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Fundamentals of Cattle Marketing in Southwest, Nigeria: Analyzing Market Intermediaries, Price Formation and Yield Performance

Mafimisebi T. E., Bobola O.M. & Mafimisebi, O.E.

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[1]Mafimisebi T. E., [1]Bobola O.M. & [3]Mafimisebi, O.E.

Department of Agricultural & Resource Economics
The Federal University of Technology
P.M.B. 704, Akure, Ondo State, Nigeria
[2]Department of Agricultural Technology
Rufus Giwa Polytechnic,
P.M.B. 1019, Owo, Ondo State, Nigeria
E-mail of Senior author: **temafis@yahoo.com**
E-mail co-author: **adubabs01@yahoo.com**

Abstract

An understanding of how cattle markets work is a desideratum for sustainable commercialization of cattle production aimed at increasing accessibility to and affordability of cattle meat. This study examined the fundamentals of cattle marketing in Southwest, Nigeria using primary data collected from 120 respondents selected through multi-stage sampling technique. Data analytical tools included descriptive statistics, budgeting and price formation strategy models. Empirical results showed the market is dominated by males (87.5%), market intermediaries less than 50 years (64.0%) who had formal education (68.0%). The three most important intermediaries were dealers, retailers and brokers. Transportation accounted for 74.3% and 46.2% of Total Variable Cost incurred by dealers and retailers. Cattle marketing was profitable with gross margin per head of cattle sold being ₦ 6548, ₦ 4,655 and ₦ 2,342.50, respectively, for dealers, retailers and brokers while profitability ratio was 1.09, 1.07 and 1.03, respectively. The factors considered important in cattle price discovery included body condition, payment mode and type of buyers while breed, seller category and colour were the least important. Constraints to cattle marketers included insufficient capital, poor roads and insecurity identified by 85.0%, 83.3% and 79.7% of the respondents, respectively. The study concluded that the cattle market is well organized and that cattle marketing is a fairly profitable venture and potential employment source. Strengthening marketing institutions through capacity building for stakeholders, rail system resuscitation and fixing of bad roads are recommended as steps necessary to enhance the commercialization and performance of cattle marketing.

Key words: Cattle markets, marketing margin, intermediaries, price discovery, transaction costs, Nigeria

INTRODUCTION

1.1 Background Information

Nigeria is one of the leading countries in cattle production in sub-Saharan Africa (Ikpi, 1990). In 2008, the country had over 14.73 million cattle consisting of 1.47 million milking cows and 13.26 million beef cattle. Less than 1% of this population is managed commercially while the balance is managed traditionally (Tibi and Aphunu, 2010). Under this system, there is the use of indigenous methods in all aspect of cattle production including health management (Abubakar and Garba, 2004; Mafimisebi *et al*., 2012). This tilt towards traditional management will have grave implications for commercialization of the production of cattle and cattle products and their prices. Cattle singly contribute about 12.7% of the agricultural Gross Domestic Product (GDP) in Nigeria (Central Bank of Nigeria, 1999). The cattle industry provides a means of livelihood for a significant proportion of the livestock rearing (pastoral) households and participants in the cattle value chain in the sub-humid and semi-arid ecological zones of Nigeria (Adegeye, 1995; Okunmadewa, 1999; FAO, 2006). Although, there are many sources of animal protein in Nigeria, recent studies have shown that cattle and cattle products are the predominant and the most commonly consumed animal protein sources. Thus, cattle are a highly valued livestock in Nigeria (Ikpi, 1990; Tewe, 1997; Tibi and Aphunu, 2010) where they are kept for beef, hide, milk or for traction (Ikpi, 1990; Tukur and Maigandi, 1999). To some producers, cattle serve as a status symbol (Tibi and Aphunu, 2010). From the foregoing, it is obvious why cattle production and marketing are notable employment and income-generating livelihood activities for many Nigerians (Mafimisebi and Okunmadewa, 2006). Cattle and beef trade provides the largest market in Nigeria with millions of Nigerians making their livelihood from various beef-related enterprises (Umar *et al*., 2008).

Consequently, the outcome of enhanced production and marketing of cattle and its products carry the potentials to better the income and nutritional status of households and positively impinge their living standard. Efficient marketing plays an important requirement in the attempt to achieve wider accessibility and affordability of any product to consumers (Mafimisebi, 2011). This is obvious from the long established maxim that production and marketing constitute a continuum. Thus, lack of development in one will necessarily obstruct development in the other (Olayemi, 1973; Olayemi, 1994; Seperich *et al*., 2002)

Marketing encompasses all business activities associated with the transfer of a product from the producers to the consumers (Kohls and Uhls, 2002). In the case of cattle, it is concerned with the movement of cattle from the pastoralists in the production locations in northern Nigeria

to the final consumers who are resident in southern Nigeria (Omoruyi *et al.*, 2000). The cattle marketing process makes possible the delivery of cattle to the buyers in the form, place and time needed. This process of bringing the cattle from where they are surpluses (production/origin areas) to where they are shortages (consumption/sink markets), a process known as arbitraging, needs to be fully understood to enhance the efficient working of cattle markets, which is vitally important in achieving sustainable and profitable agricultural commercialization in the livestock sub-sector in Nigeria (Mafimisebi, 2011, Mafimisebi, 2012). Marketing is an economic activity which stimulates further production and if efficiently done, both the producer and consumer get satisfied in the sense that the former gets a sufficiently remunerative price for the product to continue to produce while the latter gets it at an affordable price that stimulates continued consumption (Umar, 2005; Mafimisebi, 2012).

According to the National Livestock Project Division (NLPD, 1992), the supply of cattle and its products has witnessed a decline while the demand has been increasing with the result being a shortfall in the supply. The high cost of marketing cattle is often the commonly cited culprit for this situation. Owing to the considerable spatial separation of production area from consumption area and other ancillary factors, there is high handling cost especially in relation to cattle transportation (Filani, 2006).

1.2 Problem Statement and Justification of the Study

The fact that cattle is mostly produced in northern Nigeria and mostly consumed in the south (Olayemi, 1974; NLDP, 1992; Adamu *et al*., 2005) has led to a situation in which there is a multiplicity of intermediaries and stakeholders in the marketing chain. The challenge posed by this has been increased transaction costs and thus, upward trending final retail price of cattle and its products. The effect of the activities of these intermediaries and stakeholders is capable of making cattle and its products inaccessible to the poor who feed mostly on diets deficient in animal proteins (Okunmadewa and Mafimisebi, 2006; Mafimisebi, 2011). There is every reason to worry about this situation in Nigeria because the level of animal protein consumption is rated very low compared with recommended levels (Mafimisebi, 2011). More worrisome is the fact that the country is said to be in a critical and deteriorating national meat supply position in which beef alone accounts for about 70% of total national meat supply (Omoruyi *et al.*, 2000; Umar, 2005; Tibi and Aphunu, 2010). The domestic production and documented importation of cattle are, together, not enough to meet more than 60% of the actual demand (NLDP, 1992).

Transportation of cattle from the north to the south in Nigeria presents a daunting problem because it is both a costly and risky business. Cattle are kept standing and in some cases, lying in the vehicles throughout the long journey of between 2-3 days. Most rural roads are seasonal and inoperable during the rainy season and some inter-state roads are also in bad shape. Therefore, trucks and vehicles are prone to accidents while cattle and freight insurance is still unpopular among the generally illiterate cattle rearers, middlemen and transporters. The possibility also exists of transporters and traders being robbed in transit (Filani, 2006).

From time immemorial, the traditional system of cattle production of which the Fulanis are the key actors, remains and will, for a long time to come, be the main source of cattle (Tukur and Maigandi, 1999). The main purpose of any rational producer is to make profit but the production goal of the Fulanis goes beyond economic purposes. To them, rearing cattle is an integral part of their culture. Nevertheless, profit constitutes a common yardstick against which the performance of any business enterprise is measured and it is an important factor in stimulating commercialization of any venture (Umar, 2005). The level of profit generated depends, to a greater extent, on how efficiently the market for a commodity works (Mafimisebi, 2012). The performance of a market is influenced by two major factors: the structural characteristics of the market and the competitive behaviour of actors in the marketing chain. Understanding how these factors work independently and together can provide a basis for identifying opportunities to be exploited and constraints that need to be removed for enhancement of commercialization. Gaining insights into how the cattle market works will involve an in-depth assessment of marketing efficiency in terms of the benefits derived by value chain participants and consumers.

Most past studies in Nigeria approached marketing studies using the structure-conduct-performance (S-C-P) model. The S-C-P model has often been criticized for being too abstract and deterministic. We therefore used a synergy of approaches which included S-C-P framework, commodity chain and transaction cost economics approaches to circumvent the individual analytical limitations of each model.

The broad objective of the study is to examine the fundamentals of cattle marketing in Southwest Nigeria. The specific objectives are to:

(i) examine the socio-economic characteristics of intermediaries in cattle marketing;
(ii) identify the cattle marketing channel and conduct of cattle marketers;
(iii) compute costs and returns associated with various intermediaries in the cattle value chain;

(iv) identify the factors that are important in cattle price formation and assess their relative importance in the price formation process and

(iv) identify the major constraints faced by the cattle marketers

RESEARCH METHODOLOGY

2.1 Study Area

The study was conducted in Oyo and Ondo States of Southwest Nigeria. Crop production is the main traditional occupation of the people and smallholder farming characterized by growing of both cash and food crops is predominant. These states have tropical climate with high temperature all year round, heavy rainfall during the rainy season (April to October) and dry wind during the dry season (November to March). These favourable annual variations in weather condition may be the reason why about 75% of the inhabitants take to farming as major livelihood source. Apart from farming, a minority of the inhabitants also engages in other occupations like manufacturing, commerce and civil service.

2.2 Method of Data Collection

Primary data were used in this study. The primary data were collected through direct personal interview with structured questionnaire used to obtain pertinent information on socio-economic characteristics of the respondents, marketing channels, costs and returns, factors considered important in price formation and constraints faced during marketing.

2.3 Sampling, Sampling Techniques and Data Collected

Multi-stage sampling was used in this study. In the first stage, three (3) Local Government Areas of Akinyele and Ibadan North in Oyo State and Akure North in Ondo State, were purposively selected as the locale for this study. This is because Akinyele is the first layover point for cattle transporters in Southwest, Nigeria and is therefore the main recipient of cattle brought from different parts of northern Nigeria to Ibadan Metropolis in Oyo State (Filani, 2006). On the other hand, both Bodija and Sango (in Ibadan North LGA) are the notable cattle kraals in Oyo State in particular and Southwest, Nigeria in general. Bodija and Sango depend on Akinyele LGA for the cattle kept in their Kraals. A reconnaissance survey and discussion with key informants prior the fieldwork revealed that there are different types of intermediaries in cattle marketing based on roles and functions and size of operation. Thus, in the second stage of sampling, stratified random sampling proportionate to size was used after obtaining the estimated number of operators in the different categories after stratification of the population using registers of members kept by leaders of market associations. In the three LGAs selected for data collection, One hundred and twenty (120) respondents were interviewed. This included 60 respondents from Akinyele Market kraal, 15 respondents from each of Bodija and Sango Markets in Ibadan North and 30 from Sango Market in Akure North LGA, respectively. The breakdown of the sample by type of intermediary is presented in Table 1.

Table 1: Distribution of Cattle Market Intermediaries

LGA	Market	Dealers	Retailers	Brokers	Total

Akinyele	Akinyele	20	20	10	60
Ibadan North	Bodija & Sango	15	10	05	30
Akure North	Sango	15	10	05	30
		60	40	20	120

Source: Computed from Field Survey, 2011

2.4. Analytical Tool

The data collected for this study were analyzed using a number of analytical tools. Descriptive statistics was used to present the socio-economic characteristics of the respondents. Aspects of descriptive statistics which were used included mean, percentages and tables. Charts and Flow diagrams were used in presenting the different marketing channels and institutions. Budgeting technique adopted from Akinbuwa (1995) and Folayan *et al*., (2007) was used to determine the profit margin of dealers, retailers and brokers. Profit is the excess of income over expenditure, it is expressed as:

$\Pi = TR - TVC$ …… (1)

Π = Profit, TR =Total Revenue, TVC = Total Variable Cost

The total revenue is the amount of money received from the sales of cattle. The total cost is the cost incurred in purchase and handling of cattle, and it is made up mainly of variable costs (VC). Profitability and efficiency ratios were also computed. Profitability and efficiency ratios were calculated as follows

Profitability ratio is given as $\frac{\pi}{TVC}$ ---------- (2)

Efficiency ratio is given as $\frac{TR}{TVC}$ ---------- (3)

If the value got from Eqn. 2 is greater than 0, marketing is said to be profitable to the group of market intermediaries in question while if the value obtained is less than 0, the group of market intermediaries being studied are sustaining losses.

When the value of the formula shown in Eqn. 3 is greater than 1, it is concluded that the market is operationally efficient while a value of less than 1 is interpreted to mean operational inefficiency.

The factors considered in discovering the prices of cattle by the different stakeholders were identified using a Price Formation Strategy Index (PFSI). In identifying the factors considered by these market intermediaries, a PFSI was computed. The degree of importance of each factor in the PFSI was expressed using a four point scale with the scoring order 4, 3, 2, 1 for very important, important, slightly important and not important, respectively. The formula used to obtain the PFSI score was adopted from past studies (Islam and Kashem, 1999 and Mafimisebi, *et al*; 2012). The formula was modified, slightly from the form in which these authors used it, to obtain the PFSI as follows:

$PFSI = N_1X_4 + N_2X_3 + N_3X_2 + N_4X_1$ …… (4)

Where PFSI = price formation strategy index

N_1 – number of respondents who ranked factor as very important

N_2 – number of respondents who ranked factor as important

N_3 – number of respondents who ranked factor as slightly important

N_4 – number of respondents who ranked factor as not important

The PFSI was used in rank order to reflect the relative position of each of the PFSI in terms of their importance. The relative importance of the PFSI was then obtained for all respondents in the study area.

RESULTS AND DISCUSSION

3.1 Socio-Economic Characteristic of Respondents

3.1.1 Sex of Respondents

The importance of sex of the respondents in a marketing study cannot be over-emphasized as it reveals gender dominance in market participants for a commodity. Table 2 showed the gender distribution of the respondents in the study area.

Table 2: Distribution of Respondents by Sex

Sex	Frequency	Percent
Female	15	12.5
Male	105	87.5
Total	120	100

Source: Computed From Field Survey, 2011

It was discovered that majority (87.5%) of sampled respondents were males while only 12.5% were females. This shows that the sex male dominates cattle marketing activities in the study area. This is however not surprising considering the rigorous work involved in cattle marketing and the resultant stress to market participants. Thus, only active and strong women who are physically strong are able to cope with the operations in cattle marketing will dare to take part in cattle marketing.

3.1.2 Age of the Respondents

In marketing studies, the age of the respondents is an important factor as it may impinge on the level of efficiency of an individual market participant. It is logical to think that an individual's performance efficiency or productivity declines with increasing age (Oseni, 2011).

Table 3: **Distribution of Respondents by Age**

	FREQUENCY	PERCENTAGE	CUMULATIVE PERCENTAGE
≤ 30	10	8.3	-
31-40	25	20.8	29.1
41-50	42	35.0	64.1
51-60	35	29.2	93.3
>60	08	6.7	100
Total	120	100	

Source: Computed From Field Survey, 2011

Results shown in Table 3 revealed that the percentage of respondents within the age bracket of 41-50 years formed the majority of respondents (35.0%). Those within age bracket 51-60 years constituted about 29% while those in the age bracket 31-40 years accounted for about 21.0%. Respondents with age less than 30 years formed about 8.0% of the sample. Those whose ages were over 60 years took about 7.0%. The summary descriptive statistics of age revealed that the average age of the respondents was 47.3 years with a modal age of 45 years. This shows that majority of the respondents are still young and are within the active working age. This is expected to influence their productivity and efficiency in the rigorous and energy sapping cattle marketing business.

3.1.3 Marital Status of the Respondents

The marital status of a person determines the degree of responsibility of that person in the society and the manner in which he or she will judiciously allocate the scarce resources at his or her disposal. Marital status distribution is very important as it helps to have an idea of a marketing participant's devotion to the marketing process and the likely outcome of this on his or her business activities.

Table 4: Distribution of Respondents based on Marital Status

Marital Status Of Respondents	Frequency	Percentage	Cumulative Percentage
Single	5	4.2	4.2
Married	107	89.2	93.4
Divorced	1	0.8	94.2
Widowed	7	5.8	100
	120	100	

Source: Computed From Field Survey, 2011

Data presented in Table 4 revealed that about 89.0% of respondents were married, about 6.0% were widows, about 4.0% were single while close to 1.0 % were divorced. It can be inferred that since a majority of the respondents were married, they have social obligations to cater for at the household level and this may cause them to take their involvement in cattle marketing activities very seriously in order to raise the income required to meet their financial obligations.

3.1.4 Educational Attainment of Respondents

For most peoples and societies, formal education confers a wider range of opportunities and advantages for success in life compared with illiteracy. This is why formal education is seen as capable to liberate a person from ignorance, harmful practices and poverty (Oseni, 2011). It is expected that higher levels of educational attainment by a market stakeholder, may lead to a better understanding of the market dynamics and thus better profit from use of sound business principles and wise business decisions. The level of formal education will for instance have an implication on the extent to which cattle marketers will be pro-active in marketing and receptive to new innovations, which can increase profitability.

Table 5: Distribution of Respondents based on Educational Status

	Frequency	**Percentage**	**Cumulative Percentage**
No Formal Education	38	31.7	31.7
Primary School Education	36	30.0	61.7
Secondary/Modern School Education	30	25.0	86.7
Tertiary Education	16	13.3	100
Total	120	100.0	

Source: Computed from field survey, 2011

Table 5 revealed that about 32.0% of the respondents had no formal education, 30.0% had primary education, 25.0% had secondary education while 25.0% had modern/secondary school education. Altogether, about 68.0% of the respondents had one form of formal education. This is a desirable development as it will enhance the adoption of new innovations (marketing strategies), provide readability consciousness and awareness all of which can enable taking of business decisions that will enhance market performance.

3.1.5 Years of Experience in Cattle Marketing

Experience plays very important role in every human endeavor. It is the basis of success and progress in business (Mafimisebi and Okunmadewa, 2006). In the presence of a lack of experience, the likely outcomes have been shown to be low production and income for farmers (Mafimisebi *et al*., 2012). It is generally believed that the more the experience of a market participant in marketing, the greater the efficiency of that individual. Table 6 shows that about

9.3% of the respondents has marketing experience of 5 years and below, 18.3% had between 6-10 years, about 21.0% had 11-15 years, about 17.0% had 16-20 years while only 3.5% had above 20 years of marketing experience. Thus, about 72.5% of the respondents have cattle marketing experience of more than ten years. From this distribution, one may think that majority (73.0%) of the respondents are expected to have mastered the skills required for success in their cattle marketing business considering their long years of experience (above 10 years).

Table 6: Distributions of Respondents based on Years of Experience

Experience	Frequency	Percentage	Cumulative Percent
≤ 5	11	9.2	9.2
6-10	22	18.3	27.5
11-15	25	20.8	48.3
16-20	20	16.7	65.0
> 20	42	35.0	100.0
	120	100.0	

Source: Computed From Field Survey, 2011

3.1.6 Household Size

It is reasonable to think that the larger the number of household members, the more the social commitments of the working adults who have the responsibility of providing the needs of the household. In households in which the working adult depends on income from marketing activities to meet these social obligations, this can subsequently lead to more devotion to the income-generating activities that they are engaged in. Household size determines the dependency ratio as well as the quantum of family labour available for use in the economic ventures engaged in by the breadwinners. Hence, information on the size of the household can be of great importance as an indicator of the level of market participant's commitment to cattle marketing and household members' contribution to the venture. The results on Table 7 showed that the household size of 5-8 formed the majority (40%) of the total number of the respondents, closely followed by those in the household size of 9-12 (24%) and 13-16 (16.7%). Respondents with household size greater than 21 constituted the lowest proportion of the sample (1.7%). The average household size was 8. The implication of this is that the respondents had manageable family sizes which may assure marketers of extra helping hands in their ventures while not consuming all the income made from cattle trade.

Table 7: Distribution of Respondents by Number of Household Members

Household Size	Frequency	Percentage
1-4	15	12.5
5-8	48	40.5
9-12	29	24.2
13-16	20	16.7
17-20	06	5.0
>21	02	1.7
	120	100.0

Source: Computed From Field Survey, 2011

3.1.7 Source of Capital

Source of credit/loans for financing marketing activities could have a lot of influence on performance of marketing since interest rates usually affect the quantum of money available for investment and the profit realized from marketing. As shown in Table 8, 60.0%, representing majority of the respondents, obtained their capital from personal savings, about 27.0% got theirs from cooperatives, and about 8.0% sourced capital from friends and relations. Only 5.0% of the respondents obtained their capital from banks. This implies that a large percentage (95.0%) of the respondents relied on informal sources of credit/loans for financing cattle marketing. This might be because the marketers were unable to cope with high level of interest rates charged by most commercial banks as well as inability to present an acceptable collateral security required to obtain loan from banks as reported by Mafimisebi *et al*. (2010). Friends, relatives and cooperative societies are easier sources of trading credit/loan because the requirement for collateral is usually waived. Most often than not, what is required is for a well known person to serve as guarantor for the loan/credit seeker.

Table 8: Distribution of Respondents by Capital Acquisition

Source	Frequency	Percent	Cumulative Percent
Personal savings	72	60.0	60.0
Friends and relations	10	8.3	68.3
Banks	06	5.0	73.3
Cooperative	32	26.7	100.0
	120	100.0	

Source: Computed from field survey, 2011

3.2 Marketing Channels and Behavioral Pattern

3.2.1 Intermediaries in Cattle Marketing

From the result of this study, three types of intermediaries were found to be very important in cattle marketing in the study area. These included dealers, retailers and brokers. Each of these categories of intermediaries is fully discussed below.

Cattle Dealers: These are the marketers who source the commodity from the markets in the north, assemble and transport the cattle down to the southern markets. They are mostly young men between the ages of 35-50 years. They command a lot of respect and are very influencial in the cattle market setting because of the considerable amount of capital that is required to operate at this level. They are well travelled and known to pastoralists/local assemblymen and transporters in the northern states of Nigeria. Sometimes, they operate through agents who represent and act on their behalf in other states while they are in one state arranging for cattle purchase and transportation to the south. Dealers are known to buy and transport between 70-145 cattle at each trip to the north. They make about 14 trips per year at an average of one trip per month. In all the markets visited for data collection, it was found that it is one of these dealers that is usually elected chairman of the cattle market association. This tends to confirm the information provided by key informants on the level of influence wielded by the dealers. The movement of cattle from the pastoral producers in the North to the final buyers in the South is shown in Figure 1.

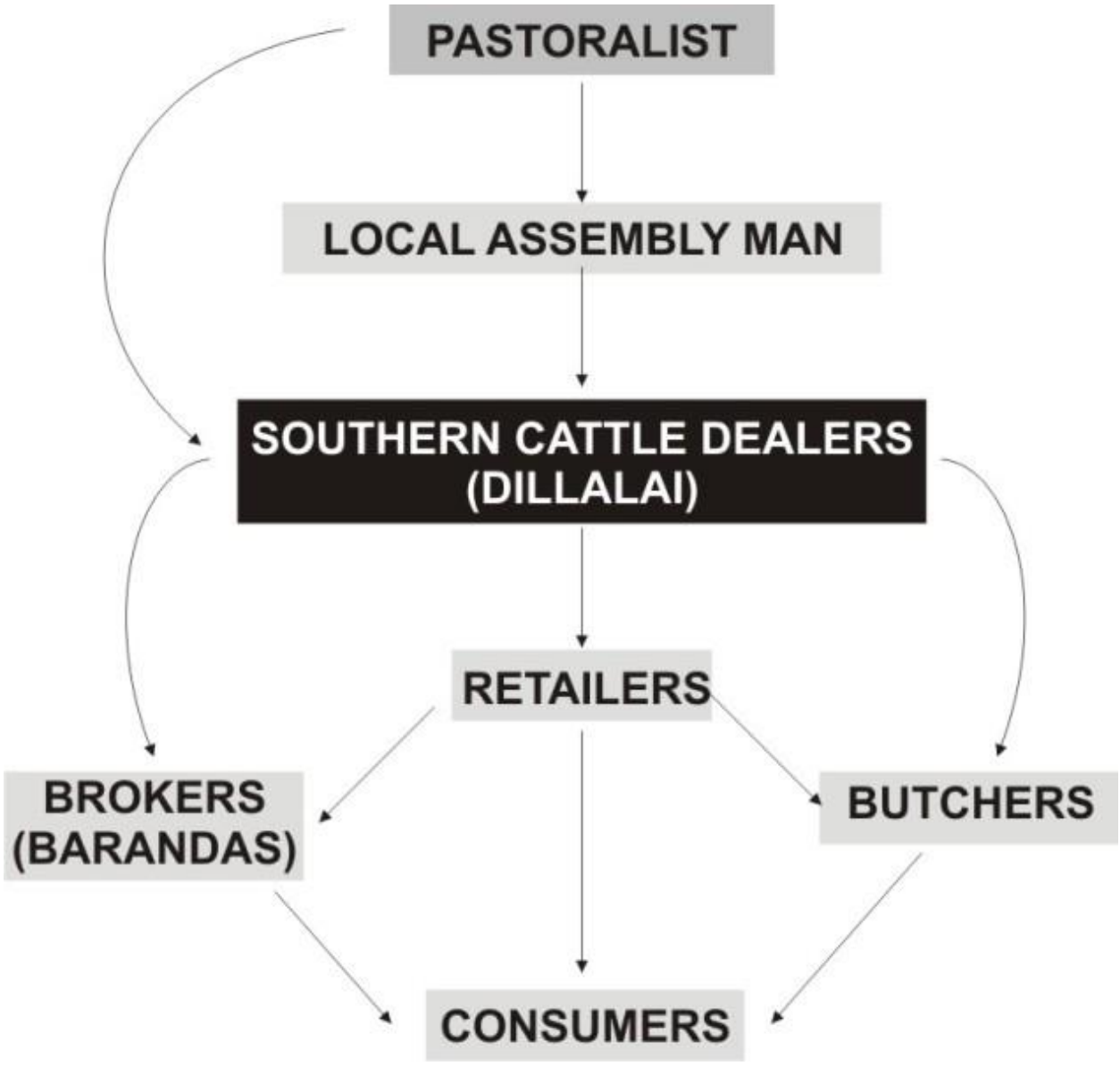

FIGURE 1: Cattle Marketing Chain in Nigeria

Retailers: The retailers are traders in the southern market kraals. Majority (>80%) of retailers buy cattle from the cattle dealers. Field visits and data summary through descriptive statistics revealed that retailers may have anything between 7-15 cattle in their stock at any particular time. About 12.0% of retailers report associating themselves with dealers to sometimes make trips to the north to purchase cattle while 88.0% usually get their cattle from dealers and never travel to the north to source cattle. An interesting revelation from interaction with the retailers is that majority of them were formerly cattle dealers who, owing to aging, can no longer afford the stress and risk of travelling the long distance to the northern part of the country to purchase cattle. Also, a few of the retailers were retirees, who have reasonable capital, from their

retirement benefits thus affording them the capital required to operate at this level of cattle marketing. The ages of retailers ranged from 54-72 years. The retailers were responsible for distributing cattle to the operators of butcheries, local traders and directly to final consumers who need between one to five animals for restaurant business or for a social occasion.

Brokers: These are people who hang around the kraals in the various markets visited purportedly waiting to help provide assistance to new buyers usually regarded as amateurs in the cattle business. The new buyers were mainly final consumers (agglomeration of individuals, households, restaurant operators, cooperative members etc) or sub-retailers who come to buy cattle from the dealers or retailers in small numbers for re-sale to prospective buyers. It is usually more costly to buy through the brokers, because they charge commissions. Thus, experienced cattle buyers avoid doing business with them. This accounts for the reason why brokers concentrate attention on new buyers who are greenhorns in cattle business.

3.2.2 Transportation Function

(a) **Mode of Transportation:**

Majority of the cattle traded in the study area were brought from the northern states of Bauchi, Borno, Jigawa, Kaduna, Kebbi, Katstina, Sokoto, Yobe, Niger, Zamfara, Nasarawa, Adamawa, Plateau and Gombe States. The main mode of transport used in conveying cattle from the north to the southern markets is by road. This may be due to the absence of rail link to most of the origin markets in the north and to Akinyele and Bodija Kraals. The non-functionality of rail transportation might have contributed to the heavy transport fares charged by road transporters since they know there is no alternative for moving cattle to the southern market. This situation has greatly increased operational costs of the business according to respondents.

(b) **Types of Vehicles used for Transportation of Cattle**

Results from Table 9 shows that vehicles used include the long articulated trailers, lorry trucks and Mitshubishi Canters with respective capacities of 33-42, 15-18, and 10-12 cattle per load. The choice of vehicle types depends on the number of cattle to be transported. In certain situations, 3 to 5 dealers purchasing cattle from the same market location join together to hire the articulated trailers and share the cost. When this is the case, the animals are branded with unique marks which tell which dealer owns them.

Table 9: Distribution of Respondents Based on Type of Vehicle Used

Vehicle Type	Frequency	Percentage	Cumulative Percentage	Cattle Capacity
Long Trailers	38	63.3		33-42
Trucks	10	16.7	80.0	15-18
Mitsubishi Canters	12	20.0	100	10-12
TOTAL	60	100.0		

Source: Computed From Field Survey, 2011

Cost is usually shared in accordance with the number and size of cattle owned by each dealer. Transportation cost was found to vary varied with distance covered. According to the dealers, other factors which can influence the transport cost included the size of cattle, the number carried by each vehicle and the season of movement. Usually transport costs are slightly higher during the high demand periods of religious festivities. From Table 10, it can be seen that majority (about 63.0%) of dealers make use of trailers as their major source of transportation while 20.0% and 16.7% make use of Mitsubishi Canters and trucks, respectively.

3.2.3 **Membership of Market Associations**

Well organized and long existing market associations were found in cattle marketing in the study area. The Hausa Cattle Traders Association and the Owolowo Cattle Traders Association are the two market associations operating in each of the study area. All the traders interviewed were members of at least one of these associations in their respective market Kraal locations. The importance of these associations is that they serve as platforms for sharing experiences, identifying and solving the common problems associated with the business. An important *raison d' etre* of these associations is to establish and promote thrift cooperatives which are the major sources of credit/loans for the marketers. The marketers revealed that their most important reasons for joining the market associations were access to soft loan/credit, social interactions, ethnic affiliations, business experience/information sharing (in that order). It is noteworthy that the market associations provide a rallying point for members during social occasions as earlier reported by Akinrinola and Mafimisebi (2010).

3.3 Cost and Returns in Cattle Marketing

The cost and returns items of cattle marketing for dealers (wholesalers), retailers and brokers are presented in Tables 10, 11 and 12. There was no fixed cost item because traders did not own either a ware house or a truck. Most of their expenses were restricted to the operational costs of maintaining the animals in terms of supplementary feedings before final conveyance to the distant markets as well as taxes/levies paid in transit and thus only gross margin could be calculated. According to Adegeye and Dittoh (1985), gross margin is a good measure of profitability. The budgeting model was based on the average values reported by all the marketers sampled in each category.

3.3.1 Cattle Traders Cost and Returns Items (Dealers)

Table 10: Cattle Dealers' Cost, Returns and Profit

Item	Qty	Unit price (₦)	Total price (₦)	Net Value (₦)
1.Number of Cattle Heads	38	69000	2622000	
2. Attendants	2	7506	15012	
3.1ntermediate input and services				
a. Feeds			10862	
b. Water			4510	
c. Transport			143813	
d. Veterinary cost			1433	
4. Other costs				
a. Association fees			1363	
b. Taxes			7430	
c. Loading and unloading fees			9083	
Total			2815506	
Total Revenue	38	80640	3064320	
Net Revenue (Gross Margin)				248814

Source: Computed From Field Survey, 2011

3.3.2 Retailer

Table 11: Cattle Retailers' Cost, Returns and Profit

Item	Qty	Unit price(₦)	Total price (₦)	Net Value (₦)
1.Number of Cattle Heads	51	78600	3916800	
2. Attendants	2	6050	12100	
3.1ntermediate input and services				
a. Feeding			11020	
b. Water			3527	
c. Transport			29580	
d. veterinary costs			2800	
4. Other costs				
a. Association fees			650	
b. Taxes			-	
c. Loading and unloading fees			4400	
Total			3980877	

Total Revenue	51	83817	4274667	
Net Revenue (Gross Margin)				293790

Source: Computed From Field Survey, 2011

3.3.3 Brokers

Table 12: Cattle Brokers' Cost, Returns and Profits

Item	Qty	Unit price(₦)	Total price (₦)	Net Value (₦)
1.Number of Cattle Head	4	82300	329200	
3.Intermediate input and services				
a. Feeding			400	
b. Water			230	
c. Transport			-	
d. Veterinary cost			-	
Total			329830	
Total Revenue		84800	339200	
Net Revenue (Gross Margin)				9370

Source: Computed from field survey, 2011

Results showed that all the various categories of marketers were able to cover their total variable cost of marketing and earn a reasonable level of returns. The variable cost included labour, feeding, water, transportation, veterinary services, association fees, taxes and loading and unloading charges. The average cost price per head of cattle was ₦ 69,000, ₦ 78,600 and ₦ 82,300 for cattle dealers, retailers and brokers, respectively, while the average selling price per head of cattle was ₦80,640, ₦ 83,817 and ₦ 84,800, respectively. This gave a gross margin of ₦ 6,548, ₦ 4,655 and ₦2,342.5 per head of cattle for a dealer, retailer and broker, respectively. Data shown in Tables 10, 11 and 12 reveal that the cattle marketing business is profitable in the study area.

3.3.6 Profitability and Efficiency Ratios of Cattle Marketing

As shown in Table 13, a profitability ratio of 0.09, 0.07 and 0.03 was reported for dealers, retailers and brokers, respectively. This shows that the cattle marketing business is profitable to the different category of marketers in this study area. Another interesting observation was that profitability was highest among the cattle dealers closely followed by the retailers while the brokers had the lowest profitability ratio. This might not be unconnected with the distance covered in transportation by the cattle marketers as transportation was the major value-adding activity in cattle marketing. Thus, findings from this study seem to suggest that the greater the distance covered to source cattle by an intermediary, the higher the profitability ratio.

Table 13: Profitability and Efficiency Ratios of Marketers

Category	**Total Revenue(TR) ₦**	**Total Expenses(TC) ₦**	**TR-TC, Net Revenue**	π/TC, Profitability Ratio	TR/TC, Efficiency Ratio
Dealers	3064320	2815506	248814	0.09	1.09
Retailers	4274667	3980877	293790	0.07	1.07
Brokers	284400	275030	9370	0.03	1.03

Source: Computed from field survey, 2011

An enterprise is regarded as operationally efficient or inefficient as the efficiency ratios is greater than one or less than one, respectively. In this case, efficiency ratios of 1.09, 1.07 and 1.03 was indicated for dealers, retailers and brokers, respectively. This shows that the marketing enterprise was operationally efficient at the different marketer categories with the cattle dealers being the most operationally efficient closely followed by the retailers and the brokers.

3.4 Factors Considered in Price Formation

It is a common assertion a commodity is valued for its quality and utility generating attributes which purchasers evaluate when making a purchase decision (Seperich, *et al*., 2002). Hence, the observed market price for a product is the sum of the implicit prices paid for each quality attributes. However, in most empirical studies, the observed prices may reflect not only consumer preferences but also attributes of buyers and sellers (Mafimisebi, 2011). The market price of different types of livestock is not an exception as the final price buyers are willing to pay appears to be the sum of the payment for each quality attribute that enhances utility, the socio-economic attributes of sellers and buyers and the political organization of the market setting (Seperich *et al*, 2002).

3.4.1 Ranking of Factors Considered Important in Price Formation

Generally, 10 different factors were prominent among the factors identified by both sellers and buyers (retailers and brokers).The ranking of each of these factors in cattle price formation is presented in Table 14.

Table14: **Ranking of Factors Considered in Price Formation**

Identified factors	Very Important (4)	Important (3)	Slightly important (2)	Not Important (1)	PFSI	RANK
Age of cattle		9	105	6	243	7
Body Condition	119	-	-	1	477	1
Category of Sellers	1	2	35	82	162	9
Category of Buyers	-	74	45	1	313	3
Mode of Payment	-	83	35	2	321	2
Occasions/festivals	2	57	57	4	297	5
Colour	-	3	20	97	146	10
Sex	2	63	51	4	303	4
Breed	2	27	91	-	271	8
Prevailing Market Level of Demand and Supply	-	57	48	15	282	6

Source: Computed from field survey, 2011

Result from the study indicated that body condition is the most popular factor often considered by the marketers in the study area. This is closely followed by the mode of payment (credit or cash) and the type of seller (dealer, retailer or broker). The least considered factor in determining price formation is colour with a PFSI of 146. This indicates it has very low relevance in price formation. This finding may be in conformity with the ancient adage that says "Beauty is only a skin deep".

Some of the identified constraints faced by cattle marketers in the study areas included; insufficient capital, multiple taxation, poor road network, insecurity, poor veterinary services identified by 85.0%, 68.3%, 83.3%, 79.7% and 56.7% of the respondents, respectively.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Summary

This study examined the fundamentals of cattle marketing in south west, Nigeria. It looked at the socio-economic and operational characteristics of cattle marketers, cost and returns, marketing channel, conduct of marketers, operational efficiency of cattle marketing, factors

taken into consideration in price formation. Primary data were collected from 120 market intermediaries using stratified sampling techniques.

The method of data analysis included descriptive statistics such as frequency tables, mean and percentages. Budgeting technique which yielded gross margin and profitability ratios were used to determine the profitability of cattle marketing in the study area. A computed price formation index was used in identifying the relative importance of the factors that inform price formation in cattle markets.

The results of the socio-economic analysis showed that cattle marketing is male dominated as 87.5% of market intermediaries were males, 64.0% of respondents were less than 50 years showing that they are still in the economically active age brackets and thus capable of withstanding the stress associated with cattle marketing. About 68.0% of market participants had one form of formal education or the other. Result of profitability analysis showed cattle marketing as profitable in the study area. The gross margin per head of cattle for wholesalers, retailers and brokers was ₦ 6548, ₦ 4,655 and ₦ 2,342.50, respectively while the profitability ratios in the same order was 1.09, 1.07 and 1.03. This showed the dealer category as the most profitable followed by the retailing and brokerage. This is not unconnected with the fact that the major value added in cattle marketing is transportation and therefore the longer the distance along which cattle has had to be transported *en route* the final consumers, the greater the opportunity for actors to make profits. An attempt to identify the factors considered important in deciding the prices of cattle revealed that body condition, mode of payment and type of buyers were the major determinants of cattle prices while breed, category of sellers and colour were the least considered.

4.2 Recommendations and Conclusion

From the result of this study, a number of recommendations emerge. One, there is the need to strengthen marketing institutions to enable them provide adequate support and services to their members. Such services will includes facilitating access to credit by acting as guarantors to bank loans, acting as an advocacy/ pressure group to demand for better marketing conditions including eliminating illicit taxation. In this wise, the leaders of market associations need to be capacitated in the mechanisms of peaceful negotiations and lobbying that help to minimize the exploitative tendencies of tax collectors. This, hopefully, will lead to easy access to assistance from government and credit from financial institutions. This is an urgent step for the continued success of cattle marketing.

Two, since the trade in cattle is found to be profitable in the study area, government should encourage young graduates to venture into the business. To stimulate students' interest in this business while they are still in school, linkage should be fostered with dealers so that agriculture and business students can then be attached to them for their internships. This will provide the opportunity for such students to understudy them and take to this business upon graduation. Providing accessible micro-credit facilities to willing fresh graduates through a special window, should be an important component of this internship package. This should be seen as a policy option for combating the endemic menace of unemployment among young educated Nigerians.

Three, the government should, as a matter of urgency, declare emergency in road construction and rehabilitation to help ameliorate the challenge of poor road infrastructure, while at the same time resuscitating the moribund rail transportation system to provide a cheap alternative means of transport to marketers and their merchandise.

Four, concerted efforts is needed from all the stakeholders in order to arrest the deplorable security situation in the country to enable marketers have conducive environment to carry out their transactions thereby reducing the intermittent loss by cattle market intermediaries often associated with robbery, banditry and theft.

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