



ANALYSIS OF PRICE FACTORS AMONG CATTLE MARKET PARTICIPANTS IN ADAMAWA STATE, NIGERIA

¹Mohammed Ibrahim Girei, ²Josephine Bosede Ayoola,

²Godwin A. Abu and ³Sani, M. H.

¹Department of Agricultural Education, Federal College of Education, Yola, Adamawa State, Nigeria

²Department of Agricultural Economics, Federal University of Agriculture, Makurdi, Benue State, Nigeria

³Department of Agricultural Economics and Extension, Faculty of Agriculture and Agricultural Technology, Abubakar Tafawa Balewa University, Bauchi, Nigeria

Corresponding Authors' E-mail: migirei@yahoo.com Tel: +2348069153671

ABSTRACT

The study examined the factors influencing cattle price among the cattle market participants in Adamawa State, Nigeria using a multistage sampling procedure. To achieve this objective, structured questionnaire were used to collect data from 400 respondents. The data were analyzed using Price Formation Strategy Index (PFSI). The result showed that health conditions of the animal were the prominent price-factor considered by the marketers with PFSI 1404. This was followed by body weight, mode of payment, sex of the animal while colour of the animal was the least factor with PFSI of 1035. Recommendations were made such as provision of adequate veterinary service by the Government so that to improve cattle marketing activities and hence, facilitate economic growth in the area and provision of standard cattle market, will help in reducing the issue of haggling and facilitate cattle marketing system in the area.

Keywords: Categories, Cattle, Factors, Farmers, Price, Participation.

INTRODUCTION

Agricultural sector plays a significant role in terms of economic development of a country. However, it has already made a significant contribution to the economic well-being of developed countries and its role in the economic development of third world countries like Nigeria is an important issue in term of human, social and economic growth.

In spite the tremendous agricultural potentiality, in Nigeria, the rural dwellers constitute the majority of the population and produce about 90% of the food supply in the country, and majority of these farmers are small scale producers (Gani and Adeoti, 2011). To this end, increased integration of these small holder farmers into markets at local, regional and national levels becomes an issue of paramount significance. Many policy makers and development economists have placed more emphasis on the role of marketing in agricultural and economic development. In developing countries, livestock sector contributes more than 30% to the Agricultural Gross Domestic Product (AGDP), and about 40% of the global GDP and serves as the fastest growing agricultural market, a major contributor to food and as well as serving as an vital source of employment for almost 1 billion poor people in unindustrialized countries Like Nigeria, (Swanepoel *et al.*, 2010). However, there is rapid growth in demand for livestock and livestock products in developing countries, which is viewed as a 'food revolution'. Livestock products are costly in relation to the provision of stable foods. However, developing countries' consumption levels are still low but increases with rising incomes. Growth in consumption is at the expense of increasing net imports of all livestock products. Increased



production and higher self-sufficiency would save foreign exchange. Livestock also contributes immensely to rural livelihoods and poverty reduction among farmers (Martin, 2014). The livestock sector in Somali accounts for 40% of the gross domestic product (GDP) and 80% of foreign exchange earnings (Wanyoike *et al.*, 2015). While in Nigeria, livestock production contributes only about 5% of GDP, whereas agriculture sector as a whole contributes 35% of GDP (Bernard *et al.*, 2011).

The livestock market develops the use of specialized skills and technologies increases, as well as market integration. Hence market integration among farmers can reduce the risks that occur from price instability, the larger firms that result from integration can raise their capital for improved plant and productivity of the sector (Food and Agriculture Organization, 2013). Agricultural marketing plays a significant role in the development of Agricultural and industrial sectors in both developed and developing countries of the world. Egbetokun and Omonona (2012) stressed that, agricultural food marketing is the major determinant of agricultural growth and contributes to the overall development. Marketing is an important aspect of any livestock system. It provides the mechanism whereby producers exchange their livestock and livestock products for cash. The cash is then used for possessing other goods and services in order to satisfy pressing demand ranging from food items, clothing, medication, schooling, purchase of production inputs and supplies and other family needs. However, the relevance of marketing in agricultural and economic development has been emphasized by many development economists and policy makers (Egbetokun and Omonona, 2012).

Agriculture plays a significant role in terms of employment generation and economic development especially in developing countries like Nigeria. Some features of Agricultural products like perishability and seasonality necessitate the need for effective and efficient marketing system, as well as effective technological advancement for processing and ensuring the availability of goods throughout the year. However, price is an important factor in any marketing system. Against this background the paper explains how certain explanatory variables influence cattle marketing system in Nigeria. The objective of the study was to analyze factors influencing cattle prices in Adamawa, North Eastern Nigeria.

MATERIALS AND METHODS

Sample and sampling techniques

A Multi-stage, random sampling and purposive sampling techniques were employed in the selection of the respondents. In the first stage, two Local Government Areas (LGAs) were purposively selected from each zone of the four zones of Adamawa State Agricultural Development Programme (ADADP). The selection was based on their relative importance in cattle farming. In the second stage, twenty-six (26) districts were randomly selected from forty five (45) districts in the eight (8) selected LGAs proportionately using equation 1. The third stage, involves the random selection of 400 cattle farmers proportionately from the selected districts. Information on the sampling frame was obtained from the Ministry of Livestock Productivity and Nomadic Settlement, Yola. The selection of the four hundred respondents was based on the proportionality factor presented in equation 1, as adopted from Giroh *et al.* (2012).

$$S = r/R \times N/1 \quad \dots(1)$$

where;

S = total number of respondents sampled in each district; r = number of cattle farmers in a particular district; R = Total number of farmers in all the selected districts; N = Sample size



Data analytical techniques

The Price Formation Strategic Index (PFSI) was used to identify factors that are significant in cattle price formation while descriptive statistics was used to analysed the categories of participation.

The factors considered in determining the prices of cattle by the different market participants were identified using a Price Formation Strategy Index (PFSI). PFSI was used to identify factors that are considered important; PFSI 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. These values signify very important, important, slightly important and not important respectively. The formula used to obtain the PFSI score was adopted by (Mafimisebi *et al.*, 2013).

The formula is given as:

$$PFSI = N_4X_4 + N_3X_3 + N_2X_2 + N_1X_1 \quad \dots(2)$$

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.

X_1 = factor as not important with a score of 1.

X_2 = factor as slightly important with a score of 2.

X_3 = factor as important with a score of 3.

X_4 = factor as very important with a score of 4.

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.

$$\text{The Mean PFSI} = \sum xi/n \quad \dots(3)$$

where; xi is the sum of all the rank factors multiplied by its weight divide by the total number of observation (n). And the mean score is given as; $X/n = 4+3+2+1/4 = 2.5$ (The sum of all the scores in a list divided by the number of scores in that list).

RESULTS AND DISCUSSION

Factors influencing cattle price

In this study, 13 different factors were prominent among the factors identified by both cattle sellers and buyers. The ranking for each of these factors in cattle price formation was presented in Table 1. The result indicates that health condition is the most prominent factor often considered by the cattle marketers in the study area with PFSI value 1404. This is consistent with the findings reported in Mafimisebi *et al.* (2013) who observed that the health condition of cattle is one of the common factors considered by marketers in Southwest Nigeria. Body weight is the next among the factors often considered by the cattle marketers in the study area with PFSI 1330 (ranked 2nd). This was followed by mode of payment with PFSI value 1283 (ranked 3rd). The fourth ranked factor, with PFSI 1195, was sex of the cattle which was also indicated as one of the considered factors in cattle pricing in the study area. Meanwhile, category of buyers was ranked 5th among factors that can influence pricing.

Similarly, factors such as festivals or social occasions and the places where sales take place are ranked 6th and 7th, respectively. This finding concurs with that of Adugna (2016) which revealed that price of cattle increases with health condition, body weight, age and grade



of the cattle among others. The periods of sales and place of sales stood as half-way factors that influence the pricing of cattle. This finding replicated the finding reported in Mubi *et al.* (2013) which revealed that during major festivities in many parts of the country, the prices and demand for cattle rises. However, whenever there is oversaturation of cattle supply in the market, the prices tend to drop. The least factor considered in determining price formation is colour of cattle with a PFSI of 1035. This indicates that to some extent, the color of cattle do influence the pricing strategies. Similarly, this finding is in conformity with the findings of Mafimisebi *et al.* (2013) who reported that colour is the least factor in cattle price formation in Southwest, Nigeria.

Table 1: Factors Influencing Cattle Price in the Market

Factors	VI (4)	I (3)	SI (2)	NI (1)	*PFSI	Rank	Mean	Remark
Age of cattle	160	135	31	37	1144	8	3.2	Important
Body weight	265	75	21	1	1330	2	3.7	Very Important
Breed	125	145	74	19	1102	11	3.0	Important
Category of buyers	159	149	49	6	1187	5	3.3	Important
Category of sellers	134	151	61	17	1128	9	3.1	Important
Colour	103	139	85	36	1035	13	2.9	Slightly Important
Festivals/ occasions	193	98	43	29	1181	6	3.3	Important
Health condition	326	26	11	0	1404	1	3.9	Very Important
Mode of payment (cash/ credit)	232	100	24	7	1283	3	3.5	Very Important
Place of sale (market/ farm gate)	152	148	53	10	1168	7	3.2	Important
Prevailing market level of demand and supply	113	164	77	9	1107	10	3.0	Important
Season (dry/ rainy)	126	132	87	18	1092	12	3.0	Important
Sex of cattle	177	132	37	17	1195	4	3.3	Important

Note: *PFSI = Price Formation Strategy Index; VI = Very important; I = Important; SI = slightly important; NI = not important. The mean score is 3.0 (Remark less than 2.5 is not important, 2.5 – 2.9 is slightly important. 3.0- 3.4 is important and 3.5 and above is very important).

Source: Field survey, 2016



CONCLUSION AND RECOMMENDATIONS

The study concludes that the health condition of the animal is the most common factor often considered by the cattle marketers in the study area, closely followed by the body weight and mode of payment (credit or cash) and the sex of the cattle. The least factor considered in determining price formation is colour of the animal. The following policy recommendations based on the findings of the study were made: Government should provide more veterinary units in cattle farming communities is important as the market participants in the study area ranked health condition of animal as the major factor in price formation. There is a need to establish a standard cattle market in the area, so that to facilitate the cattle marketing system, as the market participants ranked body weight as one of the major factor of cattle price in the area.

REFERENCES

- Adugna, T. (2016). *Determinants of Market Prices of Cattle in Eastern Ethiopia*. A Contributed paper presented at the International Association of Agricultural Economists Conference, Gold Coast, Australia, August 12-18, 2006, Pp1-15
- Bernard, C., Bennet, B. and Gulbert, B. (2011). *Demand for Farm Animal products in Nigeria: an opportunity for sahel countries*. Ministry of livestock and animal resources, funded by the European Union. Special document. Available on www.inter-reseaux.org/img/pdf/p14-15_animal.pdf. Assessed on 9th, feb, 2015.
- Egbetokun, O. A. and Omonona, B. T. (2012). Determinants of Farmers' Participation in Food Market. *Global Journal of Science Frontier Research Agriculture and Veterinary Sciences*, 12(9): 24-30.
- FAO (2013). *Animal Feed Resources for Small-scale Livestock Producers, Marketing and its Role in Economic Development*. Available on: <http://www.fao.org/wairdocs/ilri/x5547e/x5547e18.htm>. Assessed on 14, Feb., 2015.
- Gani, B. S. and Adeoti, A. I. (2011). Analysis of Market Participation and Rural Poverty among Farmers in Northern Part of Taraba State, Nigeria, *Journal of Economics Kamla-raaj, New Delhi, India*. 2(1): 23-36.
- Giroh, D. Y., Adebayo, E. F. and Jongur, A. A. U. (2012). *Efficiency of Latex Production in Rubber Plantations in Edo and Delta States, Nigeria*. www.usa-journals.com, <http://www.usa-journals.com/wp-content/uploads/2012/11/Giroh.pdf>. Assessed on: 10th, may, 2015.
- Mafimisebi, T. E, Bobola, O. M. and Mafimisebi. O. E. (2013). *Fundamentals of Cattle Marketing in Southwest, Nigeria: Analyzing Market Intermediaries, Price Formation and Yield Performance*. 4th International conference of the African associations of agricultural economics, at Hammamet Tunisia. Available on; <http://ageconsearch.umn.edu/bitstream/161462/2/fundamentals>. Assessed on 13th, Feb, 2016.
- Martin, U. (2014). *The Role of Livestock in Economic Development and Poverty Reduction*. A living from livestock, pro-poor living policy initiatives. <http://www.fao.org/ag/pplp.html>. Assessed on: 4th, march, 2015.
- Swanepoel, F. Stroebel, A. and Moyo, S. (2010). *The Role of Livestock in Developing Communities: Enhancing Multifunctionality*. Publishers Centre for Agricultural and Rural Cooperation, South Africa. 213pp.
- Wanyoike, F., Mtimet, N., Ndiwa, N., Marshall, K., Godiah, L. and Warsame, A. (2015). Knowledge of Livestock Grading and Market Participation among Small Ruminant Producers in Northern Somalia. *East African Agricultural and Forestry Journal*, 81(1): 64-70. Available on: <http://dx.doi.org/>. assessed on 14th, Nov., 2015.