markets	Consumer Price (₦)	Marketing Cost (₦)	Purchase Price (₦)	Total Marketing Cost (₦)	Marketing Efficiency
1	193,313.95	16,796.79	155,372.10	172,168.89	0.12
2	271,053.33	44,030.58	194,919.35	238,949.93	0.13
3	309,053.33	81,027.50	221,458.33	302,485.83	0.02
4	240,875.00	36,393.70	182,000.00	218,393.70	0.10
5	291,475.00	62,322.30	201,500.00	263,822.30	0.43

Source: Computed from survey data, 2020

Conclusion and Applications

1. Weak competitiveness was observed for the cattle markets with HHI value range of 0.1642 to 0.5256.
2. The marketing efficiency indices ranged from 0.02 to 0.43 indicating inefficient system.
3. Measures that will eliminate impediments in some of the markets where inefficiency exist in the state to the entrance of new participants should be enshrined, such as single digit interest rate loans with a view to motivating willing entrepreneurs' entry to the venture.

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