Cattle Rustling and Livestock Farmers' Welfare Status in Katsina State, Nigeria

Iyela, A., *Ikwuakam, O.T., & Jimoh., H. O
Federal College of Education, Katsina State
PMB 2041 Katsina State, Nigeria
*Corresponding author: **ikwuosca@yahoo.com**

ABSTRACT: *Cattle rustling in recent time have become a socioeconomic menace bedeviling Katsina State. Conscious of its socioeconomic outcome, fruitless efforts were made to tame the tide by government. It was against this background, that the study investigated the phenomenon in Katsina State with a view to situating its causes, and effect on livestock farmers' welfare status. Descriptive survey design and multi-stage sampling technique were used to generate a sample size of 542 respondents from entire livestock farmers' population in Katsina State. Structured interview schedule was employed to illicit responses on farmers' socioeconomic characteristics, involvement; rustled animals other than cattle, benefits, causes, and effect. Results revealed that livestock farmers were middle aged, experienced, males, married with large household size and Quranic educational qualification. Level of Involvement was high just as sheep and goats ranked most rustled animals alongside cattle. Level of benefit was high with manure, food, and income ranking most areas of benefits. Connivance of bandits with locals, extreme poverty, poor education, and politics were crucial causes with high level of effect that resulted to low welfare status. PPMC test of relationship revealed that age, household size, experience, involvement, benefit and effect had significant relationships with livestock farmers' welfare status. Chi-square test of association revealed livestock farmers' educational attainment, religion, gender as having significant association with farmers' welfare status. Livestock farmers' welfare status was low and a function of spate of rustling that besieged the state. Livestock farmers should initiate a collaborative effort aimed at having alternative livelihood activities.*

KEYWORDS: Livestock farmers, benefits, rustling, effect, welfare status

INTRODUCTION

There is no doubt the fact that Katsina State is one of the states in the north western zone of Nigeria that command predominantly the rearing of livestock resource both in number and diversity. Goat,

sheep, donkey, camel and particularly cattle are the most prominent. Their predominance can be traced to their tolerable weather conditions, ease production and good returns. They are good forms of investment and sources of livelihood for many farmers during times of drought, floods, and natural calamities (Habatamu, 2014), playing important social and cultural roles in the lives of millions of small-scale farmers as well (Sansoucy, *et.al* 1995).

As an integral component of the livestock sub-sector of the agricultural system, cattle plays a significant role in the provision of food, power and income generation both at the household and at national levels (Alemu & Zinash, 2001). Added to this is its contribution as a major asset for the micro-economy of small-holding farmers who because of their limited resources cannot benefit from the advanced technologies. However, in a bid to survive with their animals, most of these farmers have resorted to pastoral nomadism – a system that does not allow them live continually in the same land space but move cyclically or periodically in search of pasture for their animals.

This practice has not existed without some form of basic challenges. They are described as one of the globally marginalized groups in the world often without basic services such as health care and education (van der Kwaak & Maro 2012). This has been corroborated by the findings of UNESCO (2015) which revealed that livestock farmers who engaged nomadism were the most underserved by education, health, social amenities or socialization. In the same vein, rustling has reportedly become the nightmare to the livestock farmers. As a concept, rustling is the act of forceful raiding of livestock from one community by another using arms and leaving behind destruction of property and loss of lives. It is a practice of stealing livestock either for economic or social gains (Salih 1992). In some cases, however, such acts are committed without necessarily destroying property or killing people.

It is germane that rustling for whatever dimension and reasons has undergone fundamental transformation in recent times ranging from a cultural practice of testing a person's personal bravery, and prowess to bloody warfare between various groups or communities. In all these, the act has posed serious challenges to societal structures, survival, as well as moral foundations (Salih 1992). It has also posed serious socio economic problems that are capable of exerting abnormal effect on the welfare of the livestock farmers and marketers. Welfare in this context refers to not just the absence of disease but a complex combination of farmers' physical, financial, mental emotional and social health factors which may have been jeopardized among livestock farmers due to rustling. It is also described as a state of wellbeing of a residential unit as regards economic production, consumption, child rearing, shelter and income (Yekinni, Adediji & Hussain 2011). Yekinni added that welfare may be used as a subjective judgment of the impact of economic activities on those involved in them. The impact may either be negative or positive

Statement of the problem
The Nigerian livestock industry constitutes an important sector of the Nigerian economy, though marked with poor productivity as a result of crude and traditional method of its pastoral system.

Of the estimated 20 million populations of cattle in Nigeria, 70% of this population is found in the northern part of the country while the remaining 30% are found in other parts of the country (Okoli & Okpaleke 2014). Open grazing is the mostly practiced by the Fulanis who move for days on foot with their herds from north to the more rain-fed southern parts of the country.

As a matter of fact, the practice of open grazing is not in any way devoid of concerns. It is associated with fundamental socio-cultural and economic consequences on livestock owners (Okoli & Atelhe 2014).These repercussions include losses of lives, human injury, population displacements, loss of cattle in their numbers and which might portend negative outlook on the collective welfare of the farmers (Okoli & Atelhe 2014). This however, requires investigation to reveal what the situation is in Katsina State.

What also appears to be of a critical concern is the seemingly dearth of adequate literature on what the actual push factors of rustling are. Available opinions however are diverse. Whereas, IRIN, (2013) believed that it is caused mainly by 'disgruntled Fulanis who have lost cattle' and have thus taken to 'highway robbery, and herds raiding, Gueye, (2013) revealed that the worsening livelihood conditions of the herders arising from the repercussions of climate change, and the attendant resource conflicts, proliferation of arms, and ammunition in Africa are causes. Other causes as reveal by Gueye include drought, increased pressure on the use of land by humans for other purposes, growing population of cattle heads, and scarcity of pasture. As potent as these causes may be, their location specificity in terms of prevalence is a crucial attribute that cannot be used as yardsticks to adjudge the situation in Katsina State. The situation has incidentally attracted the attention of the government as a fundamental national security problem in Nigeria. One of such attempts involved the Nigerian Police Force, and launching of the Task Force on Cattle Rustling, and Associated Crime (Yusuf 2015). Unfortunately, this has not yielded any desired result as the menace has thrived on with possible negative consequences. Finding the dimensions of these consequences particularly on the wellbeing of the farmers is germane. It is against this backdrop that the study is put forward to investigate the phenomenon of cattle rustling in Katsina State with a view to situating its causes, effects and livestock farmers' welfare implications.

Objectives of the study
The general objective of the study was to investigate the effect of cattle rustling on livestock farmers' welfare in Katsina State. The specific objectives included to:
1. determine respondents' level of involvement in livestock production
2. ascertain respondents' level of benefit derived
3. identify causes of cattle rustling in the Katsina State
4. find out the effect of cattle rustling on livestock farmers' welfare
5. ascertain the welfare status of livestock farmers in the area

LITERATURE REVIEW

Cattle are part of the domesticated ruminants. The study of Rims, (1992) confirmed that Nigeria has an estimated population of 13.9 million cattle, and this places the country on the list of major livestock producers in sub-Saharan Africa (Lamorde, 1998). Also evident is the concentration of about 75% of the livestock population in Borno, Kano, Katsina, and Sokoto States of Nigeria (National Livestock Project, 1992). Adeghola, (1982) concurred to this reporting that between 80-90% of the small ruminants and cattle are concentrated in the sudano-sahelian ecological zone of the semi arid/arid parts of Nigeria. The country's vast land area of about 94 million hectares, of which over 70% is natural grassland and over 55% is available for grazing (Adeghola, 1982), and a indicator that of the nation's rate of cattle production.

However, reduced access to the natural grassland for grazing and water has led to the practice of open grazing. The practice has undoubtedly and increasingly been bedeviled by rustling as well as put pastoralists under intense pressure for survival. The continued wave of the menace across northern Nigeria has not only affected livestock farmers' substantial contributions to the nation's economy but hampered their economic, and wellbeing support to their households, villages, and towns (Manu, *et.al* 2014). Defined as a criminal intent to expropriate cows from the owners for meat, and financial gain, the act has reportedly evolved into a pattern of organized crime with immense criminal sophistication and efficiency (Alemika, 2013).

Okoli & Okpaleke (2014) has also viewed it as a global phenomenon that manifests in various scales and dimensions across nations. For instance, Daily Trust (2014) in Okoli & Okpaleke (2014) revealed rustling of 300 cattle in 2013 in Scotland necessitating government declaration of cattle rustling as a national emergency. In Cameroon, Manu, *et al* (2014) noted a fundamental transformation of the scenario from a cultural practice of testing one's bravery and prowess to bloody warfare between various groups or communities. Manu, *et al* further reported rustling of 2599 cattle in North West Cameroon between 2008 and 2012. In Lesotho, the act was massive causing widespread chronic poverty and inability of rural households to apply asset smoothing (Dzimba & Matooane, 2005). In Nigeria, the rate has continued to rise unabated in dimensions of petty/localized rustling, inland rustling, and trans-border rustling claiming about 60,000 cows, and killing of 322 herders in northern Nigeria in 2013 (*Daily Trust*, 2013). Okoli, (2014), *Daily Trust*, (2014), Okoli and Okpaleke, (2014) reported a recurrent trend in Zamfara, Kaduna, and Katsina States leading to loss of animals, human lives, and economic gains.

There is no doubt also, that livestock farmers are made poor, and unable to sponsor their offspring to school, and supply the basic needs of their families. This stems from the fact that a loss of a livestock through rustling means possible loss of benefits that could have accrued from both the sales, and consumption of the products. It can also mean a loss of livelihood source to some very

poor households that managed to earn income (FAO, 1997). Rich households can also be impoverished by the activities of the rustlers. Manu *et al* (2014) in corroboration listed the effects to include a loss of household wealth, an enforced cut back in own consumption, and in the sale of animal products, reduced households' heads' abilities to invest in the human capital development of their children as well as a deterioration of household's nutritional status.

METHODOLOGY

The study was carried out in Katsina state in North-Western zone of Nigeria and the unit of analysis comprised of all the livestock farmers in the state. Multistage sampling procedure was used for the study. In the first stage, seven Local Government Areas (LGAs) of Katsina State (Safana, Faskari, Batsari, Jibia, Sabuwa, DanMusa, Kankara) where cattle rustling activities have been prominent over the last five years were selected purposively. The second stage involved selecting 30% of the purposively selected LGAs to get a total of three LGAs. In each of the selected LGAs, purposive sampling procedure was also adopted to select three most affected communities to give nine communities. In the third stage, and from each of the selected affected communities, a list containing members of Livestock Farmers' Association was obtained from which 61 livestock farmers were selected using systematic sampling technique to give 549 livestock farmers that formed the sample size. However, 542 data collection instrument were correctly filled, returned and used for the study.

Adopting a survey design approach, data were primarily sourced using quantitative method (structured interview schedules). In order to ensure the validity (appropriateness) of the instrument for data collection, the instrument was subjected to face and content validity with the assistance of experts. To also ensure that the data obtained were reliable, an analysis of internal consistency of the instrument was carried out. The split-half method of reliability was used and a reliability co-efficient (r-value) of 0.75 was obtained adjudged good enough for the instrument.

Key variables measured were: level of involvement Cattle producers' level of involvement measured on a 3-points scale using scores of Not at all = 0, occasionally = 1 Always = 2. The mean score and standard deviation were generated and used to categorize the farmers into low (< mean ± 1SD), and high (($\geq$ mean ± 1SD) levels of involvement. Scale of operation was measured based on the number of animals produced. The mean and standard deviation of the sum of scores were obtained and those who scored below mean ± 1SD were categorized as small scale cattle farmers while those with a score of $\geq$ mean + 1SD were categorized as large scale cattle farmers.

Benefit derived was measured using 3-point scale of Low = 1, Moderate = 2, High = 3. The mean and standard deviation of the respondents' scores for benefit were obtained and consequently used to categorize them into having low (< mean ± 1SD), moderate (within mean ± 1SD) and high (> mean ± 1SD) levels of benefit.

Causes of rustling were measured quantitatively. In this case, respondents were asked to indicate the causes, which were ranked in order of prominence.

Effect of rustling was measured on a 4-point scale of very severe, severe, not severe and no effect with scores of 3, 2, 1 and 0 assigned respectively. Each effect was then ranked in order of severity, using the mean score

The welfare status of the respondents was derived by asking the respondents to state the actual amount spend on household basic items (such as food purchases, school fees, accommodation, utility bills, health etc.). Per capita household expenditure was derived and the wellbeing categories determined using NBS (2005) method. The categories were drawn from the mean Per Capita Expenditures (PCE) using the following criteria:

1.   Between the least value and ⅓ of mean PCE =not improved
2.   Between ⅓ and ⅔ of mean PCE = moderately improved
3.   ⅔ and highest value of mean PCE = improved

Data analysis was carried out with the aid of frequency, percentages and means. Also, Chi square and Pearson product Moment Correlation (PPMC) were used to determine relationships between variables. Tobit regression analytical tool was used to determine the predictors of the welfare status.

RESULTS

Socio-economic characteristics of the respondents
Table 1 presents results on the socio-economic characteristics of the respondents. The result in Table 1 shows that 29.5% of the respondents were between the ages of 41-50 years, 21.0% were between 51-60 years, and 19.6% were within the age of 31-40 years. Also revealed by the study is that 14.6%, 10.7% and 4.6% were >60, and between 21-30, less or equal 20 years of age respectively. The result further shows that whereas 95.2% of the respondents were males, 4.8% were females. The result on the marital status indicates that 88.2%, 8.5%, 2.0%, 1.3% were married, single, widowed and divorced respectively. On the household size, 58.5% of the respondents had less or equal people as their household size while 30.1%, 9.6%, 1.7% and 0.2% had household sizes of between 11-20, 21-30, 31-40 and >40 years of age respectively. The study also revealed respondents' educational attainments as follow quaranic education (61.1%), primary school (16.1%), secondary school (15.3%), tertiary (7.4%) and no formal education (0.2%). Whereas 95.6% were from male headed household, 4.4% were from female headed homes. Result on years of experience in livestock keeping indicates that while 55.0% had less or equal 10 years experience, 15.7% of them had between 21-30 years. The study further revealed that 14.2%, 7.9%

and 7.2% had between the ages of 11-20, 31-40, >40 years experience respectively. The result on the religious affiliation of the respondents reveals that while 99.1% were Muslims, 0.9% were Christians

Table 1: distribution of respondents based socioeconomic characteristics

	n = 542		
Variable	**F**	**%**	
Age			
less or equal 20	25	4.6	
21-30	58	10.7	
31-40	106	19.6	
41-50	160	29.5	
51-60	114	21.0	
>60	79	14.6	
Gender			
Male	516	95.2	
Female	26	4.8	
Marital status			
single	46	8.5	
married	478	88.2	
divorced	7	1.3	
widowed	11	2.0	
Household size			
less or equal 10	317	58.5	
11-20	163	30.1	
21-30	52	9.6	
31-40	9	1.7	
>40	1	0.2	
Educational attainment			
quranic	331	61.1	
primary	87	16.1	
secondary	83	15.3	
tertiary	40	7.4	
no formal education	1	0.2	
Years of experience			
less or equal 10	298	55.0	
11-20	77	14.2	
21-30	85	15.7	
31-40	43	7.9	
>40	39	7.2	
Religion			
Christianity	5	0.9	
Islam	537	99.1	

Source: field survey 2023

Level of Involvement in livestock farming
The results in Table 2 show that the respondents were always involved in the following areas of livestock farming cattle (86.8%), sheep (86.3%), and goats (86.2%). On the other hand, 87.71%,

78.2%, and 76.9% did not all rear horse, camel and donkey respectively. Table 2 further revealed that goat (mean = 2.80) ranked first, while cattle (mean = 2.78), and sheep (mean = 2.7), and donkey rand second and third among livestock reared by the respondents. However, Table 2 presents a summary of respondents' level of involvement in livestock farming. The result shows that overall; 69.0% of them were highly involved while 31.0% had low level of involvement in livestock farming in the area.

Table 2: distribution of respondents based on involvement in livestock farming

Variable	n = 542					
	Not all	Rarely	Occasionally	Always	Mean	Rank
Cattle	3.7	2.2	6.3	87.8	2.78	2nd
Sheep	3.3	1.5	8.9	86.3	2.78	2nd
Goats	3.1	.4	10.3	86.2	2.80	1st
Camels	78.2	7.4	9.4	5.0	0.41	4th
Donkey	76.9	10.1	6.3	6.6	0.43	3rd
Horses	87.1	7.0	1.7	4.2	0.23	5th

Source: Field Survey 2023

Table 3: distribution of respondents levels of involvement

Levels	F	%	Minimum	Maximum	Mean	Std Dev.
High	374	69.0	1.00	18.00	9.4280	2.39481
Low	168	31.0				

Source: Field Survey 2023

Type of livestock rustled other than cattle

Table 4 presents types of livestock rustled from the respondents other than cattle. The results show that cattle (87.3%), sheep (67.9%) and goats (63.7%) were livestock animals that were rustled always from the farmers. Although, 90.0%, 78.8%, and 77.1% of the respondents did not all experience the rustling of horses, camels, and donkeys respectively. Furthermore, cattle (mean = 2.79), sheep (mean = 2.41) and goats (mean = 2.37) ranked 1st, 2nd, and 3rd respectively among animals that were rustled from the farmers.

Table 4: distribution of respondents based on type of livestock rustled other than cattle

Variables	n = 542					
	Not all	Rarely	Occasionally	Always	Mean	Rank
Cattle	4.1	.4	8.3	87.3	2.79	1st
Sheep	5.9	14.8	11.4	67.9	2.41	2nd
Goats	6.5	13.7	16.2	63.7	2.37	3rd
Camels	78.8	8.3	10.1	2.8	0.37	5th
Donkey	77.1	9.4	9.8	3.7	0.40	4th
Horses	90.0	7.4	0.7	1.8	0.14	6th

Source: Field Survey 2023

Benefits derived

In terms of benefits derived from livestock farming, the results in Table 5 indicate that 59.0%, 41.9%, 38.6%, 33.2%, 29.2%, 25.5% and 25.1% derived very high manure, food, employment, income, transportation, power and raw material benefits. Areas where benefits derived were very low included insurance (48.8%), companion (44.8%), payment of school fees (37.2%) entertainment (34.9%) and gifts (34.5%). Using the mean values, manure (3.31), provision of food (3.10) and income ranked 1st, 2nd, and 3rd respectively among benefits derived. The summary of respondents' level of benefit derived as presented in Table 6 shows that 54.1% of the respondents had high level of benefit while 45.9% recorded low level of benefit in livestock farming.

Table 5: distribution of respondents based on benefits

Benefits		n = 542				
	Very Low	**Low**	**High**	**Very High**	**Mean**	**Rank**
Provision of food	5.4	20.8	31.9	41.9	3.10	2nd
Manure	8.3	11.1	21.6	59.0	3.31	1st
Employment opportunity	23.6	16.6	21.2	38.6	2.75	5th
Income for health needs	9.6	24.0	33.2	33.2	2.90	3rd
Source of power	24.0	25.5	25.1	25.5	2.52	7th
Transportation	12.0	29.3	29.5	29.2	2.76	4th
Raw materials	15.3	28.4	31.2	25.1	2.66	6th
Entertainment	34.9	32.1	20.5	12.5	2.11	10th
Insurance	48.7	21.0	12.4	17.9	1.99	11th
Gift	34.5	29.9	17.3	18.3	2.19	8th
Companionship	44.8	31.2	13.5	10.5	1.90	12th
Payment of school fees	37.2	29.0	17.3	16.4	2.13	9th

Source: Field survey

Table 6: distribution of respondents based on levels of benefits

Levels	F	%	Minimum	Maximum	Mean	Std Dev.
High	293	54.1	12.00	48.00	30.3247	8.41845
Low	249	45.9				

Source: Field Survey 2023

Causes of rustling

Table 7 documented respondents' perceived causes of rustling in the areas. The results show that connivance of bandits with locals (78.6%), politics (78.2%), extreme poverty (77.3%), poor education (74.7%) and unco0rdinated local intelligence (70.1%) were very important causes of cattle rustling in the area. Other very important causes were weak security architecture (65.5%), compromised conventional security system (55.9%) and porous border (49.6%). Surprisingly religious intolerance (49.3%) and Islamic extremism (58.1%) were perceived as not important

causes of rustling. The result according to the mean values indicated that connivance of bandits with locals (mean = 2.75), extreme poverty (mean = 2.73), poor education (mean = 2.70), and politics (mean = 2.69) ranked 1st, 2nd, 3rd, and 4th among causes of rustling in the area.

Table 7: distribution of respondents based on causes of rustling

Causes	n = 542				
	Not important	Important	Very important	Mean	Rank
Religious intolerance	49.3	41.0	9.8	1.61	9th
Extreme poverty	4.4	18.3	77.3	2.73	2nd
Islamic extremism	58.1	25.3	16.6	1.58	10th
Porous border system	10.3	40.0	49.6	2.39	8th
Compromised conventional security system	4.1	40.0	55.9	2.52	7th
Poor education	4.8	20.5	74.7	2.70	3rd
Weak security architecture	2.4	32.1	65.5	2.63	6th
Connivance of bandits with locals	4.1	17.3	78.6	2.75	1st
Uncoordinated local intelligence	6.5	23.4	70.1	2.64	5th
Politics	9.0	12.7	78.2	2.69	4th

Source: Field Survey 2023

Effects of rustling on livestock farmers

The effects of rustling on livestock farmers were also explored. The results as presented in Table 8 shows that poor local economy (84.1%), poor income (83.6%), poor farm produce (80.8%) and reduced access to labour (79.2%) were very severe as effects. Other very severe effects were loss oc cattle (78.2%), loss of lives (77.9%), loss of farm harvest (76.6%), reduced/loss of motivation, and poor access to agricultural extension information (70.3%). The result also revealed that poor income (mean = 2.80), poor economy (mean = 2.79), poor farm produce (mean = 2.76) and reduced access to labour were ranked first, second, third and fourth as very severe effect of rustling. The summary of level of effect as presented in Table 9 shows that rustling had high level of effect on 65.7% of the respondents while 34.3% recorded low level of effect.

Table 8: distribution of respondents based on effects of rustling on livestock farmers

Effect	n = 542				
	Not Severe	Mild	Very severe	Mean	Rank
Reduced /loss of motivation	3.1	21.2	75.6	2.73	5th
Poor access to agricultural extension information	5.7	24.0	70.3	2.65	9th
Poor farm produce	4.6	14.6	80.8	2.76	3rd
Poor income	3.9	12.5	83.6	2.80	1st
reduced access to labour	5.5	15.3	79.2	2.74	4th
Poor access to education	6.3	15.3	78.4	2.72	6th
Poor local economy	5.2	10.7	84.1	2.79	2nd
Loss of farm harvest	9.8	13.7	76.6	2.67	7th
Loss of cattle	12.5	9.2	78.2	2.66	8th
Loss of lives	12.7	9.4	77.9	2.65	9th

Source: Field Survey 2023

Table 9: distribution of respondents based on levels of effects

Levels	F	%	Minimum	Maximum	Mean	Std Dev.
High	356	65.7	10.00	30.00	27.1531	4.33792
Low	186	34.3				

Source: Field Survey 2023

Level of welfare

The study explored livestock farmers' level of welfare as shown in Table 10. The mean per capita annual household expenditure was ₦1, 171,382.3574. One third of the mean per capita expenditure of the household was calculated as ₦390, 460.79 while two third of the mean per capita expenditure of the households was calculated as ₦780, 921.57. Welfare categories were therefore obtained as follows: households between the minimum per capita 155, 00 and ₦390, 460.79 were adjudged low level of welfare and those between ₦390, 460.79 and the maximum per capita expenditure were adjudged to have high welfare level. Based on this categorization, 80.4% of the respondents fall within the low welfare category while 19.6% fall within the high welfare category.

Table 10: distribution of respondents based on respondents' levels of welfare

Levels	F	%	Minimum	Maximum	Mean	Std Dev.
High	106	19.6	15500.00	53230000.00	1171382.3574	3807683.47711
Low	436	80.4				

Source: Field Survey 2023

Test of relationship between independent variables and livestock farmers' welfare status

Table 11 presents results on the test of relation between the selected independent variables and the welfare status of livestock farmers. The result revealed that age (r = 0.094) has significant relationship with household welfare, just like household size (r = 0.094), years of experience (r = 0.165), level of involvement (r = 0.101), benefits derived (r = 0.286) and effect (r = -0.0132).

Table 11: PPMC test of relationship between selected independent variables and livestock farmers' welfare level

Variables	r	p	Decision
Age	0.094	0.028	S
Household size	0.321	0.000	S
Years of experience	0.165	0.000	S
Involvement	0.101	0.019	S
Benefits score	0.286	0.000	S
Effects	-0.0132	0.023	S

Source: Field Survey 2023

Chi-square test of relation between selected independent variables and livestock farmers' welfare status

Table 12 shows that each of educational attainment ($\chi2$ = 32.227), and religion ($\chi2$ = 5.387), had significant association with livestock farmers' welfare. Other variables such as sex ($\chi2$ = 2.350) and marital status ($\chi2$ = 5.817) showed no significant association.

Table 12: Chi-square test of relation between selected independent variables and livestock farmers' welfare status

Variables	$\chi2$	Df	cc	p	Decision
Sex	2.350	1	0.066	0.125	NS
Marital status	5.817	3	0.103	0.121	NS
Educational attainment	32.227	4	0.237	0.000	S
Religion	5.387	1	0.099	0.020	S

Source: Field Survey 2023

DISCUSSION OF FINDINGS

The study revealed that most livestock farmers were between the ages of 41-50 years, is an indication that they were middle aged and active to carry out the rigors of livestock farming. This is in tandem with the work of Yekkini (2011) that found similar active work force in Nigeria.

Most livestock farmers were also revealed to have appreciable years of experience that is in line with a priori expectation as people in the area are known to get involved in animal husbandry early in life. The result corroborates the finding of Nwaobiala (2010) who also added that such level experience enhances participation and effective adoption of improved techniques which increases output.

In addition, majority were males and this depicts gender imbalance. This could be attributed to the rigors of livestock farming and the restriction of Northern Muslim women from most outdoor activities. The result confirms the finding of Mohammed, *et. al* (2012) that in agriculture, men are presumed to be chief actors. However, in studies involving the Jukun people (Meek, 1981), and nomadic Fulfude women, and Kulka women farmers, between 70% and 80% of agricultural labour force were represented by women (Ngur, 1987).

The result that most livestock farmers were married could be attributed to farmers' craves to make ends meet and cater for the large household size. The result is in tandem with Manu et. al (2014) who revealed that most cattle owners in South West region of Cameroun were married. However, the large household size was expected considering the polygamous marriage pattern that prevails in the area. It implies that livestock farmers had adequate supply of labour and more people to cater. This result supports Nsikak *et al* (2011) who in addition revealed that large household size tends to reduce labour and production costs.

The preponderance of quaranic educational qualification depicts low literacy level which could prevent farmers from having robust platform for easy access to information and adoption of improved practices and policies. The result is in consonance with finding of Adekoya *et al* (2011) just as the predominance of Islamic religious affiliation of the farmers contradicts the finding of Abu, *et. al* (2010) that most small ruminant farmers in South Western Nigeria were not Muslims.

Most livestock farmers' level of involvement was revealed to be high with goat, cattle, sheep and donkeys ranking top most as animals reared. The country's vast land area of about 94 million hectares that consist of 70% natural grassland and over 55% grazing area (Adeghola, 1982) may have created the enabling environment for farmers' level of involvement and the concentration of between 80-90% of small ruminants and cattle in the sudano-sahelian ecological zone of the semi arid/arid parts of Nigeria. Furthermore, sheep and goats which were the most rustled animals other than cattle in the area may have emanated from the fact that sheep, goat and cattle often times were grazed together.

Benefits derived from their involvement in livestock farming included manure, provision of food, and income which were ranked top most among other benefits. On the overall, most farmers' level of benefit was high and this may be traced to tolerable weather conditions in the area, ease of production and good returns. The result is in agreement with Habatamu (2014), who revealed

these animals as good forms of investment and sources of livelihood for many farmers during times of drought, floods, and natural calamities, and playing important social and cultural roles in the lives of millions of small-scale farmers (Sansoucy, *et. al* 1995).

Distinctive factors were exposed to have specifically necessitated the scourge of cattle rustling. However, connivance of bandits with locals to perpetrate the ill, extreme poverty, poor education, and politics were most prevailing causes. These findings indicate that the causes were multi-faceted as both the victims, and the supposed opinion leaders of the affected areas were part of the problem. Whereas Saleh (2015), Shehu, *et al* (2017) attributed the menace to high levels of illiteracy, hunger and poverty, National Express (2016) implicated political interference and collaboration of security agents and locals.

The effect of the scourge was high with poor income generation, poor economy, and poor farm produce and reduced access to labour as the most negative effects. This was expected as loss of a livestock through rustling depicts loss of livelihood source, benefits and inequitable distribution of resources. Another implication is the possibility of farmers migrating out of their ancestral land for safety, with the consequence of being separated from loved ones. Manu *et al* (2014) in corroboration listed the effects to include a loss of household wealth, an enforced cut back in own consumption, and in the sale of animal products, reduced households' heads' abilities to investment in human capital development of their children as well as a deterioration of household's nutritional status.

Most livestock farmers were adjudged to have low welfare level. This means that the high level effect of rustling did translated into low level of welfare. This also implies that most farmers could not meet up with their households' food, education, health and utility needs. The result is agreement with the finding of Manu *et. al* (2014) which states that livestock rustling has alarmingly reduced the ability of household heads to invest in human capital development of their children which has resulted in a deterioration of their households' health and nutritional status.

The PPMC result revealed that age, household size, years of experience, level of involvement, benefits derived and effect had significant relationships with livestock farmers' welfare level. This shows that with improved age, household size, years of experience, involvement, benefits derived, farmers' welfare status would be enhanced. The is consistent with the findings of (Akinbile *et,al* 2010) on the wellbeing of beneficiaries of the University Based Agricultural Extension System. Also, the test of association using Chi-square revealed that livestock farmers' educational attainment, religion, gender, had significant association with their welfare level. This result means that with positive changes in livestock farmers' educational attainment, religious practices and gender roles, improved welfare level is feasible. The reverse however would yield no shift in their welfare status. This is line with the finding of Ikwuakam (2013) on socio-economic status of cassava processing entrepreneurs in south eastern, Nigeria

CONCLUSION

Livestock farmers' welfare status which was low was a function of the spate of cattle rustling that besieged the area overtime. Livestock farmers practiced an integrated animal management system, a situation where other livestock types - sheep, goat, donkeys, camel and horses were reared along with cattle. The study has exposed livestock farming as having high level of benefit.

Although, the causes of cattle rustling were established to be multi-faceted, connivance of bandits with locals to perpetrate the ill, extreme poverty, poor education, and politics were most prevailing. This is a critical indication to the fact that both the victims of the menace and the supposed opinion leaders of the affected area were really part of the problem.

Rustling effect, age, household size, experience, levels of involvement and benefit were exposed to have had significant linkages/correlation with livestock farmers' welfare status. It was further established that livestock farmers' gender, educational attainment and religious affiliation had significant association with the status.

Recommendations
Based on the findings, the study recommends that:
1.   Livestock farmers should in their various communities initiate a robust collaborative effort aimed at having alternative livelihood activities.
2.   Pooling resources together and managing same using cooperative approach is sacrosanct to its sustainability and as a copping strategy for livestock farmers
3.   Building farmers' capacities in the alternative livelihood areas is germane as this will guide against making them vulnerable to venture failure
4.   Scaling up awareness creation on the vital roles of formal education should be emphasized by the opinion leaders including the government.
5.   Improved community policing in synergy with government approved vigilante groups using motorized patrol and surveillance should be encouraged by government. The security men should also be deployed to the forests serving as hideouts/abodes for the perpetrators with a view to dislodging and preventing them from having such spaces
6.   Scaling up rustling campaigns in the area is crucial in obviating terror-induced rustling.
7.   Stiffer sanctions/punishment should be pronounced and implemented against perpetrators and those who may be found conniving with them

REFERENCES

Abu, G.A., P.I. Ater and D. Abah (2012). Profit Efficiency among Sesame Farmers in Nasarawa State, Nigeria Current Research Journal of Social Sciences 4(4): 261-268

Adegbola, A.A. (1982): Forage resources and beef cattle production in Nigeria. Proceedings of National Conference on Beef Production. Held at Durba Hotel, Kaduna, Nigeria July 27th - 30th. PP 137 – 165

Adekoya A.E., Fadiro O.S., and Ogunnele, A.O., (2011). Perception of Cattle Farmers to the Use of Information Communication Technologies in Oke-Ogun Area of Oyo State, Nigeria. International Journal of Applied Agricultural Research, India. Vol. 6 No 1, pp 9-16

Akinbile, L.A., Oyebode, L.A., Sobiye, A.A (2010) Wellbeing of Beneficiaries of the University Based Agricultural Extension System in Ogun State, Nigeria. Journal of Agricultural Extension http://dx.doi.org/10.4314/jae.v20i2.11

Alemika, E.E.O (2013). Organized crime and governance in West Africa: Overview in E.E.O Alemika (Ed.), *The Impact of organized crime on governance in West Africa*. Abuja: Friedrich-Ebert-Stiftung (Abuja Regional Office, Abuja).

Daily Trust (2014 February). Investigation: 322 herders killed, 60,000 cattle rustled in 2013. *Daily Trust online* at http://dailytrust.info/likked-60,000-cattle-rustled-in-2013 accessed March 15th , 2014

Dzimba, J. and Matooane, M. (2005). Stock Theft and Human Security: A Case Study of Lesotho, http://www.iss.co.za/pubs/Monographs/No113/Acknow.htm

FAO (Food and Agricultural Organization of the United Nations) (1997). Lesotho: Agricultural Sector Investment Programme and Sustainable Mountain Agriculture Development Programme, FAO Investment Centre Studies and Reports, United Nations..

Gueye, A.B. (2013). Organized crime in the Gambia, Guinea-Bissau and Senegal. In E.E.O. Alemika (Ed.), *The impact of organized crime on governance in West Africa*. Abuja: Friedrich-Ebert-Stiftung. (Abuja Regional Office, Nigeria)

Habtamu L (2014) Livestock entrepreneurship as an emerging self-employment option for university graduates in Ethiopia: Overview of concerns and potentials for growth European Journal of Business and Management www.iiste.org (Online) Vol.6, No.4

Ikwuakam O T (2013) Determinants of Socio-Economic Status of Cassava Processing Entrepreneurs in South-Eastern Nigeria Journal of Agriculture and Veterinary Sciences Volume 5, Number 2

Integrated Regional Information Networks (IRIN) (2013) Nigerians on the run as military combat book haram. Integrated Regional Information Networks. http:/www.irin.org/report/9807/analysis-nigerians-on-the-run-as-military-combat-boko-haram. Accessed 20/4/2022

Lamorde, A.G (1998) Scenario building for the Nigerian Livestock Industry in the 21st century. A paper presented at the Silver Anniversary Conference of the Nigerian Society for Animal Production-Gateway Hotel, Abeokuta, Nigeria. March 21-26

Manu I.N., Andu W.N., Tarla D.N & Agharih W.N (2014) Socio-economic effect of cattle theft on the pastoralists of the North West Region of Cameroon Journal of Agricultural Science Vol. 4(6), pp. 299-305 June, 2014 .http:// www.scholarly-journals.com/SJAS. accessed 2/20/2023

Meek C (1981). A Sudanese Kingdom, London: Kegan, Paul, Trench, Trubner and Co.

Mohammed, B. T., and Abdulquadri, A. F (2012) Comparative analysis of gender involvement in agricultural production in Nigeria Journal of Development and Agricultural Economics Vol. 4(8), pp. 240-244, 12 May, 2012 Available online at http://www.academicjournals.org/JDAE

N.L.P.D (1992) National Livestock Project Department Records.

National Bureau for Statistics (NBS) (2005) Poverty Profile for Nigeria. National Bureau for Statistics, NBS, Abuja

National Express (2016), Cattle Rustling Could Be More Dangerous than Boko Haram, in: *National Express,* 4 February, online: <www.national express.com.ng/cattle-rustling-could-be-more-dangerous-than-bokoharam>(6 February 2016).

Ngur N (1987). Women and development in crop and livestock production in Nigeria. Paper presented at the seminar on Women Studies, University of Ibadan, Nigeria. pp. 4-6 November 1987.

Nsikak-Abassi, A. E., Okon, S., and Akpabio, I.A., (2011) Labour and Poverty: Empirical Relationship using house Data from South Nigeria. International Journal of Agricultural Management and Development. Vol. 1, No.2

Nwaobiala, C,U (2010) Effects of Green River Project on Cassava Farmers Production in Ogba/Egbema/Ndoni LGA of Rivers State, Nigeria. Global Approaches to Extension Practice (GAEP) Journal 6 (2): 18-23

Okoli, A.C and Atelhe, G.A (2014). Nomads against Natives: A political ecology of herder/farmer conflicts in Nasarawa State, Nigeria. *American International Journal of Contemporary Research,* (2), pp.76-88.

Okoli, A.C and Okpaleke, F (2014). Banditry and Crisis of public safety in Nigeria: Issues in national security strategies. *European Scientific Journal*, 10(4), pp.350-362.

Okoli, A.C. (2014). Disaster management and national security in Nigeria. *International Journal of LiberalArts and Social Science*, Vol. 2(1) pp. 21-59.

RIM (1992): Nigerian Livestock Resources. Four volume report to the Federal Government of Nigeria. Submitted by Resource Inventory Management Limited. 1. Executive Summary and Atlas. 2. National synthesis. 3. State Reports. 4. Urban Reports and commercially managed livestock survey report.

Saleh, B. M. (2015). In: Rural Banditry and Conflict in Northern Nigeria. Pub. Centre for Democracy and Development Pp 69-110

Salih, M. A. (1992). 'Agro-Pastoralism: An underestimated Regional Food Production System'. *Eastern Africa Social Science Review* (EASSR). 4(1): 23-37.

Sansoucy, R., Jeabbar, M., Ehui, S. and Fitzhugh, H. (1995). Keynote Paper: The contribution of livestock to food security and sustainable development. In: Wilson R., Ehui S. and Mack S. (eds.), Livestock development strategies for low income countries,27 February-2 March 1995. ILRI (International Livestock Research Institute), Addis Ababa, Ethiopia.

Shehu, S. A. Victor, E. &Binta, M. (2017). The menace of cattle rustling and banditry in North-West Nigeria: A Case Study of Katsina State. *Journal of Research & Method in Education, 7*(6), 40-47.

UNESCO (2015) Regional overview: Sub-Saharan Africa. Education for global monitoring report

Van der Kwaak A (2012) Understanding nomadic realities on sexual and reproductive health and right in eastern Africa: Amsterdam: Royal tropical Institute Press KTT: p. 136

Yekinni O.T, Adedeji A.R and Hussain I.A (2011) Contribution of Cassava Enterprise to Household welfare in Ejigbo Local Government Area of Osun State. NRSA Journal Vol. 12 No. 1 p.10

Yusuf, V (2015), Deadly Persistence of Cattle Rustling, in: *Daily Trust,* 16 May, online: <www.dailytrust.com.ng/weekly/index.php/features/20488-deadly-persistence-of-cattle-rustling>.