DETERMINANTS OF VETERINARY SERVICES UTILIZATION AMONG POULTRY FARMERS IN SAKI-EAST LOCAL GOVERNMENT AREA, OYO STATE, NIGERIA

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SUMMARY

The study examined the determinants of poultry veterinary services utilization in Saki-East Local Government Area of Oyo State, Nigeria. Data were collected from poultry farmers using a well-structured questionnaire. Descriptive statistics were used to analyze farmers' personal and farm's characteristics while regression analysis was used to determine the relationship between utilization of veterinary services and other variables. Poultry farming was a male dominated business. The mean age and family size of the respondents were 40 years and 7 persons respectively. Majority (78.4%) of the poultry farmers were married while (89.2%) of them had acquired one form of formal education, the mean years of experience were 6 years. The major source of information was friends (74.8%) while the mean monthly income was ₦61,147.40. The available veterinary services were disease diagnosis ($\bar{x}=2.11$), provision of drugs ($\bar{x}=2.05$), management of poultry diseases ($\bar{x}=2.02$) and treatment of diseases ($\bar{x}=2.00$) while the veterinary services utilized were treatment of poultry diseases ($\bar{x}=2.15$), provision of drugs ($\bar{x}=2.14$), diseases diagnosis ($\bar{x}=2.05$) and management of poultry diseases ($\bar{x}=2.04$). Major constraints to utilizing veterinary services were high cost of veterinary services ($\bar{x}=2.78$), poor accessibility of veterinary services ($\bar{x}=2.77$) and little or no availability of veterinary services ($\bar{x}=2.68$). The determinants of utilization of veterinary services include farm income (t= 2.252), availability of veterinary services (t= 8.652) and constraints to utilization of veterinary services (t= -2.019). Access to veterinary services among farmers should be improved by subsidizing veterinary service cost. Also the number of health and extension personnel should be increased through employment.

Keywords: Veterinary services, Poultry farmers, availability, use, constraints

INTRODUCTION

Livestock farming provides employment, income and livelihood to many people in Nigeria particularly Saki-East Local Government Area of Oyo State. Many people especially in the rural areas satisfy their subsistence needs through livestock production which involves the rearing and marketing of cattle, sheep, goats, pigs and poultry which is very common in most households in Nigeria (Salau, 2019). Poultry refers primarily to those species of domestic birds which performs economic services to man by providing him eggs and meat. These poultry birds include turkey, Guinea fowl, duck, geese, quails, ostriches and chickens. Of all the birds, chicken is mostly reared for commercial purposes in Nigeria. Poultry as an aspect of livestock production is more than other forms of livestock in Nigeria as it is found everywhere throughout the country. Today it has developed from backyard business to a commercially oriented industry. It has highest turnover rate to investment which has made it a unique enterprise in agricultural sector. The poultry sector is characterized by relative faster growth in consumption and trade volume than many other agricultural livestock sector (Adeyemo and Onikoyi, 2012).

In addition, poultry production is one of the important components of the livestock sub-sector in the Nigerian economy that can be embarked upon by the people with small capital or little land/space. Nigeria's poultry industry is composed of local unimproved breeds and the high performing commercial breeds (Adebayo and Adeola, 2005). The development of the poultry industry has also been described as the fastest means of closing the protein deficiency gap existing in most of the developing countries. It can serve as a source of foreign earnings in Nigeria if properly harnessed. Poultry production in rural areas of the country is more important because of the essential role it plays. The meat and eggs are always meeting human needs for animal protein and this singular reason made the enterprise attractive and popular among small, medium as well as large scale poultry farmers (Anosike*et al.,* 2018). High rate of disease and pest attack have been identified as a major challenge in poultry production (Ajala*et al*., 2007; Aromolaran*et al*., 2013).Olusaga*et al*. (2013) reported that the poultry industry is often more affected by viral infections such as Newcastle disease, and infectious bursal disease i.e. Gumboro despite availability of vaccines. The reasons for this may be vaccine failure and the use of unqualified

personnel (quacks) in combating these endemic animals' diseases in the country. However, veterinary services areconsidered as a vehicle for reducing poverty among the small scale rural poultry farmers. Inputs such as feeds, water, proper housing, good management practices and record keeping are essential for profitable livestock production particularly poultry but without proper animal health practices there will be reduced efficiency and optimal profit (Salau, 2019).

Veterinary services are animal health services provided by professionals geared towards providing livestock farmers with animals' health and disease control, product and market development and animal production and preservation. The increase in productivity of livestock sector can be facilitated by availability and high quality of veterinary services. Thus, veterinary services can be classified into four categories according to Adesiji*et al.,* 2013. They are:

(a) Curative services which has to do with diagnosis and treatment of diseased animals

(b) Preventive services which involves vaccination of the animals to stop the emergence and spreading of diseases

(c) Production of veterinary pharmaceuticals and

(d) Human health protection such as sanitary inspection of animal products.

Veterinary services in poultry production include proper health management practices such as proper deworming, vaccination, nutrition, environmental sanitation, disease prevention and control. Bamaiyi (2013) reported that most animal production activities in Nigeria are located in rural areas which are inaccessible to proper veterinary services and those that are accessible could not afford the high cost of veterinary services. Fabusoro *et al.,* (2007) opined that in terms of control of livestock diseases, livestock farmers in Nigeria hardly take up veterinary treatment of the affected animal(s), especially the small ruminant farmers, as they consider the veterinary treatment too expensive to bear. Hence, the success of poultry industry is highly dependent on an effective veterinary service in terms of availability and quality (Achoja *et al.,* 2010). It is based on this backdrop that the study was conducted to examine the determinants of utilization of veterinary services among the poultry farmers in Saki East Local Government Area of Oyo State, Nigeria.

MATERIALS AND METHODS

The study area was Saki-East Local Government Area of Oyo State. It has an area of about 1,569km^2 and the population of this area as at 2006 census is 110,223. The main ethnic group in the area is Yoruba. There are eleven wards in the local government. Saki-East Local government has five major communities which are Ago-Amodu, Sepeteri, Oje-Owode, Ogbooro and Agbonle. The local government headquarters is at Ago-Amodu while Sepeteri is the largest community (National Population Commission NPC, 2006).

A multi-stage sampling procedure was used in selecting the sample from the population. The first stage involved the random selection of eight wards out the eleven wards that make up the local government area. The second stage was the selection of fifteen farmers randomly in each of the eight selected wards making a total number of 120 farmers as the sample size of the study. A well-structured questionnaire based on the objectives of the study was used to gather information from the farmers. Availability of veterinary services among the farmers was measured such as readily available, occasionally available and not available from a list of veterinary services. The services were rated as follows: Readily available = 3, Occasionally available = 2 and Not available = 1. The cut off mean was 2. Responses with mean values greater than or equal to two were regarded as available veterinary services, while responses with mean values less than 2 were regarded as not available veterinary services. Similarly, level of use of veterinary services was measured as highly utilized, moderately utilized and not utilized. The levels of use were rated as follows: Highly utilized = 3, Moderately utilized = 2 and Not utilized = 1. The cut off mean was 2. Responses with mean values greater than or equal to two were regarded as utilized veterinary services, while responses with mean values less than 2 were regarded as not utilized veterinary services. Percentages, means and linear regression were used for data analysis.

The linear regression equation is represented in the explicit form as:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + \ldots + b_{12}X_{12} + e \quad \ldots.. \; eq. \; 1.$$

Where Y = Level of use of veterinary services

X_1 = Age of farmer in years

X_2 = Sex (nominal level; male 1, female 0)

X_3 = Marital status (nominal level; married 1, not married 0)

X_4 = Educational status (nominal level; formal education 1, non-formal education 0)

X_5 = Main occupation (nominal level; farmers 1, other occupation 0)

X_6 = Farmers association (nominal level; member 1, non-member 0)

X_7 = Household Size (interval level; number of persons)

X_8 = Years of farming (interval level; experience in years)

X_9 = Source of funds (nominal level; personal savings 1, otherwise 0)

X_{10} = Monthly farm income (in Naira) (interval level)

X_{11} = Available veterinary services (mean scores) (ordinal level)

X_{12} = Constraints to use of veterinary services (mean scores) (ordinal level)

b_i = Regression coefficient (i = 1, 2, 3,…, 12)

a = Constant

e = Error term

RESULTS AND DISCUSSION

Personal and farm characteristics of the respondents:

The results revealed that the mean age of the farmers was 40 years implying that majority of the poultry farmers were in the economically active age range, which is in line with the findings of Adeyemi *et al.*(2012). The sex categorization of poultry farmers showed that most (88.3%) of the farmers were males. This could be attributed to the fact that most of the respondents used the enterprise as an extra source of income for the family which is the perceived primary responsibility of males. This result agrees with the finding of Amos (2006). Majority (78.4%) of the respondents were married suggesting that it could have been the sense of responsibility inherent in the status of being married coupled with the desire to have an extra source of income that propelled the respondents to take up the enterprise. The major consequence of this is that it can help them to enhance their productivity towards meeting their family needs. This result conforms favourably with the findings of Aromolaran *et al.* (2013). Majority (89.2%) of the respondents had one form of formal education. This result agrees with the findings of Nurudeen (2012) who opined that majority of the poultry farmers had tertiary education meaning that they are highly educated. About half (48.6%) of the respondents had farming as their major occupation and primary source of income. The implication of this is that the respondents still engaged in other income generating activities and this could be attributed to their small scale of production. Household size is recognized as a major source of labour supply in poultry production in most African countries like Nigeria. This comprises the labour of all males, females and children in a household, who participate in poultry production. The average household size was about 7 persons per household. This result agrees with the findings of Ezeh*et al.*(2012) who reported that poultry broiler farmers in Umuahia, Nigeria had an average household size of 6 persons. The mean years of experience in poultry farming was 6 years implying that majority of the respondents had a few years of experience in poultry farming. The predominant source of capital was personal savings (41.4%) indicating that majority of the respondents relied on personal savings as their source of capital. This has a negative implication for the scale and size of investment which farmers can make in their business. Table (1) further reveals that majority (74.8%) of the respondents obtained information from friends. Only few (23.4%) of the respondents belonged to Poultry Farmers' Association while majority (76.6%) did not belong to Poultry Farmer's Association. The mean monthly income from poultry business was ₦61,147.40 showing that they were mainly low income earners.

Table 1. Personal and farm characteristics of poultry farmers (n= 111)

Personal characteristics	Description
Age	Mean = 40.1 years
Sex	Male (88.3%)
Marital status	Married (78.4%)
Educational level	Formal education (89.2%)
Main occupation	Predominantly farmers
Membership of farmers' Association	Predominantly non members
Household size	7 persons
Years of experience	Mean = 6 years
Sources of funds	Predominantly personal savings
Sources of information	Predominantly friends (74.8%)
Farm monthly income	Mean = ₦61, 147.40

Source: Field survey, 2019.

Availability of veterinary services among respondents:

The results on Table (2) show that out of the nine identified services, only four including disease diagnosis ($\bar{x}$=2.11), provision of drugs ($\bar{x}$=2.05), management of poultry disease ($\bar{x}$=2.02) and treatment of poultry disease ($\bar{x}$=2.00) were the veterinary services available to the respondents while the remaining five services such as consultancy services ($\bar{x}$=1.96), and inspection of poultry products ($\bar{x}$=1.94) and others were not available to the farmers. This implies that most of these services were out of reach of the poultry farmers which is likely as a result of unavailability of these services in the study area.

The result also indicates the lack of relevant information on poultry health, a responsibility that should be taken up by extension services. This finding is in line with that ofAdesiji*et al.,* (2013) who asserted that despite the growing importance of veterinary extension services as a tool for sustainable livestock production for improving farmers' household welfare, livestock extension is a field that is neglected by both policy makers and researchers. The veterinary services which are readily available in the area were provided by private animal health professionals and not by government agencies.

Table 2. Veterinary services available to poultry farmers (n=111)

Veterinary services	Mean ($\bar{x}$)	Standard deviation	Rank
Advisory services	1.84	0.394	8th
Management of poultry diseases	2.02	0.572	3rd
Treatment of poultry diseases	2.00	0.616	4th
Provision of drugs	2.05	0.529	2nd
Consultancy services	1.96	0.555	5th
Inspection of poultry products	1.94	0.544	6th
Diseases diagnosis	2.11	0.493	1st
Poultry education	1.90	0.587	7th
Training of poultry workers	1.83	0.601	9th

Source: Field survey, 2019.

Use of veterinary services among poultry farmers:
The results in Table (3) show that the majority of the respondents utilized services such as treatment of poultry diseases ($\bar{x}$=2.15), provision of drugs ($\bar{x}$=2.14), disease diagnosis ($\bar{x}$=2.05) and management of poultry diseases ($\bar{x}$=2.04). This result is an indication that poultry farmers mostly used curative services more than preventive services and this is very dangerous for the nations' poultry industry. Igwe *et al.* (2015) reported that management activities carried out by the farmers must be done with prevention and control of diseases in mind.

Table 3. Use of veterinary services by poultry farmers (n=111)

Veterinary services	Mean ($\bar{x}$)	Standard deviation	Rank
Advisory services	1.93	0.374	7th
Management of poultry diseases	2.04	0.466	4th
Treatment of poultry diseases	2.15	0.508	1st
Provision of drugs	2.14	0.513	2nd
Consultancy services	1.98	0.522	5th
Inspection of poultry products	1.94	0.527	6th
Diseases diagnosis	2.05	0.519	3rd
Poultry education	1.90	0.539	9th
Training of poultry workers	1.92	0.574	8th

Source: Field survey, 2019.

Constraints faced by the respondents in utilizing veterinary services:
Table (4) reveals that high cost of veterinary services ($\bar{x}$=2.78), poor accessibility of veterinary services ($\bar{x}$=2.77), illiteracy of farmers ($\bar{x}$=2.68) and little or no availability of veterinary services ($\bar{x}$=2.68) were ranked first, second, third and fourth constraints, respectively to utilizing veterinary services. Others were inadequate veterinary officers ($\bar{x}$=2.67) and discrimination of veterinary officers ($\bar{x}$=2.67). Efforts should be made at eliminating these identified constraints.

Table 4. Constraints to use of veterinary services among poultry farmers (n=111)

Constraints	Mean ($\bar{x}$)	Standard deviation	Rank
High cost of vet. Services	2.78	0.512	1st
Lack of awareness	2.59	0.562	9th
Inadequate Vet. Officers	2.67	0.545	4th
Fear of taking risk	2.62	0.633	8th
Non-availability of drugs	2.66	0.595	5th
Distance of Vet. Officers	2.65	0.627	7th
Little or no availability of Vet. Services	2.68	0.525	3rd
Poor accessibility of Vet. Services	2.77	0.466	2nd
Misinformation	2.66	0.548	6th
Discrimination of Vet. Officers	2.67	0.593	4th
Inadequate extension workers	2.49	0.601	10th

Source: Field survey, 2019.

Factors affecting the utilization of veterinary services among farmers:
Table (5) shows the results of the multiple regression analysis of the relationship between utilization of veterinary services among the farmers and farm characteristics, availability of veterinary services and constraints of the services usage. The independent variables were significantly related to

utilization of veterinary services among the farmers. The F value of 19.99 at P<0.05 shows that there was a strong correlation between the utilization of veterinary services among the poultry farmers and the independent variables. The significant factors affecting utilization of veterinary services include farm income (T= 2.252), availability of veterinary services (T= 8.652) and constraints to utilization of veterinary services (T= -2.019). This finding revealed that farmers' income, availability of veterinary services and constraints to utilization of veterinary services are the major determinants to utilization of veterinary services among farmers. It therefore implies that farmers will utilize veterinary services as their farm income increases. Similarly, there will be increased utilization of veterinary services among the farmers when there is an improved availability of the veterinary services. The elimination of the constraints to the utilization of the veterinary services will result in increased utilization of the services among the poultry farmers. The R value is 0.87 while the R^2 is 0.76; this implies that the independent variables predict 76% of the change observed in the dependent variable.

Table 5. Factors affecting utilization of veterinary services among farmers

Variables	β	Std. Error	Beta	T	Sig.
Constant	14.481	3.25		4.460	0.000
Age	-0.028	0.024	-0.092	-1.182	0.241
Sex	0.052	0.640	0.005	0.081	0.936
Marital Status	-0.321	0.531	-0.043	-0.604	0.547
Educational qualification	-0.408	0.756	-0.033	-0.539	0.591
Main Occupation	-0.369	0.417	-0.580	-0.887	0.378
Membership of Farmer's Association	0.131	0.440	0.018	0.298	0.766
Family size	0.105	0.037	0.089	1.435	0.155
Years of experience	-0.011	0.065	-0.013	-0.172	0.864
Source of Funds	-0.031	0.394	-0.005	-0.078	0.938
Farm monthly income	0.049	0.022	0.154	2.252	0.027
Veterinary services available	0.557	0.064	0.650	8.652	0.000
Constraints to utilization	-0.150	0.074	-0.144	-2.019	0.047
R	0.87				
R^2	0.76				
Adjusted R	0.72				
F	19.99				

CONCLUSION AND RECOMMENDATIONS

It is seen from the study thatfarmers' income, availability of veterinary services and constraints to utilization of veterinary services are the determinants to utilization of veterinary services among farmers**.** It therefore becomes imperative for efforts to be geared towards improving access of low income farmers to veterinary services through subsidization of veterinary service cost. It also very important to make veterinary services available to farmers as this will improve their utilization. This can be done by recruiting needed health and extension personnel as well as providing the required facilities to render the services easily accessible. Finally efforts should be exerted to reduce or completely eliminate all the constraints to utilization of veterinary services which the farmers identified.

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محددات إستخدام الخدمات البيطرية بين مربى الدواجن فى منطقة الحكومة المحلية فى شرق ساكى ، ولاية أيو ، نيجيريا

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فحصت الدراسة محددات إستخدام الخدمات البيطرية للدواجن فى منطقة الحكومة المحلية فى شرق ساكى، فى ولاية أيو، نيجيريا. تم جمع البيانات من مزارعى الدواجن بإستخدام إستبيان محكم التنظيم. تم إستخدام الإحصاء الوصفى لتحليل الخصائص الشخصية للمزارعين وكذلك خصائص المزارع؛ بينما تم إستخدام تحليل الإنحدار لتحديد العلاقة بين الإستفادة من الخدمات البيطرية والمتغيرات الأخرى. كانت تربية الدواجن عملا يهيمن عليه الذكور، كان متوسط العمر وحجم الأسرة لمن إستجابوا ٤٠ سنه، سبعة أفراد على التوالى. كانت الغالبية العظمى(٧٨.٤%) من مزارعى الدواجن متزوجين بينما (٨٩.٢%) منهم حصلوا على أحد أشكال التعليم الرسمى. كان متوسط سنوات الخبرة ستة سنوات، كان الأصدقاء هم المصدر الرئيسى للمعلومات (٧٤.٨%)، بينما كان متوسط الدخل الشهرى ٦١,١٤٧.٤٠ نيرة نيجيرية. كانت الخدمات البيطرية المتاحة هى تشخيص الأمراض (x̄ =٢.١١)،توفير الأدوية (x̄ = ٢.٠٥) وإدارة أمراض الدواجن (x̄ = ٢.٠٢) وعلاج الأمراض (x̄ =٢.٠) ، بينما كانت الخدمات البيطرية المستخدمة هى علاج أمراض الدواجن (x̄ =٢.١٥) وتوفير الأدوية (x̄ = ٢.١٤) وتشخيص الأمراض (x̄ = ٢.٠٥) وإدارة أمراض الدواجن (x̄ = ٢.٠٤). بينما كانت المعوقات الرئيسية لإستخدام الخدمات البيطرية هى التكلفة العالية للخدمات البيطرية (x̄ = ٢.٧٨)، وضعف الوصول إلى الخدمات البيطرية (x̄ = ٢.٧٧) وقلة أو عدم توفر الخدمات البيطرية (x̄ = ٢.٦٨). تضمنت محددات الإستفادة من الخدمات البيطرية دخل المزرعة (t = ٢.٢٥٢) وتوافر الخدمات البيطرية (t = ٨.٦٥٢) والقيود على الإستفادة من الخدمات البيطرية (t = ٢.٠١٩). يجب تحسين الوصول إلى الخدمات البيطرية بين المزارعين من خلال دعم تكلفة الخدمات البيطرية ، كما ينبغى زيادة العاملين فى مجال الصحة والإرشاد عن طريق توظيفهم.