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ECONOMICS OF CATTLE FATTENING IN ADAMAWA STATE, NIGERIA: NEW FRONTIERS AND CRITICAL CHALLENGES

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ABSTRACT

This study uses data on cattle fattening from 370 cattle farmers in the six districts that constitute Mubi Metropolis of Adamawa State. The data was collected using a structured questionnaire. Data was analyzed using descriptive statistical tools (frequency, percentage, and mean) and inferential statistical tool (z-test). The findings indicate that cattle fattening is profitable and has a significant effect on the annual income of the farmers. Equally, the results show that cattle fattening had no effect on the rate of employment generation and that the major challenges facing cattle fattening in Mubi Metropolis were high cost of hired labour, untreated water supply, inadequate fund, high interest rate on loan, lack of collateral security, insufficient veterinary services, high cost of medication, high cost of feeds, and poor infrastructural development. Based on the findings, the study recommends that government should provide maximum security to aid cattle fattening, proper road network should be constructed for easy access to the market. More so, the cattle farmers should be encouraged to form cooperative for easy access to loan. It also recommends that he Ministry of Health should deploy veterinary doctors to Mubi to reduce the cost to medication and checkmate pest and diseases.

Keywords: Economic Analysis, Cattle Farmers, Cattle Fattening, Mubi Metropolis

INTRODUCTION

Cattle contribute about 10 percent of the Nigerian Livestock population in monetary terms while cattle production in monetary terms account for about 42 percent of livestock revenue in Nigeria (Mcintyere, 2012). Cattle fattening as a component of livestock management is an important as well as integral component of Agriculture. The livestock subsector contributes meaningfully to the Gross Domestic Product (GDP) of Nigeria (CBN 2011).

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

Cattle fattening is a process of feeding a special diet and supplements to some selected bull under semi/intensive systems (feedlots) to encourage rapid weight gain. It represents a significant component of the agricultural sector with great economic, income, poverty alleviation and social implications. There is an increased investment in cattle fattening business because of its profitability. Thus, cattle fattening has become an important business in Mubi Metropolis. Cattle fattening helps to meet the rising demand for high protein food in the country and plays a great role in; enhancing food security, household employment and income. It also provides investment opportunity, providing draught power and manure for sustainable agriculture and more so, it fulfills cultural roles in some areas (Maikasuwa et al, 2012). Its profitability and great sales (turnover) has resulted in increased involvement among farmers in Mubi Metropolis of Adamawa State.

Adamawa state and precisely Mubi Metropolis remains one of the centers of cattle rearing in Nigeria. Arising from the above, the area has over 14.73 million cattle consisting of 1.47 million milking cows and 13.26 million beef cattle (FAO, 2016). Some are managed commercially while others are managed traditionally. It follows from here that cattle fattening is viewed as an economically viable business while others maintain that it is not. The economic viability of cattle then becomes an issue of public worry as to the extent of profitability in recognition of the associated problems of multiplicity of intermediaries and stakeholders in the marketing chain. The implications of the activities of these intermediaries and stakeholders are capable of making cattle and its product inaccessible to the poor who are mostly on diets deficient in animal protein (Mafimsebi et al, 2013).

Inadequate feed supply and low genetic potentiality have been the basic problems associated with cattle fattening in Mubi Metropolis. Equally, increases in transaction cost and the upward trend in the prices of cattle and its product also constitute problems (Girei et al, 2013).

According to Cevger et al, (2003), the level of animal protein consumption in Nigeria is generally low and the national beef supply is both poor and critical. Therefore, cattle fattening has become very essential to address this problem.

Though livestock plays a great role in the traditional agriculture and largely subsistence economy, the sector contributes about 1.3 percent of the total sector as opined by Umar and Sidi (2012). Currently the sector is undergoing severe transformation fuelled by high demand for meat. The major forces behind these are the combination of population growth, urbanization and income growth, as stated by Food and Agriculture Organization (FAO, 2014).

Cow fattening therefore is associated with the preparation of cattle for marketing and for the similar reason as those engaged in other production processes, that is, profit maximization. Thus,

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

the economic viability of cattle fattening business is not doubtful as raw material for the business can be sourced from within. In addition, lack of encouragement by government, poor pricing policy, high cost of feed, high cost of medication, increased outbreak of diseases, ignorance of farmers, high cost of transportation, poor security as well as high cost of family labour are also problems affecting cattle fattening in Mubi Metropolis (Adamu, 2011).

Considering the importance of protein in our diet requirements and the increasing population growth rate, it's important to explore the economic potential of cattle fattening as a bridge in the supply chain. This research has been propelled by these issues and challenges.

OBJECTIVES OF THE STUDY

The broad objective of the study is to undertake an economic analysis of cattle fattening in Mubi Metropolis. Specifically, the study is designed to:

i. Find out the socio-economic characteristics of farmers involved in cattle fattening business.
ii. Determine the income effect of cattle fattening among farmers in the business.
iii. Determine the business growth (net-worth) effect of cattle fattening among respondent farmers.
iv. Determine the employment generation effect of cattle fattening in the study area.
v. Identify the challenges involved in cattle fattening business in the area.

HYPOTHESES

H_0:1 Cattle fattening has no significant effect on the income of cattle farmers in Mubi Metropolis.
H_0:2 Cattle fattening has no significant effect on the business growth (net-worth) of cattle farmers in the area.
H_0:3 Cattle fattening has no significant effect on employment generation of the cattle farmers in the area.

METHODOLOGY

Area of the Study

The study was carried out in Mubi Metropolis of Adamawa state, Nigeria. Mubi is located on Latitude 1105 N and Longitude 135 E. it has altitude of 696 meters above sea level with an annual mean rainfall of 1,220mm and a mean temperature of 15.200C (Tawa and Rege, 2014). Mubi has 25 districts out of which only six (6) were selected for the purpose of the study due to

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

their level of involvement in cattle production activities and proximity to Mubi International Market. The selected six districts are: Mubi town, Fali, Gude, Ba'a, Mayo-Bani and Mugulvu.

The main ethnic groups in the area are Hausa and Fulani. Other ethnic groups and tribes who are migrants are: Igbo, Yoruba, Idoma, Igala, Tiv, Efik, Ebira, Jukun, Nupe, Bini, Dakarkari and many other tribes of Nigeria.

Population of the Study

The population of the study is made up of all the cattle farmers of the six districts in Mubi Metropolis. The six districts are basically into beef fattening with a total number of 4,858 cattle farmers in which 4,525 are male and 333 are female as at August, 2016 (Wikipedia 2016).

Sample size and Sampling Techniques

In determining the sample size for the study, a simplified formula by Taro Yamene (1967) as stated thus: $n = \frac{N}{1+NM(e)^2}$ was used.

Given that the population of cattle farmers in the six districts in Mubi Metropolis is 4,858; the application of the formula gave a sample size of 370. A sample of 370 was selected through a random sampling procedure. For the purpose of allocation of sample stratum, the researcher adopted R. Kumaisons (1997) formula, as thus;

$$Nh = \frac{nNh}{N}$$

Through this, a fair representation of the sample size among the six districts in Mubi Metropolis was achieved.

Sources of Data and Description of Research Instrument

This study used primary and secondary sources of data which includes; questionnaire, textbooks, journals, newspapers, magazines and seminar papers. The questionnaire was based on closed ended and opened questions. In scoring the item in the questionnaire, respondents have possible options ranging from 1 – 5 which represented respondent's opinion. The questionnaire is divided into five sections (A-E). Section A describes the respondent's socio-economic characteristics; section B has to do with the income effect of cattle fattening; Section C has to do with the business growth (net-worth) of cattle fattening; Section D looks at employment generation effect of cattle fattening; while, Section E consists of items related to challenges involved in cattle fattening business in Mubi Metropolis.

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

Administration and Collection of Research Instruments

The direct delivery and retrieval method was employed in the administration of the instruments. Six persons from the six districts were employed to assist the researchers in the administration of the instruments. The six persons were constituted of members of cattle fattening associations in Mubi Metropolis district of Adamawa state. It took a period of one month to the retrieval of the questionnaire and out of 370 copies of questionnaires administered to the respondents, 356 were returned and used as sample for the study.

Method of Data Analysis

The study employed descriptive and inferential statistics to analyze the objectives and tests of hypotheses respectively. In analyzing the socio-economic characteristics of members, descriptive statistics such as frequency distribution, number, percentage and means were used. The specific objective five (5) was captured using four point Likert-scale measure. Thereafter, a threshold point of 2.50 was applied. Any challenge with a mean of 2.50 and above was considered agreed, while those below 2.50 point was considered disagreed. Z-test statistics was employed to test the significance of the null hypothesis respectively for the independent variables (X) on the dependent variables (Y) at the alpha level of 5% (0.05), in order to decide whether to accept or reject the null hypotheses (Ho_1, Ho_2 and Ho_3).

RESULTS AND DISCUSSION

Socio-economic characteristics of cattle farmers

Table 1: Distribution According to Socio-economic Characteristics of the Cattle Farmers

S/no	Items	Frequency (N=356)	Percentage (%)	Cumulative percentage	Mean (x)
1	AGE				
	20 – 29	43	12.03	12.03	
	30 – 39	56	15.73	27.81	
	40 – 49	137	38.48	66.29	
	50 – 59	98	27.53	93.82	
	60 - above	22	6.18	100	44.45
2	GENDER				
	Male	332	93.26	93.26	
	female	24	6.74	100	
3	MARITAL STATUS				

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

	Single	48	13.48	13.48	
	Married	274	76.97	90.45	
	Divorced	8	2,25	92.70	
	Widow	14	3.93	96.63	
	Widower	12	3.37	100	
4	LEVEL OF EDUCATION				
	Tertiary institution	64	17.98	17.98	
	Secondary institution	159	44.66	62.64	
	Primary institution	75	21.07	83.71	
	Non-formal	47	13.20	96.91	
	Adult education	11	3.09	100	
5	TYPE OF OCCUPATION				
	Cattle fattening/civil servants	125	35.11	35.11	
	Cattle fattening/trading	87	24.44	59.55	
	Cattle fattening/crop fatting	25	7.02	66.57	
	Cattle fattening	44	12.36	78.93	
	Cattle fattening/other business	75	21.07	100	
6	HOUSEHOLD SIZE				
	1 – 5	103	28.93	28.93	
	6 – 10	127	35.67	64.60	
	11 – 15	79	22.19	86.79	
	16 – 20	35	9.84	96.63	
	21 - above	12	3.57	100	9.15

Source: field survey; October 2016

Table 1 show that the mean value of respondents age 44.45 years. This result indicates that most respondents are of middle age. This confirms the work of Suleiman M, Isiaka M, Ishaku A (2013).

In the gender disposition of the respondent, majority (93.26%) of the respondents are male, while the females are in less (6.74%). These indicate that male folks participate more in cattle farming in Mubi Metropolis of Adamawa State. This finding is in line with the earlier studies by Sarma et al, (2014) that revealed that male folks were much more than female in cattle fattening business.

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

In marital status, 76.97% of the respondents are married, 13.48% of the respondents are single, while widow has 3.93%. This implies that most the respondents are married. Majority with a cumulative percentage of 83.71% (tertiary, secondary and primary school attainment) of the cattle fatteners are educated. This shows that the literate people are more involved in cattle fattening business.

In the case of type of occupation; civil servants that are involved in cattle fattening are 125 (35.11%) of the total respondent, followed by 24.44% of cattle farmers are into trading of other goods. Those that are engaged in other business constitute are 75 (21.07% of the total respondent). While 44 (12.36%) focused on just cattle fattening. And the remaining 25 (7.02%) are into cattle fattening and crop farming. These indicates that civil servant have more interest in cattle farming, and also that government can encourage cattle fattening farmers or those who are in other discipline but involved in cattle fattening activity to boost agricultural productivity.

The result as shown in table 1 shows that average household size of the respondents is nine (9). Household size determines the consumption needs of the households, family labour and to a certain extent the requirement for diversification in order to obtain more income for their livelihood.

Annual Income Effect of Cattle Farmers

Table 2: Distribution according to annual income of cattle farmers involved in fattening.

S/no	Range of Annual Income Growth (net-worth) ₦	Frequency (₦=356)	Percentage (%)	Cumulative Percentage	Means ($\bar{x}$)
1	Before				
	100 – 500,000	132	37.08	37.08	
	500,100 – 1,000,000	114	32.02	69.10	
	1,000,100 – 1,500,000	58	16.29	85.39	
	1,500,100 – 2,000,000	33	9.27	94.66	
	2,000,100 - above	19	5.34	100	824,017
2	After				
	100 – 500,000	17	4.77	4.77	
	500,100 – 1,000,000	55	15.45	20.22	
	1,000,100 – 1,500,000	63	17.70	37.92	
	1,500,100 – 2,000,000	112	31.46	69.38	
	2,000,100 - above	109	30.62	100	1,514,326

Source: field survey; October 2016

Table 2 shows that the mean values of farmers annual income before and after joining cattle fattening business were ₦824,017 and ₦1,514,326 respectively. This indicates that respondents

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

made huge income as a result of engaging in cattle fattening business. This is in agreement with the work of Smith et al (2011) that opined that cattle fattening is aimed at achieving economic benefits for those involved in it and the economy at large.

Test for hypothesis one

Table 2.1 shows the z-test analysis of the income of cattle farmers before and after cattle fattening.

Income	N	Mean	SD	Level of Significance	Df	Z-cal	Z-tab
Before	5	824,017	4.27	0.05	4	2.34	1.96
After	5	1,514,326	3.03	0.05	4		

Table 2.1 presents the independent z-test analysis of the mean difference in the income of respondents before and after involvement in cattle fattening.

It is observable from the table that the z cal is 2.34 at 4 degree of freedom and significance level of 0.05. Since the z cal is greater than the z tab (1.96), we reject the null hypothesis and accept the alternate, concluding that cattle fattening has significance effect on annual income of cattle farmers involved in fattening in Mubi Metropolis of Adamawa state.

Business Growth (net-worth) of Cattle Farmers

Table 3: Distribution according to Business Growth (net-worth) of cattle farmers before and after involvement in fattening

S/no	Range of Annual Income Growth (net-worth) ₦	Frequency (₦=356)	Percentage (%)	Cumulative Percentage	Means ($\bar{x}$)
1	Before				
	1 – 1,000,000	146	41.01	41.01	
	1,000,001 – 2,000,000	123	34.55	75.56	
	2,000,001 – 3,000,000	57	16.01	91.57	
	3,000,001 – 4,000,000	11	3.09	94.66	
	4,000,001 – above	19	5.44	100	1,465,730
2	After				
	1 – 1,000,000	45	12.64	12.64	
	1,000,001 – 2,000,000	87	24.44	37.08	
	2,000,001 – 3,000,000	142	39.89	76.97	
	3,000,001 – 4,000,000	55	15.45	92.97	
	4,000,001 – above	27	7.58	100	2,277,388

Source: field survey; October 2016

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

Table 3 above shows that the mean values of the farmers' business growth (net- worth) both before and after cattle fattening were ₦1,465,730 and ₦2,277,388 respectively. This indicates that respondents' net-worth increased tremendously as a result of engaging in cattle fattening business. This is also in agreement with the work of Smith et al (2011) and Suleiman M, Isiaka M and Ishaku A (2013).

Test for hypothesis two

Table 3.1: shows the z-test analysis of the Business growth (Net-worth) of cattle farmers before and after the involvement in cattle fattening.

Income	N	Mean	SD	Significance level	Df	Z-cal	Z-tab
Before	5	1,465,730	3.91	0.05	4	2.53	1.96
After	5	2,277,388	3.25	0.05	4		

Table 3.1 present the independent z-test analysis of the mean difference in the effect of cattle fattening on business growth (net-worth) before and after involvement. From the figures in the table, the calculated z-value is 2.53 at 4 degree of freedom and significance level of 0.05. The Z-cal of 2.53 is greater than the z tab of 1.96. Therefore, we reject the null hypothesis and accept the alternate, concluding that cattle fattening has significant effect on business growth (net-worth).

Employment Generation Effect of Cattle Fattening

Table 4: Distribution on the ability of cattle fattening to generate employment opportunities.

S/no	Range of Annual Income Growth (net-worth) ₦	Frequency (₦=356)	Percentage (%)	Cumulative Percentage	Means ($\bar{x}$)
1	Before				
	Less than 10	217	60.96	60.96	
	11 – 20	110	30.90	91.86	
	21 – 30	25	7.02	98.88	
	31 – 40	4	1.12	100	10.33
	41 – above	-	-		
2	After				
	Less than 10	174	48.88	48.88	
	11 – 20	147	41.29	90.17	
	21 – 30	28	7.87	98.04	

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

31 – 40	7	1.97	
41 – above	-	-	11.81

Source: field survey; October 2016

Table 4 shows that the mean values of respondents' rate of employment generation before and after involvement in cattle fattening were 10.33 and 11.81 respectively. This indicates that respondents were able to create a little employment opportunity as a result of engaging in cattle fattening business. This is in line with the work of Adamu (2011) that opined that cattle fattening is a major source of job creation, income generation, national growth and economy development. In the same vein, Suleiman M, Isiaka M and Ishiaku A (2013) in their study confirm that cattle fattening contributes to employment creation and income generation.

Table for hypothesis three

Table 4.1: the z –test analysis of the rate of employment generations of cattle farmers before and after the introduction of cattle fattening.

Employment	N	Mean	SD	Significance level	Df	Z-cal	Z-tab
Before	4	10.3	1.80	0.05	3	0.81	1.96
After	4	11.8	2.57	0.05	3		

Table 4.1 present the independent z-test analysis of the mean difference in the employment generation effect of cattle fattening before and after involvement.

From the table one can see that the calculated z-value is 0.81 at 3 degree of freedom and significance level of 0.05. Since Z-cal is 0.81 is less than z-tab of 1.96, we accept null hypothesis. This implies that cattle fattening has no significant effect on employment generation.

Challenges Involved in Cattle Fattening

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

Table 5: Distribution of respondent according to challenges involved in cattle fattening

S/no	Challenges	(N=356)	Frequency (f)	Means (x)	Decision
1.	High cost of hired labour	356	961	2.70	Agreed
2.	Insufficient family labour	356	801	2.25	Disagreed
3.	Untreated water supply (well, borehole etc)	356	956	2.69	Agreed
4.	Inadequate fund	356	963	2.71	Agreed
5.	High interest rate on loan	356	1169	3.28	Agreed
6.	Lack of collateral security	356	1169	3.28	Agreed
7.	Insufficient veterinary doctors	356	1019	2.86	Agreed
8.	High cost of medication	356	1009	2.83	Agreed
9.	No access to medication	356	1048	2.94	Agreed
10.	High cost of feeds	356	1086	3.05	Agreed
11.	Low quality of feeds	356	734	2.06	Disagreed
12.	Uncontrollable disease outbreak	356	1042	2.93	Agreed
13.	Poor infrastructural development & facilities to aid fattening	356	949	2.67	Agreed
14.	Bad road network	356	961	2.70	Agreed
15.	High cost of transportation	356	670	1.88	Disagreed

Source: Field Survey, October, 2016.

Table 5 presents the mean rating of the cattle farmers (respondents) on the challenges involved in cattle fattening business. A 4 point likert scale was used initially to capture their responses, which was thereafter reduced to a threshold of greater than or equal to 2.5 (Agreed) and less than 2.5 (Disagreed). The table based on fifteen (15) items of challenges (indices) analyzed the situation of cattle farmers in Adamawa state. Based on the 15 indices indicating challenges, 12 have mean threshold of 2.5 and above, while 3 were below mean threshold of 2.5 implying that the major challenges facings cattle fattening were numerous and includes: high cost of labour, untreated water supply, inadequate fund, high interest rate of loan, lack of collateral security, insufficient veterinary doctors, high cost of medication, no access to medication, high cost of feeds, uncontrollable disease outbreak, poor infrastructural development & facilities to aid fattening and bad road network.

CONCLUSION

The research result revealed that cattle fattening is profitable to farmers in Mubi Metropolis of Adamawa state as shown in the summary of the findings. This is in agreement with the work of Smith et al (2011) that opined that cattle fattening is aimed at achieving economic benefits for those involved in it and the economy at large.

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

The result also indicated that business growth (net-worth) of the farmers increased tremendously as a result of engaging in cattle fattening business. This is also in agreement with the work of Smith et al (2011) and Suleiman M, Isiaka M, Ishaku A (2013). In the area of employment generation, it was revealed that cattle fattening slightly contributed to employment creation. Thus, cattle fattening is a major source of job creation, income generation, national growth and economic development.

The study however identified the challenges facings cattle fattening in Mubi Metropolis of Adamawa State. These include; high cost of hired labour, untreated water supply, inadequate fund, high interest rate on loans, lack of collateral security, insufficient veterinary doctors, high cost of medication, high cost of feeds, uncontrollable disease outbreak, poor infrastructural development and bad road network.

In conclusion, it is evident that cattle fattening is a very profitable and important enterprise that has gained prominence in the agribusiness sector. It provides extra income for the farmers since it can be done all year round. Cattle fattening could play a vital role in poverty reduction, creation of self-employment opportunities and animal protein supply. Hence, cattle fattening business is a profitable venture in the study area and could increase the revenue of Adamawa state if the major challenges stated herein are addressed. To achieve this, this study makes the following recommendations;

i. Government through Bank of Agriculture (BOA) should facilitate easily access to loan to enable the cattle farmers expand their scale of production.
ii. Bank interest rates for loans should be reduced to enable and encourage cattle fattening.
iii. The state government should endeavour to improve the water supply system through irrigation, and more so, encourage farmers to dig wells where and/or when necessary.
iv. Ministry of Health should deploy more veterinary doctors to Mubi Metropolis and possibly reduce the cost of medication to checkmate pest and diseases in cattle.
v. A good road network should be constructed by the Federal and State government to link cattle farmers and their customers (market).
vi. Cattle farmers should form associations or cooperative that will enable them have access to loan and training easily to boost their fattening business.
vii. Cattle farmers should learn to depend on locally formulated feeds to reduce cost of cattle fattening and maximize profit.
viii. The existing state extension services personnel should be strengthened with the necessary technology and logistics support for effective dissemination of timely innovations and information that will improve cattle fattening business in Mubi Metropolis.

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

REFERENCES

Adamu, A.M. (2011). "Beef production in Nigeria Status. Problems and Prospects:.

Alli, R. Abegunde T. Buhman B. (Eds) in *Proceedings of I'M ECU workshop on the Nigerian Livestock Industry*. Proceeding of Lime currently workshop on the Nigerian Livestock industry, problem and prospects held in Jos, Nigeria. 26th – 27th. February.

Adrika M.N. (2014). "The Role of Cattle Marketing in Economic Development." *British*

Journals of Marketing Studies. Vol 2 No 6 European Centres for Research Training and Development.uk.

Central Bank of Nigeria (2011). Annual Report and Statement of Account. Abuja, Nigeria.

Cevger, Y., Guler, H., Saviozkan, S. and Cicek (2003). The Effect of Initial Live Weight on Technical and Economic Performance in Cattle Fattening, Turks, *Journal of Vet. Animal Sc.* 1167 – 1171.

F.D.L.P.C.S. (1991). Federal Department of Livestock and Pest Control (eds). Nigeria National Livestock Survey.

FAO (2016). Trypanotolerant Cattle and Livestock Development in West and Central Animal Production Health Paper, 67/1 vol. II page 213-230.

Food and Agriculture Organization (2014). Tryanotolerant Livestock of West and Central Africa. Food Agriculture Organization, Rome.

Girei A.A, Dire B. and Bello B.H (2013). Assessment of Cost and Returns of Cattle Marketing in Central Zone of Adamawa State, Nigeria. *British Journal of Marketing Studies* vol 1 No. 4, pp 1 – 10, December 2013 published by European Centres for Research Training and Development.uk.

Mafimisebi, T.E., Bobola O.M, and Mafimsebi, O.E. (2013). Fundamentals of Cattle Marketing in South West, Nigeria. Analyzing Market Intermediaries, Price Formation, and Yield Performance. Invited Paper Presented at the 4th International Conference of the Africa Association of Agricultural Economist, September 22-25, 2013, Ahmmamet Tunisia.

Maikasuwa, M.A, Ala, M.A. Daouda M. (2012) Impact of Irkoy Gomni Micro-Credit on Poverty Alleviation among Cattle Fatteners in Kollo LGA of Tillabery region Niger Republic American International *Journal of Contemporary Research* Vol. 2 (4), pp. 130 – 135.

ISSN: 2455-8834

Volume:03, Issue:11 "November 2018"

Mcintyere, B. and Parish, J. (2012) Stoker Cattle Forum, Feed Additives Basics.

Cattle Network Com. Mulla, NI. (1997) Marketing Costs and Price Spread-Cattle Marketing in Haveri Cattle Maret of Karnataka, *Journal of Agricultural Marketing* (West Bengal, India) vol. 40. (2), pp 42 – 47.

Sarma P.K.M, Raha S.K. and Forgandenny, H. (2014). An Economic Analysis of Beef Fattening in Selected Area of Pabna and Sirajgonj District of Banglasdesh.

Smith G.C, Morgan J.B. andSofos, J.D. (2011). Supplemental Vitamin E in Beef Cattle Diet to Improve Self Life of Beef. Animal Feed Science and Technology 59:207-21. From www.americanheart.org Understanding the Different Kinds of Beef. BEEF FACATS, 2003. Retrieved 27th November, 2011.

Suleiman M, Isiaka M, Ishiaku, A. (2013). Socio-Economic Factors Influencing Profitability of Cattle Marketing in Gombe Metorpolis, Nigeria. *International Journal of Scientific & Technology Research* volume, issue 12, December, 2013.

Tawa, C.L. and Rege J.E.O. (2014). White Fulani Cattle of West and Central Africa Animal Genetic Resources Information. Bulletin vol. 11.

Umar Abba and Sidi Shehu (2012). Financial Analysis of Small Scale Beef Fattening Enterprise in Bama Local Government Area of Borno State. An Unpublished M.Sc Thesis, Department of Agricultural Economics and Rural Sociology, ABU, Zaria.

