

Level of Utilisation of Veterinary Service by Livestock farmers in Western Agricultural Zone of Nasarawa State, Nigeria

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Abstract

This study assessed the level of utilisation of veterinary services by small scale livestock farmers in the western agricultural zone of Nasarawa state. Two LGAs (Karu and Keffi LGAs) were purposively selected from the zone for the study. A total of 120 respondents were selected through a multi-stage random sampling procedure. Data were collected through the use of a structured interview schedule. Data were analyzed using both descriptive statistics and a multiple regression model. The results show that a majority (75.2%) of the respondents were male with a mean age of 35 years and an average of 10 years of farming experience. Half (50%) of them had tertiary education, indicating enhanced capacity to access and use veterinary services. Veterinary services accessed by the respondents were treatment of sick animals (93.3%), vaccination (93.3%), castration (65.0%), sales of drugs and vaccines (58.1%). Veterinary services such as: treatment of sick animals ($\bar{x} = 3.3$) and vaccination ($\bar{x} = 3.2$) recorded high level of use. The regression analysis showed that gender ($t = 0.417$), level of education ($t = 0.603$), number of extension visits ($t = 0.607$) and membership of social organisations ($t = -0.670$) had significant effect at 1% on the level of use of veterinary services by the respondents. Lack of money to acquire vaccines and drugs ($\bar{x} = 2.3$), high cost of veterinary services ($\bar{x} = 2.3$) and far distance to veterinary centres ($\bar{x} = 2.0$) were the major constraints to use of veterinary services. It was recommended that extension agents should encourage the farmers to join cooperative groups to enhance easy access to credit to procure veterinary inputs.

Keywords: Access, farmers, livestock, use, veterinary services

1.0 Introduction

Livestock diseases remain a veritable threat to the animal production industry. Animal products are constantly under threat by diseases that affect livestock and hence reduce productivity. Endemic animal diseases such as *Helminthosis*, *Contagious Bovine Pleuropneumonia (CBPP)*, *brucellosis*, *mastitis*, *peste des petits ruminants (PPR)*, and many others have devastating impacts upon the animal industry leading to losses in hundreds of millions of dollars every year in developing economies like Nigeria (Bamaiyi, 2012 and Bhat *et al.* 2012). The poultry industry is even more devastated by viral infections such as Newcastle disease and *Infectious bursal disease (Gumboru)* in spite of several attempts at vaccinations. Some of the reasons for these may be vaccine failure and the involvement of quacks in fighting these endemic animal diseases in the country. In order to reverse this negative trend of heavy losses in the livestock industry efficient access

and utilization of veterinary services by livestock farmers especially in the rural areas is sacrosanct (Olugasa *et al.*, 2013). Veterinary services are considered as a vehicle for reducing poverty among the small scale rural livestock farmers. This is due to the fact that for livestock owners to prosper there is a need to control economically disruptive and development-inhibiting livestock diseases. These livestock plagues if not prevented could lead to periodic depopulation of herds and flocks as well as causing human diseases. Efficient veterinary services will also help in the control and prevention of *zoonotic diseases* (Diseases that are transferred from animals to humans). Animal-transmitted diseases such as *rabies*, *anthrax*, *tuberculosis*, *hydatid disease*, *brucellosis*, *salmonellosis* and many others affect both livestock farmers and consumers of livestock products. Veterinary science is, therefore, pivotal for the control of many zoonotic diseases (Bamaiyi, 2012). Olugasa *et al.* (2013) observed that most animal

production activities in Nigeria are located in rural and remote areas which are inaccessible to proper veterinary services and many that are accessible find the high cost of veterinary services prohibitive hence they resort to the easily available quacks that wreak havoc on the animal industry by using expired vaccines, fake drugs and wrong prescriptions for treating diseases. Despite the growing importance of veterinary extension service as a tool for sustainable livestock production for family and national food security. Many rural farmers seem to have poor access to the available services. In the case of Nasarawa state and the western Agricultural zone in particular despite the proliferation of veterinary stores in the township and local markets it is not certain whether the small scale livestock farmers have good access and patronage of such services.

Research Questions

The study was guided by the following research questions:

1. What are the socio economic characteristics of livestock farmers in the study area?
2. What are the types of livestock mostly kept by the respondents?
3. What is the level of utilization of veterinary services by the respondents?
4. What are the effects of respondents' socioeconomic characteristics on their level of utilization of veterinary services?
5. What are the constraints to the effective utilization of veterinary services by the respondents?

Objectives of the Study

The broad objective of the study was to assess the level of utilisation of veterinary services by livestock farmers in Western Agricultural zone of Nasarawa State. The specific objectives were to:

1. describe the socio-economic characteristics of respondents
2. identify the types of livestock mostly kept by the respondents ;

3. determine the level of utilization of veterinary services by the respondents;
4. determine the effects of respondents' socio-economic characteristics on their level of utilisation of veterinary services;
5. identify the constraints to effective use of veterinary services by the respondents.

2.0 Methodology

2.1: The Study Area

This study was carried out in western agricultural zone of Nasarawa state which covers four local government areas (LGAs) of Karu, Keffi, Nasarawa and Toto.

2.2 Sampling Procedure and Sample Size

A multi-stage sampling technique was used for the study. First, two extension blocks were randomly selected from each of the two Extension Areas in the zone to give a total of four extension blocks selected. Secondly, two livestock producing communities were randomly selected from each of the four selected blocks to give eight (8) communities. Stage three involved the selection of 15 livestock farmers using simple random sampling technique from each of the eight (8) communities giving a total of 120 respondents for the survey.

2.3 Method of Data Collection

Primary data were collected using a structure interview schedule which was administered to the respondents with the help the Extension agents in the area. The interview schedule was framed in such a way that it covered all the objectives of the study.

2.4 Method of Data Analysis

Data were analysed using both descriptive and inferential statistics. Percentage and mean scores were used to achieve objectives 1, 2, 3 and 5 while multiple regression model was used to achieve objective 4.

Model Specification

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + \dots + \mu.$$

Where:

Y=Level of access to veterinary services (Percentage)

X₁= Age of farmers (years)

X₂=Sex of the respondent (male=1. Female=2)

X₃=Educational level (Number of years spent in school)

X₄= Number of veterinary extension contacts per year

X₅=Years of livestock farming experience

X₆ = Membership of social organization (Yes =1, No = 0)

X₇=Access to Credit (Amount of loan obtained in naira)

X₈= Annual income (N)

b₁ – b₈ = Regression coefficients

a= Constant term

μ= Error term

3.0 Results and Discussions**3.1 Socio-Economic Characteristics of the Respondents**

Table 1 show that the majority (65.8%) of the respondents were within the age range of 21-40 years with the mean age of 35years and majority (59.8%) of them were single. This implies that the livestock farmers in the study area were mostly young people who are usually ventures. Younger farmers are expected to be more innovative than the older ones hence their ability to adopt innovations more readily.

The table further shows that majority (78.8%) of the respondents were males while 21.2% were females, implying that men were more actively engaged in livestock production than the women in the area. A greater proportion (41.9%) of the respondents had tertiary education, 39.3% had secondary education, 13.7% had no formal education while (5.1%) of the respondents had primary education. This implies that majority of the respondents had formal education of different levels. According to Adebayo and Adeola (2005), education plays a vital role in technology adoption. The higher the educational level of farmers the higher the productivity of their farms. Therefore, farms managed by educated entrepreneurs will perform better than those managed by illiterates. This is because higher education level influences livestock farmers' attitudes and thoughts by making them more open, rational and able to analyze the benefits of the new veterinary services.

Majority (64.1%) of the respondents obtained their information on veterinary services from mass media and 34.2% obtained theirs from

extension agents. Mass media such as radio, television and print media are usually adjudged as the most effective channels of communication because of their ability to reach large number of audience at the same time within a short time. However, in their study of extension communication channels usage and preference by farmers Okwu and Daudu (2011) found out that interpersonal channels were generally more available and accessible to the farmers while friends/neighbours/relations were the most regularly available/accessible interpersonal channels of communication (45.89%), followed by extension agents (38.61%).

Table 1 also shows that the mean annual income of respondents was N104, 948. Income level usually shows a significant positive relationship to technology adoption by respondents. It is expected that the more money that is available to the respondents, the more they should be able to access veterinary services. Table 1 also shows that majority (59.9%) of the respondents had no access to credit while 40.2% had access to credit. This might be because many of the farmers do not belong to any cooperative group.

The table also shows that majority (53.0%) had no access to extension visits, 20.5% of the respondents had access to extension agents at least twice a month, while 4.3% had access to extension services only once a month. Lack of extension contacts could have been responsible for wrong application of veterinary drugs among livestock farmers in most cases. It was also revealed that majority (51.3%) did not belong to any cooperative organization. This implies that most of the respondents might find it difficult to access loan to boost their livestock production.

Table 1 also showed that larger proportion of the respondents (37.6%) had 1-5 years of experience in livestock farming experience with the mean years of farming experience as 9years. This implies that most of the

respondents were new entrants in the livestock farming business and thus may lack some vital technical skills in the use of veterinary services.

Table 1: Socioeconomics characteristics of respondents

Characteristics	Percentage	Mean ($\bar{x}$)
Age		
1-20	7.7	35.37
21-40	65.8	
41-60	23.9	
Above 60	2.6	
Gender		
Male	75.2	
Female	24.8	
Marital status		
Married	37.6	
Single	59.8	
Divorced	2.6	
Educational status		
No formal education	13.7	
Primary	5.1	
Secondary	39.3	
Tertiary	41.9	
Annual income in naira		
1000-50,000	30.8	N104, 948.71
51,000-100,000	34.2	
101,000-150,000	17.1	
151,000-200,000	6.8	
Above 200,000	11.11	
Access to credit		
Yes	40.2	
No	59.8	
Source of information		
None	1.7	
Extension agents	34.2	
Mass media	64.1	
No visit per month	53.0	
Once	7.7	
Twice	20.5	
Three times	6.8	
Four times	4.3	
Above four times	7.7	
Membership of social organization		
Yes	48.7	
No	51.3	
Years of experience in Livestock farming		
1-5	37.6	10.37years
6-10	39.3	
11-15	17.9	
Above 15	5.1	

Source: Field survey, 2016.

3.2 Types of Livestock Kept

Results in Table2 show the types of livestock kept by the respondents in the study area. The majority (76.9%) were into sheep and goat production, poultry accounted for 50.4% while cattle production accounted for only 39.5%.

This implies that the respondents were mostly into small ruminant and poultry production. This may be attributed to their low capital base which may not permit them go into cattle production

Table 2:Types of livestock kept by the respondents

Livestock type	Percentage
Poultry	50.4
Sheep and goat	76.9
Cattle	38.5

*Multiple responses

3.3 Veterinary Services mostly Utilised by the Respondents

Results in Table3 show those veterinary services that were highly (>50%) utilised by the respondents include: treatment of sick animals by Veterinary staff (92.3%); vaccination of animals (87.2%); castration (65.0%); and buying of routine drugs from Vet stores (58.1%). Veterinary services that

recorded low level (<50%) of utilisation include sanitary/fumigation practices (41.0%); routine de-worming (31.6%) and debeaking (26.5%). The results show a very high level of utilisation of most of the available veterinary services by the respondents. This implies that livestock farmers in the area were very much aware of the need to patronise Veterinary staff for the health needs of their livestock.

Table 3:Veterinary services mostly utilised by the respondents

Services	Percentage
Treatment of sick animals by Veterinary staff	92.3
Vaccination	87.2
De-beaking	26.5
Sanitary/Fumigation practices	41.0
Castration	65.0
Routine De-worming of animals	31.6
Buying of routine drugs from Vet stores	58.1

3.4 Effects of Respondents' Socio-economic Characteristics on their Level of Utilisation of Veterinary Services

Table 4 shows the results of regression analysis of the effects of socioeconomic characteristics of respondents on their level of utilisation of veterinary services. Among the socio-economic characteristics, education of the respondents, marital status, household size, and income were all positively related to level of utilisation of veterinary services. The R-square value is 0.941%, indicating that 94% of the variation in the dependent variable was explained by the independent variables. Variables such as gender ($t=0.417$), level of education ($t=0.603$), number of extension visits ($t=0.607$) and membership of social organisations ($t=-0.670$) had significant effect

on level of utilisation of veterinary services at 5 percent level. This implies that educated farmers, extension contacts and membership of organisation all increase the probability of using veterinary services by the livestock farmers. This is because educated farmers can access and use information from various modern sources including print and electronic media as well as social media platforms. Also extension contact and membership of social organisations provide avenues for information sharing and education for farmers. In a study of the socio-economic factors affecting poultry production in Ejigbo LGA of Osun State, Nigeria, Adebayo and Adeola (2005) found that education level had significant and positive relationship with average productivity.

Table 4: Effects of respondents' socio-economic characteristics on level of utilisation of veterinary services

Variables	Coefficients	Standard error	t-value
Constant	-1.180	3.519	-0.335
Gender	0.261	0.628	0.417***
Age	-0.704	0.606	-1.162
Education	0.263	0.437	0.603***
Marital status	2.129	0.844	2.522
Household size	0.934	0.042	22.345
Years of experience	-1.088	0.283	-3.847
Extension visit	0.021	0.035	0.607***
Membership of social organization	-0.027	0.040	-0.670***
Income	0.572	0.237	2.413

R² = 0.941, *significant at 1%.

Constraints to effective use of veterinary services by the respondents

Table 5 shows the constraints to effective use of veterinary services by the respondents. The major constraints expressed by the respondents were high cost of veterinary services ($\bar{x}$ = 2.3); lack/inadequate funds to acquire vaccines or

drugs ($\bar{x}$ = 2.3) and distance to veterinary clinic/shops ($\bar{x}$ = 2.0). This finding agrees with that of Olugasa *et al.* (2013) who observed that most animal production activities are located in rural areas or remote areas inaccessible to proper veterinary services and many that are accessible find the high cost of veterinary services prohibitive

Table 5: Constraints to effective utilisation of veterinary services

Constraints	Mean score
High cost of veterinary services	2.3*
Inadequate funds to acquire vaccines or drugs	2.3*
Distance to veterinary clinic/shops	2.0*
Low educational level	1.8
Scarcity of adequate drugs and vaccines	1.7
Lack of adequate awareness of veterinary services	1.5

= Serious constraints

4.0 Conclusion and Recommendations

4.1 Conclusion

Livestock farmers in the study area had high level of access to veterinary services. However the effective utilisation of such veterinary services was hampered by certain constraints such as high cost of veterinary services, lack of/inadequate funds to acquire vaccines or drugs and distance to veterinary clinic/shops.

4.2 Recommendations

Based on the findings of this study the following policy recommendations are considered germane.

- i. To promote viable and profitable livestock production system in Nigeria, government should subsidize veterinary drugs and services for small scale livestock farmers to ensure their effective utilisation.
- ii. There is an urgent need to strengthen the public agricultural extension system to enable livestock farmers access veterinary services and take well informed decisions in dealing with cases of pests and diseases in their livestock farms.

- iii. Extension agents should encourage and mobilize livestock farmers to form cooperative organizations to help them

get loan to acquire veterinary services with ease.

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