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COMPARATIVE ANALYSIS OF GOAT AND SHEEP MARKETING IN WUDIL LOCAL GOVERNMENT AREA OF KANO STATE, NIGERIA

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ABSTRACT

This study was conducted in Wudil Local Government Area of Kano State to comparatively analyze the marketing of goats and sheep in the area, with Wudil Livestock Market being purposively chosen for the study. A total of 85 marketers (50 goat and 35 sheep marketers) were proportionally and randomly selected for the study. The data collected were analyzed using descriptive statistics, marketing margin and Gini Coefficient. Findings revealed that all the marketers were males with 84% goat marketers and 66% sheep marketers being married. Profitability analysis revealed that sheep marketing had a higher profit of ₦2,028.5 than goat marketing with ₦1,307.5 profit. Conversely, goat marketing had a higher marketing efficiency of 115.8% while sheep marketing had 111.5%. The study therefore, revealed that though both goat and sheep marketing are profitable and efficient in the study area, sheep marketing requires higher initial capital outlay of ₦16,900 than goat marketing with ₦7,650. Similarly, with Gini Coefficients of 0.72 and 0.64 for goat and sheep markets respectively, both markets exhibit perfect inequality with an indication of unequal distribution of market share among the marketers. Common constraints faced by the two sets of marketers include high cost of transportation, inadequate capital, poor market infrastructure, as well as multiple market charges. It is therefore, recommended that since the two ventures are profitable and efficient, youths should be encouraged to go into them by the government by empowering them with initial start-up capital and provide good infrastructure in the market.

Key Words: Marketing Margin; Efficiency; Market Structure; Goat; Sheep.

INTRODUCTION

Domestic goats (*Capra hircus* L) and sheep (*Ovis aries* L) are important ruminants that constitute an integral part of the Nigerian economy in terms of income generation. This is because, apart from providing meat for household consumption and skin for tanneries, they generate valuable income for different actors involved in their production, processing and marketing along their value chains (Okunlola, Amuda, and Ayanwamide, 2010; Oyewo, Afolabi, Ademuwagun and Owolaola, 2018). According to Ogbeh (2016), the 2011 National Agricultural Sample survey indicated that Nigeria is richly endowed with an estimated population of 72.5 million goats and 41.3 million sheep in comparison with 19.5 million cattle. This indicates that goat and sheep constitute very important part of the livestock population in Nigeria. Apart from this, goats and sheep are more resilient than larger ruminants because they can withstand drought and diseases better and also have shorter reproductive cycles which increase their fecundity rate in a year. Thus, goat and sheep provide the easiest and ready sources of meat and income to meet immediate nutritional, social and financial needs of rural households in Nigeria (Oyewo, Afolabi, Ademuwagun and Owolaola, 2018).

Northern Nigeria is very much endowed in livestock production, particularly in goats and sheep because of the ample availability of grasslands and limited presence of tsetse fly in the zone (Lawal-Adebowole, 2012). This has therefore, accounted for a vibrant livestock trade within the north and between the north and southern part of Nigeria. It is estimated that total live animal trade between the North and South of Nigeria is about ₦850-950 billion per annum (NIRSAL, 2016). Prominent in this trade are goats and sheep which are transported daily in large numbers from the north to southern markets. In spite of this vibrant livestock trade, goat and sheep rearing are fraught with problems of frequent disease attacks and inadequate veterinary services among others

(Enuwelu, Ezeuko, and Machebe, 2015). Furthermore, Oyewo, Afolabi, Ademuwagun and Owolaola, (2018), observed that high cost of transportation, inadequate security, insufficient credit facilities and multiple market charges are some of the constraints hampering goat and sheep trade. With these problems in mind, it is therefore necessary to conduct a comparative study on the marketing of these two important ruminants so as to ascertain their profitability and potentials for poverty alleviation in rural households in Nigeria.

There are two main markets in Wudil Local Government Area of Kano State: the Darki multi-commodity market and the Wudil Livestock Market. The Wudil Livestock Market is an important bulking market where large quantities of cattle, goat and sheep are traded every Friday. A pilot study conducted in the market revealed that high cost of transportation, insufficient credit facilities, poor market infrastructure and high market charges are some the problems encountered by marketers in this market. Therefore, it was necessary to conduct a comparative study of this market so as to ascertain its profitability and efficiency in the marketing of goats and sheep and from there, make recommendations. Specifically, the study described the socio-economic characteristics of goat and sheep marketers in Wudil Local Government Area, estimated the profitability and efficiency of goat and sheep marketers in the study area, examined the structure of goat and sheep markets and identified the constraints of goat and sheep marketing in the study area. From these objectives, conclusions were drawn and recommendations made to enhance the marketing of these two livestock in the study area.

MATERIALS AND METHODS

The study was conducted in Wudil Local Government Area of Kano State. Wudil Local Government Area is located between latitudes 11.49^{o}N to 11.817^{o}N and longitudes 8.51^{o}E and 8.85^{o}E. The Local Government Area is about 38km from Kano Metropolis along the Kano-Maiduguri Road and has an area of 362km^{2} (KNSG, 2014). The popular Wudil Livestock Market which holds every Friday serves as an important bulking livestock market which attracts a large number of marketers from within Kano State, neighbouring states and southern Nigeria.

Sampling Procedure

A three-stage sampling procedure was used to select the respondents for the study. There are two main markets in Wudil Local Government Area: Darki and Wudil markets. Darki market which holds every Thursday is multi-commodity market while the Wudil market is a livestock market which holds every Friday. Therefore, in the first stage, the Wudil Livestock Market was purposively selected because of the high concentration of livestock traded in the market. Secondly, the major livestock traded in the Wudil Livestock Market are cattle, goats and sheep. For this study, goats and sheep were purposively selected for study because many studies have been conducted on cattle marketing in the market. A pre-study survey conducted revealed that there were 71 goat marketers and 49 sheep marketers in the market as shown from the list obtained from the Sheep and Goat Marketers Association of the market. Therefore, in the third stage, a hat and draw method was used to proportionally sample 70% of respondents from each of the two categories of goat and sheep marketers to give a total of 85 respondents as shown in Table 1.

Table 1: Sampling Frame and Sample Size for Goat and Sheep Marketers in Wudil Livestock Market.

Livestock	Sampling Frame	70% of Sampling Frame	Sample Size
Goat	71	50	50
Sheep	49	35	35
TOTAL	**120**	**85**	**85**

Primary data were collected for the study and were corroborated by the use of secondary information from relevant journals, textbooks and other related literature.

Analytical Tools

Analytical tools such as descriptive statistics, marketing margin and Gini-Coefficient were used to analyze the data.

Gross Marketing Margin

Marketing margin refers to the difference in prices paid for a commodity at different stages of the marketing process as the commodity moves from the primary producer to the ultimate consumer (Olukosi, Isitor and Ode, 2005). This was used to ascertain the profitability of the goats and sheep markets. Gross Marketing Margin (GMM) as used by Shuaibu (2014), is given as:

GMM= TR-MC…… (1)

Where:

GMM= Gross Marketing Margin (₦) per head of goat (15.5kg)* and sheep (22.5kg)*

TR = Total Revenue (₦) per head of goat and sheep

MC = Marketing Cost (₦) per head of goat and sheep

*Average live weights of goats and sheep in Nigeria as used by Francis (1990)

Total Marketing Cost (TMC) is represented as:

$TMC = C_1 + C_2 + C_3 + C_4 + C_5 + C_6 + C_7 + C_8$…….. …… (2)

Where:

TMC = Total Marketing Cost (₦) per head of goat and sheep

C_1 = Purchase Price (₦) per head of goat and sheep

C_2 = Cost of transportation (₦) per head of goat and sheep

C_3 = Cost of loading/offloading (₦) per head of goat and sheep

C_4 = Cost of feeding and watering (₦) per head of goat and sheep

C_5 = Cost of medication (₦) per head of goat and sheep

C_6 = Local Government tax (₦) per head of goat and sheep

C_7 = Association levy (₦) per head of goat and sheep

C_8 = Commission agent fee (₦) per head of goat and sheep

Marketing Efficiency

Marketing efficiency is the maximization of output – input ratio in marketing (Olukosi, Isitor and Ode, 2005). The marketing efficiency of goat and sheep marketing is specified as:

$$ME=\frac{value\ added\ by\ marketing\ one\ goat/sheep}{\text{Cost of marketing a head of goat/ sheep}} \times 100 \quad (3)$$

Where:

ME = Marketing Efficiency

The decision rule is that when: ME > 100, it implies positive returns to business, ME < 100, it implies negative returns to business.

Gini-Coefficient

Gini-Coefficient measures the degree of market concentration and competiveness in a marketing system. This was used to determine the structure of the goat and sheep markets. It is mathematically expressed as:

$GC = 1-\sum XY$…….. (4)

Where:

G C = Gini –Coefficient

X = Percentage of goat and sheep marketers

Y = Cumulative percentage of the sales of goat and sheep marketers

Gini-Coefficient ranges from 0 to 1. A coefficient of 0 implies a perfect equality distribution while a coefficient of 1 means inequality distribution. The closer the coefficient is to 0, the greater the degree of equality and the lower the degree of concentration and more competitive are the markets (Maikasuwa and Jabo, 2014)).

RESULTS AND DISCUSSION

The results of the study are hereby presented and discussed.

Socio-economic Characteristics of Goat and Sheep Marketers in the Study Area

Table 2 shows the socio-economic characteristics of goat and sheep marketers in the study area. The Table shows the gender, age, marital status, level of education, marketing experience and household size of the marketers. Gender is a set of characteristics used to distinguish males from females. The Table reveals that the respondents in both goat and sheep marketing were all males in the study area. This may be due to cultural reasons which limit women to more outdoor activities in the study area so that they can devote their time to taking care of children and household chores. This finding agrees with that of Oyewo, *etal.,* (2018), who reported that all the goat and sheep marketers they studied in Akinyele Local Government of Oyo State were males. The age distribution of the respondents show that the age category of 41-50 years accounted for 42% of goat marketers while the age range of 21-30 years accounted for 28.6% of the sheep marketers. This means that sheep marketers were relatively younger and can therefore, take more marketing risks than goat marketers. Also, the marital status of the respondents showed that 84% and 66% of goat and sheep marketers were married respectively. This means more of the goat marketers were married, but since a greater percentage of both marketers are married, they are capable of making responsible marketing decisions for the benefit of their households. The level of education of the respondents indicated that 42% and 34% of the goat marketers had Quranic and primary education respectively while for sheep marketers, 34% and 43% had primary and secondary education. This implies that sheep marketers were more educated than goat marketers and can therefore make better informed and innovative marketing decisions than goat marketers. All these findings also agree with the observations of Oyewo, Afolabi, Ademuwagun and Owolaola, (2018).

In terms of marketing experience, 46% of goat marketers had experience ranging from 1-20 years while 68.6% of sheep marketers had a similar range of experience. This means that sheep marketers had more marketing experience than goat marketers and therefore can make informed marketing decisions than goat marketers. Similarly, 42% of goat marketers had a household size of 1-10 while 34% had a household size of 11-20. On the other hand, 68.6% of sheep marketers had a household size of 1-10 while 25.7% had a household size of 11-20 respectively. This means that sheep marketers had a lower household size than goat marketers. The implication of this is that while goat marketers may have more household members who can assist in marketing, the large size of their families may have negative effects on their overall profit because they will spend more on household consumption than sheep marketers. These findings are in conformity with those of Ketema (2007) who studied the production systems and marketing of sheep and goat in Alaba, Southern Ethiopia.

Table 2: Socio-economic Characteristics of Goat and Sheep Marketers in Wudil Livestock Market

Variable	Goat Marketers		Sheep Marketers	
	Frequency	Percentage	Frequency	Percentage
Gender				
Male	50	100	35	100
Female	------	------	-------	--------
Total	**50**	**100**	**35**	**100**
Age (Years)				
11-20	5	10	6	17.1
21-30	4	8	10	28.6
31-40	11	22	9	25.7
41-50	21	42	6	17.1
>50	9	18	4	11.5
Total	**50**	**100**	**35**	**100**
Marital Status				
Single	5	10	11	31
Married	42	84	23	66
Divorced	3	6	01	3
Total	**50**	**100**	**35**	**100**
Education				
Quranic	21	42	6	17
Primary	17	34	12	34
Secondary	9	18	15	43
Tertiary	3	6	2	6
Total	**50**	**100**	**35**	**100**
Marketing Experience (Years)				
1-10	11	22	10	28.6
11-20	12	24	14	40
21-30	19	38	6	17.1
31-40	5	10	5	14.3
>40	3	6	---	-----
Total	**50**	**100**	**35**	**100**
Household Size				
1-10	21	42	24	68.6
11-20	17	34	9	25.7
21-30	10	20	2	5.7
>30	2	4	-----	-------
Total	**50**	**100**	**35**	**100**

Source: Field Survey, 2020

Profitability Analysis

Table 3 shows the comparative profitability analysis of goat and sheep marketing in the study area. The results of the Table indicate sheep marketing requires higher initial capital outlay of ₦16,900 per head of sheep than goat which requires ₦7,650 per head. Goat marketing had a total marketing cost (TMC) of ₦8,922.5, a total revenue (TR) of ₦9,600, a gross marketing

Table 3: Comparative Profitability Analysis of Goat and Sheep Marketing in the Study Area

Variable	Goat Marketing Amount per Head of Goat (₦)	Sheep Marketing Amount per Head of Sheep (₦)
Marketing Cost		
Purchase Price	7, 650	16,900
Cost of Transportation	100	100
Loading and Offloading	20	20
Feeding and Watering	135	164
Medication	87.5	87.5
Local Government Tax	50	50
Association Levy	50	50
Commission Agent	200	300
Total Marketing Cost (TMC)	**8,292.5**	**17,671.5**
Revenue (TR)	**9,600**	**19,700**
Gross Marketing Margin (GMM) (TR-TMC)	**1,307.5**	**2,028.5**
Marketing Efficiency (TR/TMC x 100)	**115.8%**	**111.5%**

Source: Field Survey, 2020

margin (GMM) (profit) of ₦1,307.5 and marketing efficiency (ME) of 115.8% per head of goat. On the other hand, sheep marketing had a total marketing cost (TMC) of ₦17,671.5, a total revenue (TR) of ₦ 19,700, a gross marketing margin (GMM) (profit) of ₦ 2,028.5 and marketing efficiency (ME) of 111.5%. This shows that both goat and sheep marketing are profitable and efficient in the study area. However, sheep marketing though with higher initial capital outlay, has a higher profit of ₦2,028.5 per head of sheep than goat with ₦1,307.5. On the contrary, goat marketing is more efficient with a marketing efficiency of 115.8% than sheep marketing with marketing efficiency of 111.5%. These findings are consistent with those of Maikasuwa and Jabo (2014) and Oyewo, Afolabi, Ademuwagun and Owolaola, (2018), who studied goat and sheep marketing in Sokoto Metropolis and Akinyele Local Government in Oyo State respectively and observed that the marketing of these two ruminants was profitable and efficient in both places. Maikasuwa and Jabo (2014) also reported comparative higher profit margin for sheep marketing and higher marketing efficiency for goat marketing.

Structures of Goat and Sheep Markets in the Study Area

Tables 4 and 5 show the structures of goat and sheep markets in the study area. Table 4 shows a Gini-coefficient of 0.72 for the goat market while Table 5 shows a Gini-coefficient of 0.64 for the sheep market in the study area.

This indicates that the goat market in the study area is more highly concentrated than that of the sheep market with an implication for oligopolistic structure in both markets. Therefore, the two markets exhibit features of perfect inequality (more than 0.5), an indication of unequal distribution of market share among the marketers. With this, it may be difficult to rule out collusive tendencies in the market especially with the presence of a strong Goat and Sheep marketers Association in the Wudil livestock market. This means no single seller or buyer can unduly influence prices in the market. However, in terms of pricing efficiency, the goat market is more efficient than the sheep market. These findings are in consonance with those of Maikasuwa and Jabo (2014) who studied goat and sheep marketing in Sokoto Metropolis and reported that the markets for the two livestock tended towards an oligopolistic structure. This is however, in contrast with the findings of Oladejo (2014) who reported a Gini coefficient of 0.22 for goat marketing in Oyo state, Nigeria which is an indication of a tendency towards perfect competition.

Table 4: Distribution of Goat Marketers by Monthly Sales

Quantity Sold	No. Sellers	POS	TVMS	PMS	CPMS	X	Y	XY
1- 6	7	14	30	4.44	4.44	0.14	0.04	0.006222
7 - 12	13	26	117	17.33	21.778	0.26	0.17	0.045067
13 - 18	21	42	329	48.74	70.519	0.42	0.49	0.204711
19 - 24	6	12	121	17.93	88.444	0.12	0.18	0.021511
> 25	3	6	78	11.56	100.000	0.06	0.12	0.006933
TOTAL	**50**	**100**	**675**	**100**				**0.28**

Note: G = 1 - $\sum XY$
G = 1 – 0.28 = 0.72

Table 5: Distribution of Sheep Marketers by Monthly Sales

Quantity Sold	No. Sellers	POS	TVMS	PMS	CPMS	X	Y	XY
1- 6	12	34.3	63	21.36	21.361	0.34	0.21	0.07322
7 – 12	17	48.6	156	52.88	74.237	0.49	0.53	0.256852
13 – 18	4	11.4	56	18.98	93.220	0.11	0.19	0.021695
19 - 24	2	5.7	20	6.78	100.000	0.06	0.07	0.003874
TOTAL	**35**	**100**	**295**	**100**				**0.36**

Note: G = 1 - $\sum XY$ G = 1 – 0. 36 = 0.64
Note : POS = percentage of sellers, TVMS = Total value of monthly sales, PMS = Percentage of monthly sales, CPMS = Cumulative percentage of monthly sales

Constraints of Goat and Sheep Marketing in the Study Area

Table 6: Constraints Affecting Marketing of Goat and Sheep in the Study Area.

Variable	Goat marketing		Sheep marketing	
	Frequency	Percentage	Frequency	Percentage
High cost of transportation	42	84	26	74.3
Inadequate capital/ credit facilities	30	60	22	62.9
Poor market infrastructure	29	58	23	65.7
High/Multiple market charges	28	56	21	60
Price instability	20	40	19	54.3
Insecurity	20	40	16	45.7

Source: Field Survey, 2020. Multiple responses were taken

Table 6 shows the constraints affecting goat and sheep marketing in the study area. Prominent complaints by goat marketers include high cost of transportation (84%), inadequate capital/credit facilities (60%), high/multiple poor market infrastructure (58%) and high/multiple market charges (56%). While for sheep marketers, prominent complaints include high cost of transportation (74.3%) poor market infrastructure (65.7%) inadequate capital/credit facilities (62.9%), high/multiple market charge (60%) and price instability (54.3%). All these findings are consistent with those of Oyewo, Afolabi, Ademuwagun and Owolaola, (2018),

who studied sheep and goat marketing in Akinyele LGA of Oyo State, Nigeria. Similar findings were made by Saleh, Adamu, Mohammed, Hamidu, Yau and Sani (2019), who studied market performance of small ruminants in Gombe State.

CONCLUSION AND RECOMMENDATION

The results of the analysis showed that both goat and sheep marketing are profitable and efficient enterprises in the study area. However, sheep marketing requires more initial capital outlay of ₦16,900 and thus with higher profit of ₦2,028.5 per head of sheep as compared with goat marketing with initial capital outlay of ₦7,650 and profit of ₦1,307.5 per head of goat. But conversely, goat marketing has a higher marketing efficiency of 115.8% than sheep marketing efficiency of 111.5%. Both markets show some features of oligopolistic market structure with an indication of unequal distribution of market share among the marketers.

Based on the above findings, it is therefore recommended that since both ventures (goat and sheep marketing) are profitable, the youth should be encouraged to go into them by providing them with sufficient initial capital, good and cheaper means of transporting their animals and establishment of good market infrastructure in the Wudil Livestock Market by the government. The marketers can also form co-operatives to enable them have access to credit facilities to expand their business. However, the type of venture any youth wants to go into should be determined by his motives. If the motive is higher profit through high business turnover, then sheep marketing should be preferred. But if the motive is high market efficiency with lower business risks, then goat marketing should be chosen.

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