

# Economics of Cattle Marketing In Mubi Area of Adamawa State, Nigeria

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**Abstract**— The study assessed the performance of cattle marketers in the study area. Simple random sampling procedure was used to select 80 respondents from the target population. Structured questionnaire with scheduled interviews was used to collect the economic data used for the analysis. The study used combination of descriptive statistics, budgetary technique and Gini coefficient to achieve the objectives. Analysis of the data revealed that all of the respondents were males, of whom the mean age was 40years, 62.5% were married with 55% having attended one level of formal education or the other. 62% have 6 – 20 years as experience with 12years as their mean. More so 70% had 6 – 10 members in their household and about 8 members as the average number per household. Majority (68.73%) obtained their capital from personal savings, 50% got market information from business associates. Analysis of the net gross margin gave ₦106,773,204.89, ₦67,441,654 and ₦45,585,687.09 for large, medium and small scale marketers respectively. The medium marketers were more efficient than the other categories of the marketers, a high Gini coefficient ratio of 0.8863 was recorded which implies that inequality exist among the cattle marketers. Challenges of the marketers include among others inadequate capital, high transportation cost of conveying the live animals to far distance markets, theft, insecurity, price fluctuation, deplorable road among others. The study recommended establishment of meat processing plants in the area for efficient marketing, improvement in the road infrastructure to ease the transport problem and security improvement on the cattle market.

**Index Terms**— cattle marketers, profitability, socio-economics, concentration, constraints.

## I. BACKGROUND OF THE STUDY

Nigeria is one of the leading countries in cattle production in sub Saharan Africa (Ikpi, 1990), with the livestock production index at 3.35% per annum World Data Atlas (WDA, 2016). Abbas (2001) observed that about one third of Nigeria's agricultural domestic products account for livestock products. According to Dafwang et al. (2001) beef provide essential nutrients such as vitamins, thiamine, riboflavin and manic. Others are potassium, sodium, iron, and zinc, which are necessary for growth, body repairs, energy and development. The Nigerian cattle population has been estimated to be 15.3 million milking cows and 13.26 million beef cattle, Tibi and Aphunu, 2010). Despite these high potentials endowed in the country, Abiodun (2001) affirmed that protein intake is still low because the FAO's recommended animal protein per person per day is 35g while

the intake in Nigeria range from 6 – 8.44g/head/day. Less than 1% of the cattle production in Nigeria is managed commercially, majority of the cattle owners practice the traditional management system (Tipi and Aphunu, 2010). This traditional management has reduced the commercialization of the production and marketing of cattle and cattle related products noting that the sector is imperative in employment and income generating livelihood activities for millions of Nigerians, ( Umar, 2005; Mafimisebi and Okumadewa, 2006).

Consequently, the outcome of the enhanced production and marketing of cattle and its product carry the potentials to better the income and nutritional status of household and positively improve their living standard. Efficient marketing plays an important requirement in the attempt to achieve wider accessibility and affordability of any product to consumers who are resident in southern Nigeria (Dalgado et al., 1999). 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 there are shortages (consumption/sink markets), known as arbitraging, needs to be fully understood to enhance the efficient working of cattle markets. This is important in achieving sustainable and profitable agricultural commercialization in the livestock sub-sector in Nigeria ( mafimisebi, 2012)

Marketing is an economic activity that 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 later gets it at an affordable price which stimulates continued consumption (Umar, 2005; Mafismisebi, 2012).Marketing is the process by which a product or service originates and is then priced, promoted, and distributed to consumers. Marketing concentrates primarily on the buyers, or consumers. After determining the customer's needs and desires, markets develop strategies that are designed to educate customers about a product's most important features, persuade them to buy it, and then to enhance their satisfaction with the purchase (Nwanwa *et al.*, 2014).

Cattle marketing is an important economic activity in Adamawa State and particularly Mubi Area. It is a common venture in all the districts within and outside the local government area with Tuesdays as designated days for cattle market. Many people who participate in the marketing activities depend on it as source of income to sustain their livelihood, (makusa, *et al.*, 2012).The cattle market consists of farmsteads, village markets and urban/distant markets, at the farmstead level, the farmers and Fulani herdsmen sell

their cattle to consumers or itinerant traders known as ‘yangurdu’ who go to the farmsteads to buy a few animals for resale in the village markets. At the village markets, sales of cattle are done through commissioned agents. Three types of traders are involved at this level. The first category collects the cattle from the owners at agreed prices and later payback to the farmers after sale. This group is known as the ‘yan sari yakamba’. The second category is those buyers who buy many cattle from a number of village markets and then take them to urban and distant markets. There are a number of resident commissioned agents in the cattle markets who serve as witnesses to transactions and guarantee that animals being sold are not stolen animals. Hence many buyers and sellers make use of the commissioned agent who have good knowledge of cattle business and use their experience to make high profit from the business when especially transported to the southern part of Nigeria, (NAPRI, 2002).

However, profitable cattle marketing means rising cattle through the most economic means, selling through the most profitable market outlet and pricing at the most profitable time (Adamu, 2010). Cattle as a good source of animal protein are sold for their products such as meat, skin, and cheese among other purposes. Owing to the low level of animal protein consumption in Nigeria at present and the expected demand in the future, cattle are considered to provide nutritionally superior food output has to be substantially increased in order to ensure adequate supply of protein to the growing population. The uses of cattle such as transportation, cultivation and manure which can improve yield, and other by-products such as for manufacturing of clothes, shoes, formulation of fish and poultry feeds, leather and containers are enormous, (Kotler, 2003).

Adamawa State is noted for cattle production and marketing which provide income to different classes of people in the state. According to Girei et al. (2013), Adamawa state alone account for about 2.5million heads of cattle produced in Nigeria. But in spite the high level of cattle production, the marketing activities in the state especially Mubi area is less developed. The area lack meat processing plants, therefore, live animals have to be transported in tucks for 3-4 days before they reach densely populated areas either in the south west, south-south or southeast Nigeria. Sometimes the trucks may involve in accident which may lead to death of some or even all of the animals on transit, sometimes it could be cattle rustling or betrayal of trust popularly known as “419” are among other issues confronting the industry. It is against this background that this study has attempt to;

- (i) describe the socio economic characteristics of the cattle marketers;
- (ii) determine the profitability of cattle marketers;
- (iii) determine the market concentration of the cattle marketers;
- (iv) determine the level of efficiency of cattle marketers and
- (v) describe the constraints militating against cattle marketing in the study area.

## II. RESEARCH METHODOLOGY

Mubi Area of Adamawa state is located on latitude 11°51'N and longitude 13°51'E. it has an altitude of 696 meters above sea level with an annual mean rainfall of 1,220mm and a mean temperature of 15.2°C during harmattan periods from November to February and 39.7 °C in April (Adebayo and Tukur,1999). The town is essentially a mountainous landscape transverse by river yedzaram and many tributaries, Mandara and Adamawa Mountains formed part of this undulating Landscape (Mansir, 2006). The area has many tribes among which are Gude, Fali, Higgi, Margi, Hoba, Fulani, Hausa to mention a few. The area has lot of pasture land, as such it formed an important breeding ground for cattle and hence the formation of one of the largest cattle market in the state. Mubi International cattle market which is situated in Mubi south Local government area is one of the largest cattle markets in the state. The market as such, formed an area of contacts with cattle marketers which has enhanced the development of more economic activities in the local government, cash crops like groundnut and beans are grown while crops like rice, maize and sorghum are equally grown as food crops. Along river yedzeram and many of its tributaries, a lot of vegetable gardening in dry season are practiced. Fishing is also undertaken in the riverine areas. The major occupation of the people in the area is farming and marketing. The predominant breeds of cattle in Adamawa state are; Adamawa Gudali, Sokoto Gudali and White Fulani are the common marketed in the study area, even though, others like Ambala, Red Sokoto and Red Fulani are can also be found in the area (Mubi *et al.*, 2012).

### Sampling Technique

Simple random sampling technique was used to select respondents. A preliminary market survey was conducted at the cattle market where the marketers were identified. A list containing all the names of the cattle traders were made available and based on the results from the survey they were classified into three categories (large, medium and small scale marketers). A total of 80 cattle marketers were used for the study (that is 30, 21 and 29 for large medium and small scale marketers respectively).

### Sample Technique

Descriptive statistics (frequency distributions, mean and percentages) was used to describe the socio-economic characteristics marketing efficiency and problems associated with cattle marketing, this was used to achieve objectives I, iv and v. Budgeting technique was used to determine the cost and the return from cattle marketing, that is the gross margin analysis. Also Gini coefficient was employed to estimate the market concentration of the respondents.

### Gross Margin Analysis

Gross margin analysis was used to estimate the cost and returns of cattle marketing. Following Olukosi *et al.* (2007) defined gross margin is the difference between the total gross farm income (GR) and the total variable cost (TVC). Net profit margin (NPM) was also estimated. This was used to achieve objective II. It is thus expressed as follows: -

$$GM = TR - TVC \dots\dots\dots(i)$$

Where:

GM = Gross Margin

TR = Total Revenue

TVC = Total Variable Costs.

**Net Profit Margin Analysis**

$$NPM = \frac{TR - TC}{TC} \quad (TC = TFC + TVC) \dots\dots\dots(ii)$$

NPM = Net Profit Margin

TR = Total revenue

TC = Total Cost

TFC = Total Fixed Cost

TVC = Total Variable Cost

**Marketing efficiency (ME)**

$$ME = \frac{Vam}{CM} \dots\dots\dots (iv)$$

Where :

ME = Marketing efficiency

Vam = Value added by marketing

CM = Cost of marketing

**Gini coefficient:**

Gini coefficient (GC) which sometimes can be referred to as Gini index or Gini ratio is a measure of statistical dispersion intended to represent income or wealth distribution of a group or nation resident, (Wikipedia,2020). It can therefore be used in measurement of inequality among traders through the use of periodic sales as index measurement of market share, (Opeke and Ellah, 2017). Opeke and Ellah (2017) express it mathematically as:

$$GC = 1 - \frac{\sum XY}{\dots\dots\dots} \dots\dots\dots(v)$$

Where:

G = Gini coefficient

X = Proportions of cattle marketers

Y = Cumulative proportion of cattle marketers earnings

$\sum$  = Summation sign

The values of Gini coefficient range from 0 to 1. A Gini coefficient of 0 expresses perfect equality where everybody has the same income share while Gini coefficient of one indicate maximal inequality among values. The higher the value of the Gini Coefficient, the higher the level of concentration and consequently the more imperfect the market structure and vice versa, and this was used to achieve objective (iii).

**Socio-economic Characteristics of the Cattle Marketers**

Age has been considered to be vital among the tools used for assessing individual performance, according to Oseni (2011), productivity declines with increasing age. Table 1 shows that the mean age of the cattle marketers was 40 years

which implies that most of the marketers are in their active age capable of rigorous activities involved in cattle marketing. About 77.5% of the marketers were between 18 to 49 years while 22.5% were either 50 years or above. Analysis of gender of the respondents showed that all (100%) of the marketers were males. The dominance of the male marketers may not be unconnected with the peculiarity of the study area to tradition, culture and believes of the people which restricts the female gender to participate in certain activities. This findings corroborate with the works of Mubiet *al.* (2012) who observed that there was none participation of women in cattle marketing in the same area. The marital status of the marketers unveiled that 62.5% were married and 36.25% were single. According to Murtala (2013) married people may tend to utilize their resources more judiciously in order to meet up with the demand of their dependents.

The educational status of the marketers revealed that 18.75% did not attend any form of formal education, and even those that attended the formal education, most of them (61.25%) were either at primary or secondary level. About 20% attended higher level of education, according to Ndanitsa (2008) education is a critical factor in human output because it guarantee objective utilization of innovations and technology available to improve on skills .Experience is another similar factor to education the more the marketers have it the better their performance. Table 1 shows that the cattle marketers had 12 years as a mean experience in the business. About 35% had 6 – 10 years’ experience while 12.5% had 21 years and above as experience, Mafimisebi and Okunmadewa (2006) stressed that experience is a basis for success and progress in business. There were eight members recorded as a mean size of household of the marketer. The implication of this is that the household heads have more mouth to feed and other social responsibilities especially if most of the members are just house wives and children. Despite the high capital required for the business results shows that majority (68.75%) of the respondents were dependent on personal savings as source of income for the business about 5% obtained their funds from commercial bank. Further, 50% of the respondents depend on business associates for market information, some 27.5% reported that market information was obtained from colleagues, 6.25% sourced their own through radio and 16.25% from other sources of market information.



**Table 1: Socio-economic Characteristics of Cattle Marketers in the Study Area**

Variable	Frequency	Percentage
<b>Age</b>		
18-29	08	10
30-39	32	40
40-49	18	27.5
50 and above	22	22.5
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Gender</b>		
Male	80	100
Female	-	--
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Marital status</b>		
Married	50	62.5
Single	29	36.25
Divorced	01	1.25
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Education statuses</b>		
Primary education	15	18.75
Secondary education	34	42.5
Tertiary education	15	18.75
Non formal education	16	20
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Years of experience</b>		
1-5	20	25
6 – 10	28	35
11 – 15	10	12.5
16 – 20	12	15
21 and above	10	12.5
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Household size</b>		
1 – 5	10	12.5
6 – 10	56	70
11 – 15	10	12.5
16 – 20	04	5.0
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Source of capital</b>		
Personal savings	55	68.75
Friends and relatives	09	11.25
Commercial banks	06	7.5
Cooperative societies	10	12.5
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Source of market information</b>		
Business associates	40	50
Radio	05	6.25
Middlemen	22	27.5
Others	13	16.25
<b>Total</b>	<b>80</b>	<b>100</b>

Field survey, 2016

**Cost and Returns for Cattle Marketers in Study Area.**

Table 2 present the results of costs and returns obtained by the three categories of marketers (large, medium and small scale). The gross margin obtained by the large, medium and

small scale marketers were ₦106,794,440; ₦67,455,000 and ₦45,594,000 respectively. Further the results showed a net profit of ₦106,773,204.89; ₦67,441,654 and ₦45,585,678.09 for large, medium and small scale marketers

respectively. Even though the business requires large capital it is also obvious that it is a profitable venture. The great variation in the volume of the profit indirectly associated with the volume of money invested into the business within the period under the study, however, the medium scale marketers

appears to make more profit per head than the other two categories. This work is similar with the report of Girei (2013) carried out in the central zone of Adamawa state Nigeria.

Table 2: Cost and Returns for Large, Medium and Small Scale Cattle Marketers Traded/week

Marketing Variables	Large Scale ₦	Medium scale ₦	Small scale ₦
<b>A. Variable costs</b>			
Average cattle traded/week	3568	2200	2100
Cost of buying Cattle	463,480,000	220,000,000	189,000,000
Cost of transportation	23,192,000	14,300,000	10,500,000
Taxation	713,600	440,000.	420,000.00
Commission	7,136,000	4,400,000.	4,200,000
Cost of stall	3,568,000	220,000.	210,000
Handling cost	1,784,000	880,000.	1,050,000
Cost of feeds	356,800	220,000.	210,000
Herding	178,400	115,000.	105,000
Others	2,675,000	1,075,000.	1,025,000
<b>Total variable costs(TVC)</b>	<b>499,765,560</b>	<b>240,545,000</b>	<b>206,405,000</b>
<b>B. Returns</b>			
Total Revenue	606,560,000	308,000,000	252,000,000
<b>Gross margin (GM)</b>	<b>106, 8794,440</b>	<b>67,455,000</b>	<b>45,595,000</b>
<b>B.Fixed cost</b>			
Depreciation on fixed asset	21,235.11	13,345.23	9,321.91
Total cost (TC)	499,786,795.11	240,558,345	206,414,321.91
<b>Net profit margin</b>	<b>106,773,204.89</b>	<b>67,441,644</b>	<b>45,585,678.09</b>
Average net profit/head	29,925.22	30,653.30	21,707.46

Field Survey 2016

1dollar = ₦389.51

**Efficiency of Cattle Marketers in the Study Area**

Efficiency is a measure of performance or achievement of maximum potential output from a given quantity of inputs that is achieving a goal with minimum or no wastage (Amaza and Olayemi 1999). Table 3 presented the efficiency of the marketers in the study area. The result which showed medium

scale marketers as the most (358%) efficient among the three categories. This implies that the medium scale cattle marketers utilize their resource more efficiently than the other classes. Dodo and Umar (2015) reported similar findings among beef marketers in Katsina in northern Nigeria as (220% efficient).

Table 3: Marketing Efficiency of Cattle Marketers

Variables	Large Scale ₦	Medium scale ₦	Small scale ₦
Purchase price	463,480,000	220,000,000	189,000,000
Cost of marketing services	36,285,560	20,545,000	17,405,000
Selling price	606,560,000	308,000,000	252,000,000
Estimated value added	119,880,00	73,700,000	52,500,00
Marketing efficiency	3.303	3.58	3.016

Field Survey, 2016 1 dollar = ₦389.51

**Structure of Market Concentration Among Cattle Marketers**

Gini coefficient or Gini ratio is a measure of statistical dispersion intended to present the income or wealth distribution of a community commonly used in measurement of inequality. The ratio ranges from 1 to 0. A Gini coefficient of 0 implies a perfect equality among the community where everyone has the same income while Gini coefficient one expresses maximum inequality among the group. Analysis of Gini coefficient of cattle marketers in the study area showed a

ratio of 0.8863, this implies that higher income inequality exist among the cattle marketers since the higher the ratio the greater the income inequality and the lesser the ratio the moderate the competition with moderate inequality. The market structure provided relatively great income inequality among the marketers. This is almost contrary to the findings of Afolabi (2007) as cited by Okpeke and Ellah (2017) who reported a gini coefficient of 0.476892 in evaluation of beef marketers in Osun State.

**Table 4: Concentration of the Cattle Marketers in the Study Area.**

Total value of Weekly sales	% of total sales	Cum% of total sales	X	Y	XY
13,500,000	0.64	0.64	0.0350	0.0064	0.000224
68,000,000	3.24	3.84	0.1000	0.0321	0.003210
94,500,000	4.47	8.32	0.0875	0.0447	0.003911
108,000,000	5.10	13.42	0.0750	0.0510	0.003825
216,000,000	10.20	23.62	0.1235	0.1020	0.012597
289,300,000	13.66	37.28	0.1337	0.1366	0.0187825
403,000,000	19.03	56.30	0.1625	0.1903	0.0309237
322,000,000	15.20	71.50	0.1125	0.1520	0.017100
296,000,000	13.98	85.48	0.875	0.1398	0.010890
307,800,000	14.52	<b>100</b>	0.0750	0.1452	
<b>Total</b>	<b>100</b>				<b>0.1136985</b>

Field Survey, 2016

$$GC = 1 - EXY$$

$$\text{Therefore } 1 - 0.1136985 = 0.88630$$

**Constraints Associated With Cattle Marketers in the Study Area**

Analysis of constraints associated with Cattle marketing in the study area as presented in Table 4 showed that 15.43% of the marketers were constraint in the business for lack of funds. It has earlier been reported that 68.75% of the marketers depended on personal savings as capital base for the business. Similarly, Mafimisebi et al. (2013) reported 60% of cattle marketers in southwest Nigeria depend on their personal savings, in the same vein Hamidu (2014) affirmed

**Table 5: Constraints Associated With Cattle Marketing in The study Area**

Variable	Frequency	Percentage %	Rank
In-adequate Capital	50	15.43	1 <sup>st</sup>
Betrayal of trust	37	11.42	5 <sup>th</sup>
Cattle rustling	33	10.19	6 <sup>th</sup>
Transportation	49	15.12	2 <sup>nd</sup>
Insecurity	42	12.96	4 <sup>th</sup>
Price fluctuation	48	14.81	3 <sup>rd</sup>
High tax/revenue	33	10.18	7 <sup>th</sup>
Inadequate market information	32	09.88	8 <sup>th</sup>

Field survey, 2016

**III. CONCLUSION AND RECOMMENDATION**

Based on the findings of this work, it has been established that all the respondents were males in their productive age with more than half had one form of formal education or the other and most of them depended on personal saving to run their business. Cattle marketing is a profitable business venture in the study area as shown from the net profit margin of ₦106,773,204.89; ₦67,441,654 and ₦45,585,678.09 for

that lack of capital among cattle marketers in Gombe metropolis was a major problem. The transportation cost is another factor that accounted for 15.12% of marketers' problems due to bad roads and unaccounted charges collected from the truck drivers along the high ways as they convey the animals mostly to the southern part of the country. Musa et al. (2019) also stressed that transportation constitute 72% of cattle marketers in Mubi Area. The insecurity which constitute 12.96% is not a surprise as the area still have some challenges from militant groups. Others are Cattle rustling (10.19%) and betrayal of trust (11.42%), price fluctuation, high tax and inadequate market information being common challenges militating against the business in the study area.

large, medium and small scale marketers respectively, the result also revealed the medium marketers as being more efficient in their marketing transaction than the other categorie. The market structure has stiff competition as the Gini coefficient was high (0.8863) close to one which was a sign of market inequality, there was inequality in income distribution among the marketers which was a sign of imperfect competition. Major challenges experience among the marketers include inadequate capital, high cost of

transportation, price fluctuation, insecurity among others. The study recommended establishment of meat processing factory by NGOs and government in the study area to reduce the problems of conveying live animals and create more job opportunities to the community. Commercial banks should be willing to give the marketers loan facilities to facilitate the business. The federal and state governments also should give priority to road rehabilitation and reconstruction to facilitate ease conveyance of the animals to places of high Demand also the government to improve on the security situation of the area as the effect of the insurgency is still felt.

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