



PROFITABILITY OF SHEEP MARKETING IN BAUCHI LOCAL GOVERNMENT AREA OF BAUCHI STATE, NIGERIA.

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ABSTRACT

The study examined the profitability of sheep marketing in Bauchi Local Government Area, Bauchi state, in Nigeria. Purposive and simple random sampling techniques were used to select 60 sheep marketers from the study area. Data were collected using structured questionnaire and analyzed using descriptive statistics, farm budgeting and multiple regression analysis. The result showed that sheep marketers had mean household size of 13 persons. Majority (83%) of respondents invested from their personal savings while only 5% collected loan. The result further revealed that 13.30% of the respondents invested less than ₦50,000 to start the sheep marketing while 29.20% invested above ₦300,000 and half (50%) of the respondents revealed open market as their major source of information. In addition, the marketing margin, net income and returns per naira invested per sheep in the study area was ₦38,816.40, ₦33,926.70, and ₦0.26 respectively. The findings revealed that the cost of sheep, feeding, and medication were significant at ($p < 0.001$), ($P < 0.01$) and ($p < 0.05$), respectively. In addition, the estimated value of R^2 was 0.784 for sheep marketing, implying that the included variables explained 78% variation in the total revenue of the sheep marketing. The study concluded that sheep marketing was profitable. Finally, the study identified inadequate credit facilities, inadequate market information, high cost of transportation and inadequate housing facilities as the most pressing constraints affecting the system. The study therefore, recommends the need for credit or financial support to improve marketing activities and improvement of banking service. Government should provide good means of transporting the animal like the possibility of using trains, construct good feeder roads so as to reduce rate of taxes/levy in transit and high marketing charges.

Keywords: Profitability, Sheep, Marketing.

INTRODUCTION

Livestock are animals which are kept for productive purpose. Nigeria possesses vast resources in livestock including cattle, sheep, goat, poultry, rabbits etc. Nigeria's livestock have characteristic of a capital investment yielding an interest in the form of beef, milk, egg and other valuable products which provide protein and helps in alleviating hunger (SDG 3). Apart from serving as a sources of food for humans, livestock is also important in providing non-food materials such as hides, skins, wool, feather etc which are in turn used as raw materials for manufacturing other valuable products e.g. hides and skin for leather goods (Maikasuwa and Jabo (2014). The sound management and conservation of this resource is one of the priority issues of the global strategy for sustainable development (Kolosov *et al.*, 2013). Nigeria has population of about 34.5 million goats, 22.1 million sheep and 13.9 million cattle (Lawal and Adebawale, 2012). Food and Agricultural organization FAO (2003) reported that sheep and goat are the second most important supplier of meat after cattle but despite the large population



of livestock in Nigeria, the protein intake is still below the minimum requirement FAO, (2001). Sheep is one of the most important piece of small ruminant, livestock sub-sector, it plays also an important role in rural income generation, livelihood and food security among rural households in Nigeria, and it is considered as a means of diversification and as coping mechanism against crop failure due to weather and climatic changes, Jabo and Adamu (2018). In Bauchi Local Government Area of Bauchi state, there has been a noticeable increase in the population of sheep in the markets, this is because the traditional crop farmers in and around the town are showing interest in keeping sheep while Fulani pastoralists are increasingly in the peripheries of the town to take advantage of growing demand for sheep production and marketing. According to Olukosi *et al.* (2009). Market is said to exist whenever a transaction is done between a buyer and seller be it through physical contact, letter writing, and telephone or through other means of communication. Chand, R. (2012) defined marketing as the performance of all business activities involved in the flow of the product from the point of initial production unit it reaches the hands of the consumers . Kotle (2002) defined marketing as the social process by which individuals and group obtain what they need and want through creating and exchanging productions and values with other. Marketing channels include producers, primary and secondary traders (Mukasa *et al.*, 2012).

The future of animal husbandry in Nigerian depend on parallel market orientati on in livestock industry Lamidi, (2012). This can only be achieved through a compreh ensive study on economics of livestock marketing in the study area. The growth and development of the sheep market in Bauchi state is being threatened by many problems despite the important of the enterprises, marketers had the problems of selecting between two livestock enterprise due to the problem of increased cost of transportation in the study area. Therefore, this research highlighted the profitability in sheep marketing. The broad objective of the study was to evaluate the profitability of sheep marketing in the study area. The specific objectives of the study were to:

- i) Describe the socio-economic characteristics of sheep marketers in the study area.
- ii) Determine the profitability of Sheep marketing in the study area
- iii) Determine the factor that influence the Sheep marketing in the study area
- iv) Identify the major constraints militating against sheep marketing in the study area

The findings of the study will help in identifying the economics of sheep marketing, the cost and returns and managerial problems faced by the sheep marketers, this can help to determine the profitability of the enterprise. Several studies have pointed to the fact that different socio-economic factor play prominent role in adoption of new techniques especially by small scale marketers in agricultural sector (Halliru, 2011)

METHODOLOGY

Study Area

The study area is Bauchi Local Government Area (LGA), it is located between 9°06'-10°30'N and 9°30'-10°30'E in Nigerian Northern Guinea Savannah of Bauchi State at an altitude of 600m above sea level, according to NPC (2006), Bauchi Local government Area has a population of 493,810 and a land area of 3,540.701 km², the Northeast wind system has a temperature range of 31.6°C (maximum) and 13.1°C (minimum) while the Southwest wind system has 28.5°C and 19.9°C respectively. The area has an annual rainfall range of 600-1200mm. The area is characterised by distinct rainy (April-October) and dry (November-March) seasons.



Sampling Technique and Sampling Size

Three (3) sheep markets were purposively selected, these market were selected based on their accessibility, size of the markets, and large population of buyers and sellers of livestock. The selected markets were Durum, Liman katagum and Bauchi main livestock markets. Random sampling technique was used to select twenty (20) livestock marketers from each of the selected market, thus giving a total of sixty (60) livestock marketers as the sample size of the study.

Data Collection

Primary data were collected using structured questionnaires supplemented by verbal interview with the sheep marketers randomly selected from the study area.

Data Analysis

Data collected were analysed using both descriptive and inferential statistics. The descriptive statistics include frequency percentage and mean while the inferential statistics entails the use of regression analysis.

Descriptive statistics

The mean is expressed as:

$$\bar{X} = \frac{\sum fx}{n} \quad \dots(1)$$

Where, \bar{X} = mean

X = individual observation

n = sample size

Logit Regression Analysis

This was used to satisfy objective three which was to determine the factor influencing sheep marketing in the study area.

The model is implicitly expressed as

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_\mu) \quad \dots(2)$$

Where:

Y = Sheep marketing

X_1 = Cost of labour

X_2 = Cost of labour

X_3 = Medication

X_4 = Transportation cost

X_5 = Market revenue charges

X_6 = Middlemen commission

X_7 = Cost of feed

X_8 = Temporary house

X_μ = Error tem

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + e \quad \dots(3)$$

Where: Y = Sheep marketing

$X_1 - X_8$ = Independent variable

$b_1 \dots b_8$ = Regression coefficient

b_0 = constant

e = error term

RESULT AND DISCUSSION

Age is a very important factor in determining the marketing pattern among households. Table 1 revealed that 20.00% of the sheep marketers belong to the age class of 30-39 years, 35.00% within the age limit of 40-49 years, 33.30% within the age class of 50-59 years while



only 10.00% of the sheep marketers have 60 years and above. This is similar to the findings of Najamuddeen and Ummukhairi (2020) which reveals that 74% of their respondent falls within the age bracket of 26-45. The results showed that 31.70% of marketers had household size between 5 to 9 persons; while 30.00%, 15%, and 5% of the respondents had household size of between 10 to 14, 20 and above and less than 5 persons respectively with a mean household size of 13 persons. This agrees with finding of Bamigboye *et al.*, (2017) who stated that 75% of their respondent had a household size of 6-10 people. This could be explained on one hand by the early marriage and polygamous nature of most households, household is an essential element in all endeavors.

In agriculture, the important of education cannot be over-emphasized indeed; education represents a predetermining factor in information dissemination and technology adoption among sheep marketers in diverse socio-economic and biophysical environment. The results revealed that 33.30%, 25.00%, 23.30% and 11.70% of the sheep marketers had primary, secondary, no formal, post-secondary education respectively and while only 6.7% of respondents had Quranic education as their level of education. This contradicts the finding of Najamuddeen and Ummukhairi (2020), which reveals that only 8.9% of their respondents had primary school qualification. The result revealed that there was an average level of educational attainment among sheep marketers in the study area. Educated marketers are expected to have different ways of marketing technique that would lead them to generate more revenue. Table 1 further indicated that 31.70% of the sheep marketers had 10-14 years in marketing experience, while 26.70% and 15.00% had 5-9 and above 20 years of experience in sheep marketing respectively. This also agrees with findings of Bamigboye *et al.*, (2017) who stated that 53% of their respondent had 10-20 years of experience. Years of experience can affect the managerial ability and decision on marketing endeavors.

Table 1: Distribution of Respondents according to Socio-Economic Characteristics

Variables	Frequency	Percentage
Age		
Below30	1	1.70
30 – 39	12	20.00
40 - 49	21	35.00
50 – 59	20	33.30
60 and above	6	10.00
Household size		
Below5	3	5.00
5 - 9	19	31.70
10 - 14	18	30.00
15 – 19	11	18.30
20 and above	9	15.00
Mean	13	
Educational Status		
No formal education	14	23.30
Primary education	20	33.30
Secondary education	15	25.00
Quranic education	4	6.70
Post-secondary education	7	11.70
Years of experience		
Below5	11	18.30
5 - 9	16	26.70
10 - 14	19	31.70
15 – 19	5	8.30
20 and above	9	15.00

Source: Field Survey, 2020.

Sources of Capital

Table 2, indicated that majority (83.30%) of the sheep marketers sourced their capital from personal savings while 11.70% and 5.00% borrowed from friends/relatives and collected loans from the bank to start sheep marketing. This is because the demand for collaterals before loan is given from the banks discourages sheep marketer from collecting loan from banks.

Table 2: Distribution of Respondents According to Sources of Capital

Source of capital	Frequency	Percentage
Personal saving	80	83.3
Borrowed from friend / relative	7	11.7
Loan	3	5.00
Total	60	100

Sources: Field Survey, 2020.

Information Sources

Inadequate market information leads to price differences in market (Abbort, 2002). Table 3 shows the distribution of respondents according to their major sources of market information. Half (50%) of the sheep marketers got their information from the open market. Similarly 35.00% and 5.00% of the sheep marketers got their market information through



friends/ relations and radio respectively. This shows the effectiveness of open market in disseminating information about the price of sheep in the market.

Table 3: Distribution of Respondents According to Major Sources of Market Information

Source of information	Frequency	Percentage
Radio	3	5.00
Open market	30	50.00
Meeting	6	10.00
Friends / relation	21	35.00
Total	60	100

Source: Field Survey, 2020.

Capital Invested

Table 4 gives the distribution of respondents according to capital invested, the result shows that 41.70% of the respondent invested 100,001 – 200,000, only 15.00% of the respondents invested above ₦300,000 while only 3.30% of the respondents invested less than ₦50,000 and 16.70% have capital ranges between ₦50,001 to ₦100,00 only. This implies that most marketers have low capital invested for marketing activities.

Table 4: Distribution of Respondents According to Capital Invested on Sheep Marketing

Level of capital (₦)	Frequency	Percentage
Less than 50,000	2	3.30
50,001 – 100,000	10	16.70
100,001 – 200,000	25	41.70
200,001 – 300,000	14	23.30
Above 300,000	9	15.00
Total	60	100

Sources : Field Survey, 2020

Cost and Return Analysis

The results for the analysis revealed that, the net income of sheep marketers was found to be ₦33,926.71. The total variable cost accounted for 99.99 % of the total cost, while 0.01% was the fixed cost. The total variable cost of the sheep was found to be ₦ 30,273.67. The gross income obtained from sheep marketing was ₦33,926.70. The returns/naira invested of sheep marketers was ₦ 0.26. This implies that for every one naira invested yield a return of 26 kobo

Table 5: Cost and returns analysis for sheep marketing

Cost component	Average cost/sheep(₦)	Percentage
Variable Cost		
Cost of Purchase	25,683.67	84.83
Feeding cost	474.50	1.57
Transportation Cost	1,370.00	4.52
Medication Cost	274.17	0.91
Middle man	2,243.33	7.41
Labor Cost	228.00	0.75
Total Variable Costs	30,273.67	99.99
Fixed Cost		
Market Revenue changes	200	0.01
Temporary house	100	0.00
Total Fixed Costs	300	0.01
Total cost	3027667	100
Revenue / Animal	64,500.00	
Marketing Margin	38,816.67	
Net Income	33,926.70	
Return / Naira invested	0.26	26%

Sources: Field survey, 2020.

Factors Influencing Marketing of Sheep

The linear function was selected to explain the factor influencing sheep marketing because it had the best fit to the data as reflected in the magnitude of the coefficient of multiple determinations (R^2) of sheep as 0.780. The result further revealed that out of the variables included in the model of sheep marketing, cost of sheep purchased, cost of labour and cost of feeding were significant at 1%. Cost of medication was significant at 5%, others were not significant, feeding cost had negative regression coefficients indicating an inverse relationship between each of them and the revenue as presented in Table 6.

Table 6: Factors Influencing Sheep Marketing

Variables	Coefficients	T-Value	Sign
Constant	52.758.649	2.907	
Cost of purchase X_1	1.006	10.331	0.000 ***
Feeding cost X_2	-38.975	-2.19	0.003***
Medication cost X_3	-0.247891	-1.799	0.048**
Transportation cost X_4	1.581	-0.339 ^{NS}	0.736 ^{NS}
Cost of labour X_5	-55.350	-1.975	0.005**
Middlemen commission X_6	6.83	-1.214 ^{NS}	0.2313 ^{NS}
Market harges X_7	31.732	1.173 ^{NS}	0.246 ^{NS}
Temporary house X_8	126.026	1.667 ^{NS}	0.102 ^{NS}
R-value	78.4%		

Computed with SPSS 2020.

* 5% level of significant, ** 1% level of significant, *** 0.1% level of significant,
 NS= not significant



Major Constrains of Sheep Marketing

Table 7 shows the major constrain to sheep marketing. The result revealed that 40% of the sheep marketers faced with the problem of inadequate credit facilities. This agrees with finding of Bamigboye *et al.*, (2017) which revealed inadequate capital as the major constraints. Higher cost of transportation accounted for 21.70%; this was attributed to high cost and scarcity of fuel and inadequate feeder road in the study area. The study revealed that 10.00% had problem of inadequate housing facilities in the study area. Low profitability on the animal was a problem affecting sheep marketers; they usually faced the problems of animals emaciation and 25.00% revealed that inadequate market information affect marketing of sheep in the study area.

Table 7: Distribution of Respondents According to their Major Constraints

Constraints	Frequency	Percentage
Inadequate credit facilities	24	40.00
Inadequate market information	15	25.00
High cost of transportation	13	21.70
Inadequate housing facilities	6	10.00
Low profitability of animal	2	3.30
Total	60	100

Sources: Field Survey, 2020.

CONCLUSION AND RECOMMENDATION

The study concluded that sheep marketing was profitable in the study area and it is influenced by cost of sheep, feeding, labour and medication. In view of the above, the following recommendations are made to ensure the successful improvement of sheep marketing in the study area.

- Credit or financial support to improve marketing activities and improvement of banking service.
- Stakeholders should provide good means of transporting the animal like the possibility of using trains, construct good feeder roads.
- Adequate housing facilities should be provided to control insecurity and cost of housing through construction of temporary house by the government; this would improve the security in the study area.
- Government should encourage the formation of a viable association among the marketers in the area that would help in sanctioning of middlemen ("Yan-Baranda) through heavy levy imposition to discourage their activities.
- Government should intensify more extension work with good source of media, these would provide markets information on sheep marketing in the study area.

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