

# ANALYSIS OF BUYER-PREPARED TRAITS OF INDIGENOUS SHEEP IN DAMBATTA LIVESTOCK MARKET, DAMBATTA LOCAL GOVERNMENT, KANO STATE NIGERIA

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Article History	Abstract
<b>Original Research Article</b>	<p><i>The study was conducted to assess Analysis of buyer-prepared traits of indigenous sheep in Dambatta livestock market, Dambatta Local Government, Kano State Nigeria. A multistage sampling procedure was used to select 83 sheep buyers, and a structured questionnaire was used to elicit information from the sampled population. The collected data was analyzed using descriptive statistics to identify the socio-economic characteristics of the sheep buyers and identify the existing traits of sheep preferred by sheep buyers in the study area. The result reveals that the majority (77.10%) of the sheep buyers were male and married (71.10%), within the mean age of 38 years, with an average household size of 6 members. The study shows that most (45.80%) of the sheep buyers have attended tertiary institutions, and 39.80% were farmers and traders, while the average monthly income of the sheep buyers was ₦48,651.00 per month. The study depicts that the average purchasing experience of the buyers was 9 years, and the average number of sheep purchased at a time was 8 sheep, while 43.40% of the sheep buyers were fattener. The existing traits of indigenous sheep considered by the buyers was breed of sheep which were ranked 1st, body condition ranked 2nd, size of the sheep and healthy condition, while age of the sheep were ranked 5th with coat color which were ranked 6th. The study concluded that there are existing traits of indigenous sheep that sheep buyers considered when purchasing a sheep in Dambatta livestock market. The study recommends that the research institutions, livestock offices/departments, livestock marketers, fatteners, and stakeholders should focus on the improvement of these identified attributes that affect mostly the price of sheep at the market level.</i></p> <p><b>Keywords:</b> Buyers, Sheep, Indigenous Fatteners, Livestock.</p>
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## Introduction

Livestock animal markets are crucial in developing nations because they set the retail prices that consumers pay as well as the prices and profits that livestock farmers and merchants get. Although livestock is a major source of income for rural households, it also serves as an agricultural and financial asset that can be used for a variety of purposes, including saving money, producing electricity for transportation and crop cultivation (traction), and providing cash income when needed. Eating animal-sourced foods (ASFs) has been substantially associated with better nutritional outcomes for

consumers in lower-income contexts (Dror and Allen, 2011; Headey et al., 2018). Livestock markets sometimes include asymmetric information and short market periods, which reduce the negotiating strength of producers. For instance, when farmers must rush to trade because of inadequate market infrastructure, their negotiating power is diminished (Zelege et al., 2021). Furthermore, their market performance is severely impacted by their incapacity to obtain reference pricing data (Belay and Ayalew, 2020). Therefore, the advancements in agricultural markets and marketing typically do not assist

livestock caretakers (Zelege et al., 2021).

According to economic theories, an animal's attributes largely influence its price in a competitive market (Mc Hugh, 2010; Rosen, cited in Tarekegn, 2021). When making a purchase in these markets, buyers may assess the qualities of each animal and assign an implicit value to it (Bin, 2000). In these instances, the buyer's socioeconomic status, the market, and the season all affected the animal's price in addition to its characteristics (Girma et al. 2009; Girma et al. 2011; Hysen et al. 2015; Asresu et al. 2018). Due to market imperfections, each buyer assesses each price determinant, assigns an implicit price to each variable, and then, following a drawn-out and complex valuation process, determines how much they are willing to pay for the sheep (Tarekegn, 2021). Due to socio-cultural considerations, feed availability, and financial constraints, smallholder farmers are less likely to produce sheep for market sale (Kassie, 2011; Terfa, 2013; Yitayew et al., 2019). It should be mentioned that while purchasers have quite varied reasons for entering the market, they are unlikely to have similar preferences for animal characteristics.

Furthermore, the variations in preferences for animal characteristics contribute to the variability in buyers' willingness to pay for the traits. According to studies on the market behavior of small ruminants, buyer types, marketplaces, transaction seasons, and animal characteristics are significant elements that impact livestock price formation (Kassie, 2011; Yitayew et al., 2019; Ahmad et al., 2019; Zanou et al., 2024). According to Lancaster's theory of value, a high-quality product's worth in a competitive market comes from its unique characteristics (Lancaster, 1966). To separate the overall cost of the sheep into a set price component and the values of its qualities, for instance, the willingness to pay for a particular sheep trait is seen as a hedonic price (Rosen, 1974). Customer consumption habits in real or imagined markets are analyzed to determine the implicit values of the qualities. Customers' inclination to pay for certain characteristics based on their perceived usefulness is measured by implicit pricing (Lancaster, 1966; Rosen, 1974; Sen, 1971, mentioned in Tarekegn, 2021).

In the real world, not much research has been done on the variety of ways that sheep characteristics affect the price that purchasers pay for the animals. Due to the restricted nature of this data, there is a discrepancy between the characteristics that buyers seek when buying sheep and the elements that agricultural extension programs concentrate on in an effort to increase sheep keepers' market involvement. Given the significance of sheep to rural communities in Nigeria, it is critical to comprehend how various buyer types set prices for various sheep species based on specific characteristics.

Through a better-informed market development initiative, these studies will help build policies and strategies aimed at improving the livelihoods of sheep keepers in the nation's rural areas. Sheep continue to be the main source of food security and income for the Dambatta local government in Kano State,

Nigeria, in contrast to other household animals. There hasn't been much research done on the genetic and phenotypic characteristics of sheep that purchasers take into account when making a purchase. Studies on sheep attributes (physical observable character) or factors that are most important in explaining variations in selling prices that can then be matched to buyers' preferences for live sheep were scarce in the study area, despite the fact that economic analysis of livestock marketing has been carried out in some parts of Kano State. Based on the context mentioned above, the researchers aimed to achieve the following study objectives:

- i. to describe the socio-economics characteristics of the of sheep buyers in the study area, and
- ii. to identify the existing traits of indigenous sheep buyers consider when purchasing a sheep in the study area.

## Methodology

### The Study Area

The study was carried out in Kano State's Dambatta Local Government Area (LGA). The LGA spanned 732 square kilometers (km<sup>2</sup>) and was located between latitudes 12° 14' 49" N and 12° 36' 7.4" N and longitudes 8° 29' 5.7" E and 8° 49' 12" E. It is bordered to the east by the Babura local government unit of Jigawa State and is between Kano and Kazaure, abutting Daura on the way to Katsina State. Makoda Local Government borders it to the west, while Minjibir Local Government Area borders it to the south (Abbas et al., 2018). Farmers make up the majority of the population of Danbatta, the local government area's headquarters. Among the 44 local governments that make up Kano State, it is one of the oldest, having been established in 1976. The local government jurisdiction is located in a savannah environment that has both wet and dry seasons. The wet season runs from April to September, with an average of around 710 mm of rain, whereas the dry season lasts from October to March. The Danbatta local government region has dry season irrigated crops such rice, wheat, and other vegetables as well as rain crops like groundnuts, millet maize, guinea com cowpea, etc. The well-known Thomas Dam is one of the local fish sources. Bauxite and silica are abundant in the Danbatta local government region (Kano State Ministry of Water and Mineral Resources 2006). Cattle, sheep, goats, camels, domestic poultry, ducks, geese, rabbits, donkeys, and horses are among the animals raised in this region. One of the main and largest cattle markets in the Kano Zone Senatorial District is Dambatta Market. Every Sunday of the week, the market is open.

### Sampling Techniques

For this study, multistage sampling procedures were used. In the first stage, purposive sampling was used, and Dambatta market was chosen based on the greatest number of sheep and other livestock buyers and traders among the local markets. The head of the livestock department (Sarkin Kara), who serves as the study's sample frame, provided the total number

of sheep purchasers at the market during the second stage. After gathering a total of 576, the Raosoft sample size calculator was run with a margin error of 10%, a confidence level of 95%, and a response distribution of 50%. The result was a total sample size of 83. Using convenience sampling procedures, a sample questionnaire was given to 83 sheep purchasers on the market.

### Data Collection

The researcher used trained enumerators to deliver a standardized questionnaire to sheep purchasers and merchants in the study region in order to gather data for this study. Socioeconomic characteristics of the respondents, such as gender, marital status, education level, occupation, monthly income, household size, etc., as well as characteristics of sheep that affect buyers' choices, such as height, weight, skin colors, breeds, skin condition, health condition, etc., are included in the collected data.

### Analytical Framework

Descriptive statistics are among the analytical approaches that were employed to accomplish the study's goals. The socioeconomic features of sheep purchasers were described using descriptive statistics including frequency distribution, percentage, mean, and standard deviation, which also indicated the qualities of indigenous sheep that sheep buyers in the research region took into consideration.

## Result and discussions

### Socio-economic Characteristics of Sheep Fatteners

The gender status of sheep purchasers in the study region was shown in Table 1 of the study, which showed that 22.90% of sheep buyers in the study area were female and the majority (77.10%) were male. This suggests that the majority of sheep buyers in the study area were men who were physically strong and able to engage in any yield earning activities in order to increase their profits and better their standard of living. According to the table, the majority of respondents (71.10%) were married, compared to 24.10% who were single, 2.40% who were divorced, and 2.40% who were widow or widower. This suggests that married people made up the bulk of sheep buyers at Dambatta market. The results suggest that most sheep purchasers in the Dambatta market are probably heads of households with family obligations, which may have an impact on their purchasing choices. This implies that the market's desire for sheep is directly related to their business goals of making more money to meet their family's wants and so resolve their issues. According to the table, 45.80% of sheep purchasers had formal education up to the university level, 22.90% had a secondary education certificate, 19.30% had a primary certificate, and 12.00% had no formal education at all. This implies that the majority of sheep purchasers in the research region were educated in one way or another. This conclusion has implications for the studied area. Higher educated sheep purchasers are thought to be more inventive and progressive than illiterate ones, and they may be better at considering, choosing, and negotiating sheep features when making purchases.

*Table 1. Qualitative Socio-economic Factors of Livestock Buyers*

Gender	Frequency	Percent
Male	64	77.10
Female	19	22.90
<b>Marital</b>	<b>Frequency</b>	<b>Percent</b>
Single	20	24.10
Married	59	71.10
Divorce	2	2.40
Widow	2	2.40
<b>Educational status</b>	<b>Frequency</b>	<b>Percent</b>
Primary	16	19.30
Secondary	19	22.90
Tertiary	38	45.80
Non-formal	10	12.00
<b>Occupation</b>	<b>Frequency</b>	<b>Percent</b>
Crop and livestock only	20	24.10
Livestock farming	9	10.80
Farming and trading	33	39.80
Farming and civil service	21	25.30
<b>Types of buyer</b>	<b>Frequency</b>	<b>Percent</b>
Farmer/fattener	36	43.40
Butcher and restaurant	26	31.30
Consumer	6	7.20
Middlemen	7	8.40
Sacrifice and ceremony	8	9.60
Total	83	100.00

Source: Field Survey Data, 2022

Based on the study, the majority of respondents (39.80%) had farming and commerce as their primary employment, followed by farming and government service (25.30%), crops and livestock (24.10%), and animal farming (10.80%). This suggests that farmers and government employees made up the majority of sheep customers at Dambatta Market. The results of this study imply that there is a significant local demand for sheep, driven by households with consistent financial resources, since the majority of sheep purchasers at Dambatta market are people with steady salaries, such as farmers and government employees. The table also reveals that the majority of purchasers (43.40%) were farmers or fatteners, followed by butchers and restaurant owners (31.30%), buyers of sheep for sacrifice and ritual (9.60%), intermediaries (8.40%), and home customers (7.20%). This suggests that butchers, farmers, and restaurant owners made up the majority of those who purchased sheep at the Dambatta market. The results suggest that the food service and livestock production industries, rather than individual customers, are the main drivers of sheep demand in the Dambatta market.

The age status of sheep buyers in the study area is shown in Table 2. According to the table, 50.60% of sheep buyers in the Dambatta market were between the ages of 31 and 40, 25.30% were between the ages of 41 and 50, 19.27% were between the ages of 25 and 30, and 4.82% were between the ages of 51 and 60. According to the survey, sheep purchasers in the Dambatta market ranged in age from 25 to 60, with an average age of 38 and a standard deviation of 7.39614. This indicates that the bulk of sheep buyers at the Dambatta market were between the ages of 38 on average. The average age of sheep buyers and merchants at Dambatta Livestock Market suggests that the traders have a degree of stability, maturity, and expertise that can result

in better business management, more stable market conditions, and more educated purchasing decisions. According to the table, the majority of sheep purchasers in the research region (46.98%) had a family size between six and ten, 45.78% had a family size between one and five, 6.02% had a family size between eleven and fifteen, and just 1.20% had a family size between sixteen and twenty.

The table also revealed that the average family size of the sheep purchasers in the survey was six, with a standard deviation of 3.37542, while the maximum family size was 19. This suggests that the average family size of the majority of sheep buyers in the research region is six. The average family size of sheep buyers and traders at Dambatta Livestock Market implies that the traders' business operations and purchasing decisions may be impacted by the needs and responsibilities of their families, which could have an effect on their trading strategies and inventory management. According to the table, the majority of sheep buyers (39.75%) have 7–12 years of marketing experience, 36.16% have 2–6 years, 12.04% have 19–24 years, 8.43% have 13–18 years, and only 3.61% have 25–30 years. Additionally, the survey found that sheep purchasers in the study region had an average marketing experience of 10 years, a minimum of 2 years, and a maximum of 30 years, with a standard deviation of 6.21266. This suggests that the majority of sheep purchasers in the Dambatta market had ten years of average marketing experience. When sheep buyers and traders at Dambatta Livestock Market have an average marketing experience, it means that they have gained enough knowledge, skills, and experience to negotiate prices, navigate the market successfully, and make wise decisions all of which help to make the market more competitive and efficient.

**Table 2: Quantitative Socioeconomic Factors of Livestock Buyers of Dambatta Livestock Market**

Variables	Frequency	Percentage
25-30	16	19.27
31-40	42	50.60
41-50	21	25.30
51-60	4	4.82
Mean	38.1687	
Minimum	25.00	
Maximum	60.00	
Std. dev.	7.39614	
Household size		
1-5	38	45.78
6-10	39	46.98
11-15	5	6.02
16-20	1	1.20
Mean	6.1446	
Minimum	1	
Maximum	19	

Std. dev.	3.37542	
Experience		
2-6	30	36.14
7-12	33	39.75
13-18	7	8.43
19-24	10	12.04
25-30	3	3.61
Mean	9.8434	
Minimum	2	
Maximum	30.00	
Std. dev.	6.21266	

Source: Field Survey Data, 2022

The monthly revenue of sheep purchasers in the study area was shown in Table 3 of the study. According to the table, 33.73% of sheep buyers make between ₦41000-₦60000 per month, 32.53% make between ₦21000 - ₦40000 per month, 22.89% make between ₦61000-₦80000 per month, 8.43% make between ₦1000-₦10,000 per month, and only 2.41% make between ₦81, 000-100,000 per month. The table also showed that the average monthly income of sheep purchasers in the research region was ₦48, 651.00 with a standard deviation of 20135.17353, while the greatest monthly income was ₦100, 000 and the lowest was ₦7,000. This suggests that the average monthly income of the majority of property purchasers in the research area is ₦48, 651.00. The average monthly income of sheep buyers and traders at Dambatta Livestock Market implies that the traders have a reasonably stable financial base, allowing them to buy sheep on a regular basis, absorb market swings, and possibly invest in their businesses, all of which contribute to the stability and expansion of the market as a whole.

On the basis of the survey, 57.83% of sheep purchasers buy one to seven sheep at a time, 30.12% buy eight to fourteen sheep at a time, 10.84% buy fifteen to twenty-one sheep at a time, and just 1.20% buy twenty-nine to thirty-five sheep at a time. The table showed that customers had purchased a minimum of two sheep, a maximum of thirty-five sheep, an average of eight sheep, and a standard deviation of 5.31414. This indicates that the average number of sheep purchased

by sheep purchasers in the research region is eight. The average number of sheep (8) bought by buyers/traders at Dambatta Livestock Market suggests that the traders are probably working on a small to medium scale, with moderate demand and possibly limited market reach. This could have an impact on pricing, supply chain efficiency, and market dynamics.

#### Major Traits considered by traders when buying sheep in the study area

The findings in Table 3 showed the current indigenous qualities that are favored and taken into account when buying sheep in the research region. The findings indicate that the majority of sheep buyers (75.90%) preferred and considered the breed of sheep before purchasing, which ranked first; 69.87% considered the sheep's body condition before purchasing, which ranked second; 57.83% of the buyers considered the sheep's size (weight), which ranked third; 50.60% of the buyers considered the sheep's healthy condition, which ranked fourth; and the sheep's age, which ranked fifth. Other indigenous characteristics that the buyers in the study area. This points to there are characteristics that sheep buyers in the research region look for in sheep. The results imply that current breed characteristics, body condition, size, and age are important factors that determine market value and purchase decisions, assisting sheep purchasers at Dambatta Livestock Market in making well-informed judgments. This will assist the purchasers in raising their profit margin.

Table 3. Major Traits considered by traders when buying sheep in the study area

Traits	Frequency	Percent	Ranking
Size of the sheep (weight)	48	57.83	3 <sup>rd</sup>
Nutrition condition	03	3.61	8 <sup>th</sup>
Height	7	8.43	7 <sup>th</sup>
Healthy condition	42	50.60	4 <sup>th</sup>
Coat colour	21	25.30	6 <sup>th</sup>
Breed	63	75.90	1 <sup>st</sup>
Body condition	58	69.87	2 <sup>nd</sup>
Age of the sheep	31	37.34	5 <sup>th</sup>

Source: Field Survey Data, 2021

## Summary and Conclusion

Based on the findings of the study, it was concluded that breeds, physical body condition, size, healthy condition, and age were the existed traits that majority of the sheep buyers consider when purchase of sheep in Dambatta livestock market. Therefore, the study recommended that

1. Sheep with desirable breeds and good body condition and conditions got an additional premium price as compared to poor breed sheep with poor body conditions. As a result, sheep producers and other concerned bodies should target the provision of good sheep breed and improvement of sheep body condition by application of proper sheep production technologies, selection of appropriate breeding rams, increasing the availability of feeds and feeding practice adjustment.
2. Government and non-governmental organizations as well as stakeholders must collaborate to enhance market accessibility and seasonal data accessibility, as these factors significantly influence the marketing strategies of smallholder farmers.
3. The development of market infrastructure that significantly reduces the adverse effects of asymmetric information will potentially increase farmers' share of market benefits.
4. Research institutions, livestock offices/departments, livestock marketers, fatteners, and stakeholders should focus on the improvement of these identified attributes that affect mostly the price of sheep at the market level.

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