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PERCEIVED EFFECTIVENESS OF EXTENSION SERVICE DELIVERY IN IMPROVING POULTRY FARMING AMONG POULTRY FARMERS IN MAIDUGURI, BORNO STATE, NIGERIA

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Abstract

This study assessed the perceived effectiveness of extension service delivery in improving poultry production among poultry farmers in Maiduguri. Borno State, Nigeria. A two-stage sampling procedure was used in selecting 200 poultry farmers. Primary data were used which were collected with the aid of structure questionnaire. Data were analysed using descriptive statistics such as mean, five (5) point likert scale, ranking and inferential statistics using simple regression analysis. The results revealed that majority (77.5%) of the respondents were male, 70% were married and majority (85%) fell within the age bracket of 21-60 years with majority (80%) had an average of 6 persons per households. The results further showed that a greater proportion (86%) had attended some level of education and 54% have being in the business for more than 5 years on an annual income of 20 - 40,000 per annum. It further showed that more than half (53%) attested that extension services delivered to the farmers is not effective. There was significant relationship between perceived effectiveness of extension services and stock size of the respondent at 5% level of significance with an estimated R^2 at 87%. Inadequate extension services were identified as the most serious problem. Thus, the need for rendering frequent services at an affordable fees and organize regular seminars and workshop on poultry management, local feed formulation among others.

Keywords: Poultry farmers, Extension services, Perceived effectiveness.

Introduction

Poultry is by far the largest group of livestock in the world with an estimated figure of about 14000 million, consisting mainly of chickens, ducks, and turkey in the world (FAO, 2010). It possesses an economic value to man and plays a prominent role in providing animal protein to large proportion of the citizen, accounting for about 25% of local meat production in the nation. It serves as source of meat, egg and fibre (Rahji, 2003; Adepoju, 2008; Yusuf and Maloma 2007). Poultry meat and eggs; unrestricted by any religion or culture are the most consumed animal protein in Nigeria.

In the pre-independent era, poultry enterprise was mainly established in the family backyard characterized by low productivity and primitive technology. However, Poultry production is gaining popularity in the developing countries due to its role in bridging the protein malnutrition in their diets and economic empowerment of the resource poor segment of the society (Wishart, 2002). In Nigeria, Poultry production has become a popular agricultural

enterprise giving its many advantages over other livestock and has undergone tremendous changes over the past decades in genotypes, management and technological advancement. It was gradually improved from the low output and inefficient to an efficient enterprise through the introduction of various poultry improvement schemes such as cross breeding of local with exotic improve breeds. This led to the transformation from traditional method to the present modern poultry keeping with both layers and broilers to meet the ever-increasing demand for egg and meat production in the country.

Poultry products are highly nutritious and offer enormous economic benefit to man, both at home and industries. Apart from meat, poultry egg serves as a good source of animal protein, lipids and vitamins of high biological value to a man. Its production should be high priority rating because chicken has a better energy and protein conversion ratio than any other animal with high net returns on investment (Aboki et al., 2020).

The realization of the importance of animal Protein made various governments in Nigeria to pursue programs to boost production of livestock to ensure the attainment of food and Agriculture organization (FAO) recommendation of 35g/caput of animal protein per day (Olaniyi *et al*, 2008). However, rapid growth and development of the poultry depend on access to knowledge and technologies through extension services to address emerging problems of seasonal, poor and shortage of feeds, low breed quality, bad management and poor health, reduce risk and make poultry production sustainable and profitable (Ayanda and Yusuf, 2013). Agricultural extension service is a system that facilitates the transfer of knowledge and good practices to farmers by changing their knowledge, attitude and skills (Sanga, Kalungwizi, and Msuya, 2013; Ardo *et al*., 2017; Shehu, 2018). Therefore, it becomes imperative to assess the effectiveness of extension service in improving poultry production in Maiduguri Metropolitan Area of Borno State, Nigeria.

The broad objective of the study was to assess the effectiveness of extension service delivery among poultry farmers in improving poultry production in Maiduguri Metropolitan Council of Borno State. The specific objectives were to:

i. examine the socio- economic characteristics of respondents in the study area;
ii. examine the perceived effectiveness of extension services in improving poultry production in the study area and
iii. identify the constraints faced by poultry farmers in the study area.

Methodology

The Study Area

The study was conducted in Maiduguri Metropolitan Area of Borno State, Nigeria. Maiduguri is the capital of Borno state. It lies between latitudes 11^0 48 N to 11^0 50 and longitudes 13^0 06 E to 13^0 14 E at an altitude of 345M above the sea level. It has an approximated land area of 69,436km^2 with an estimated population of about 634,693 (NPC, 2006) projected to 958,386 people for 2021 based on 3.4% annual growth rate.

Maiduguri lies in the Sahel savannah vegetation zone. The climate is usually hot and dry for most part of the year with an average temperature ranges from 35^0 - 44^0C. The area is usually cold and dry characterised by a strong wind, November to January being the coldest months.

The area has an average annual rainfall of about 647mm per annum with the rainy season covering the months of June to October, with a low relative humidity of about 45 % (Lake Chad Research Institutes, 2007).

The predominant ethnic groups in the study area are the Kanuri, Marghi, Shuwa, Hausa, Fulani and Bura. There are also people from southern states such as Igbo and Yoruba. Maiduguri is the principal trading hub for northeast Nigeria. Its economy is largely based on services and trade with a small share of manufacturing. The climate is favourable for the production of several crops and livestock. The major crops grown in the area include maize, millet, guinea corn, rice, cowpea, fruits and vegetables. The major livestock reared are cattle, sheep/goats and poultry among others.

A Two-stage-sampling technique was employed in selecting the respondents for the study. Maiduguri Metropolitan Area is made up of fifteen wards. In the first stage five (5) wards were randomly selected. These include, Gwange 1, Bolori, Maisandari, Wulari and MaduganariThe second stage sampling involved proportionate selection of 200 poultry farmers from the sampling frame using Yero Yamen formula at 5% level significance. The list of poultry farmers was obtained from their respective cooperative societies and farmer organizations in the study area.

Both primary and secondary sources of information were employed for the study. The primary data were collected using structured questionnaire. Data on socio-economic characteristics of the poultry farmers such as age, sex, educational qualification, family size, farm size and years of experience, information on extension services related to poultry farming. Secondary information was obtained from research journals, internet and other relevant publications.

Analytical Tools

The descriptive statistics such as frequency, percentages were used to achieve objectives i andiii of the study. A five (5) point Likert type scale was used to assess the effectiveness of extension services delivery in improving poultry production to achieved specific objective (ii) of the study. Ten (10) indicators were developed and used to assess the effectiveness of extension service delivery in improving the poultry production. These indicators include:

1. Aware of extension services
2. Access to extension services
3. Improve the level of technology used
4. Significantly reduce the rate of mortality
5. Improved access to formal credit facilities
6. Assist in local feed formulation
7. Increased farm income through improved management
8. Provides training on good management practices
9. Improve access to veterinary services
10. Membership of cooperative society

The effectiveness of the extension services categories on the Likert scale as 5 = Extremely effective, 4 = Very effective, 3 = Moderately effective, 2 = Slightly effective and 1 = Not effective.

The following criteria was used to rate the effectiveness of extension services delivery on improving poultry farming in the study area[11];
5 = Extremely effective if a respondent score at least seven (7) and above indicators, which represent 70% of total indicators
4 =Very effective if a respondents score six (6) indicators, which represent 60% of the total indicators
3 = Moderately effective if a respondent score five (5) indicators, which represent 50% of the total indicators
2 =Slightly effective if a respondents score four (4) indicators, which represent 40% of the total indicators
1 =Not effective if a respondents score three (3) indicators, which represent 30% of the total indicators.

Result and Discussion

The socio-economic characteristics of respondents were examined with respect to age, sex, educational status, years of experience in poultry farming, annual income, access to credit, access to extension services, membership of any farmer associations. These results are presented in Table .1

Table 1: Distribution of the Respondents based on Socio-economic Characteristics

Variable	Frequency	Percentage (%)
Sex		
Male	155	77.5
Female	45	22.5
Age		
Less than 21 years	06	3.0
21 – 40	112	56.0
41 – 60	56	28.0
60 and above	26	13.0
Marital Status		
Married	160	70.0
Widowed	40	30.0
Household size (No. of pers.)		
Less than 4	28	14.0
4 – 8	104	52.0
9 – 12	22	11.0
13 and above	46	23.0
Level of Education		
Non-formal Education	48	24.0
Primary School	114	57.0
Secondary School	24	12.0
Tertiary Education	14	7.0
Years of Experience(Years)		
<5	37	18.5
5– 15	104	52.0
16 years and above	59	29.5
Annual Farm Income		

Less than ₦ 20, 000	44	22.0
₦ 21, 000 - ₦ 40, 000	136	68.0
₦ 41, 000 - ₦ 60, 000	12	6.0
₦ 61, 000 and above	08	4.0
Access to credit		
Access	130	65.0
No Access	70	35.0
Source of Fund		
Commercial bank	14	10.8
Thrift/credit society	96	73.8
Friends/ Relative	20	15.4
Sources of Information		
Private Input Providers	85	42.5
Mass media	60	30.0
Friends/Neighbours	15	7.5
ADP	40	20.0
Extension Contact		
Weakly		
Monthly	13	6.5
Yearly	28	14.0
Not at All	159	79.5

Source: Field Survey, 2021

Entries in Table 1 revealed that majority (77.5%) of the respondent were male 70% were married and 84% of the respondents fell within the age bracket of 21-60 years, majority (86%) had an average of 6 persons per household. This indicate that, poultry farming in the study area is dominated by male who are in their active ages and shouldered a lots of responsibilities which makes them to source for an additional means of income to supplement their needs and that of their families hence, the need of extension services in order to motivate the farmers to engage more in the poultry faming. The result in Table 1 also revealed that majority (86%) of the respondents had attended some level of education, only 24% had no formal education and 54% being in the business for more than 5 years with 68% on an annual income of between ₦20, 000 - ₦ 40,000. This implies that they could easily read and understand extension information on the new and modern techniques of poultry production. This finding also conforms to that of Olorunwa (2018), Gulleimu (2017) and Ologbon *et al* (2012) who reported similar findings.

The result in Table 1 also indicates that, majority (65%) of the respondents in the study area have access to credit facilities from various sources such as commercial banks (10.8%), thrift and credit society (73.8%), friends and relatives (15.4%), only 16.7% have no access to any kind of credit facilities. This implies that the poultry farmers could easily secure the much-needed fund mainly from friends and family members to adopt the modern and improved techniques of poultry production. It further revealed that, majority (79.5%) of the respondents do not had contact with extension agents at all. However, only 14.0% were able to have contact with

extension agents in a year. Only (6.5%) had contact with extension worker in a month. It implied that, poultry farmers lack frequent to extension agents.

The perceived effectiveness of extension service delivery on improving poultry production as measured by the indicators of effectiveness is presented in Table 2.

Table 2: Distribution of Respondents based on Perceived effectiveness of extension services on improving poultry production (n = 200**)**

Response Categories	Frequency	Percentage	Mean
Extremely Effective	10	5.0	0.25
Very Effective	17	8.0	0.34
Moderately Effective	25	12.5	0.36
Slightly Effective	42	21.0	0.42
Not Effective	106	5.0	0.53

Source: Field Survey, 2021

Result in Table 2 indicated that more than half (53.0%) of the respondent attested that extension services delivered to the farmers is not effective (x=0.53) in improving poultry farming the study area. About 21.0% of the respondents believed that it is slightly effective (x=0.42%) and only 8.5% of the respondents attested it is very effective. The result implied that, a greater proportion of the respondents scored less than 40% of the indicators of effectiveness believing that, they have not been getting the required services as expected. The implication of these findings is that ineffective delivery of extension services will result in bad poultry management practices thereby making the poultry industry not to keep pace with the demand of the teeming populace of supplementing dietary deficiencies. This conforms to the findings of Awoade and Akinwale (2019) who reported that effective delivery of extension services will help in increasing farmer's income and reduce dietary deficiencies of people.

This could be probably due to the fact extension service in the state has been neglected over the years by the government to the extent that one hardly sees an extension personnel visiting farmers in their respective farms. Similarly, the state of insecurity being experience has also contributed to this situation of extension services in the state. This finding also agrees with that of Shehu (2018) who reported similar finding on her study on perceived effectiveness of extension service delivery on poverty reduction among women farmer's household head in Borno State, Nigeria that, extension service is not effective and the ineffective nature of extension service delivery will impart negatively on farming activities of the respondents and hence their participation in extension activities.

Table 3: Regression Estimates of Perceived Effectiveness of Extension Service Delivery on Stock Size

Variables	Coef.	Std. Err.	T	P>|t|	95% Cnf. Interval
Level of effectiveness	.0410286	.014411	2.85	0.032	.0594017 .0026555
Constant	.630997	.0965843	6.53	0.000	.4408365 .8211574
R2= 0.870123					
Adjusted R2= 0.73321					
F(1,268) = 23.64					

Source: Field Survey, 2021

Result in Table 3 showed that the level of Perceived effectiveness of extension services is significant at 5% and positively related to stock size. It implies that, an increase in level of perceived effectiveness of extension services will lead to an increase in stock size of the poultry farmers. This could be attributed to the fact that, an effective delivery of extension services will provide them with relevant information on how to improve on their poultry farming.

The result from Table 3 revealed that, inadequate extension services was ranked as the 1st and the most serious problem faced by the respondents. This could be attributed to fact that most of the respondents lack awareness on the role of public extension services there relaying more on inputs providers for access to inputs and other relevant information. This conforms to the findings of Owpade and Akinwale (2019) that inputs providers are the sole providers of extension services. High prices of inputs (54.0%) are rated as the 2nd problem bedaubing poultry farmer's inputs like the chicks and feed. The implication of this finding is that, farmer lack knowledge of collective bargaining, which will enable them to have direct access to wholesalers for inputs supply at an affordable price.

The constraints faced by the respondents is presented in Table 4.

Table 4: Constraints Encountered by the Respondents

Variables	Frequency	Percentage	Ranking
Poor Chick Quality	96	48.0	3rd
Insecurity	59	29.9	5th
Inadequate Extension Services	165	82.5	1st
High Disease Infestation	73	36.5	3rd
High Prices of Inputs	108	54.0	2nd
Inadequate veterinary Services	47	23.5	6th

Source: Field Survey, 2021

Inadequate veterinary services were considered the least problem among the problems identified. The implication of this finding is that, lack of access veterinary services will result in losses by the farmers thereby reducing their interest to engage more in poultry production. This is in line with the findings of Aboki et al (2020)that high cost of veterinary services significantly affects poultry production.

Conclusion

The study concluded that, the extension services delivered to the poultry farmers is not effective in improving poultry production despite the strong positive relationship between Perceived effectiveness of extension service delivery and stock size. The study therefore, recommended the following to improve the effectiveness of the extension service delivery;

1) Public extension services in the state such as Agricultural Development Project (ADP), ministries of agriculture should serve as the sole provider of information, advices, technical support and provide inputs such as quality chicks, drugs at subsidized price.

2) Government and Non-Governmental Organization should provide support to the extension work in the state by organizing seminars and workshops from time to time on different issues relating to poultry farming such as good management practices, home and local feed formulation.

3) Extension agents should be mandated to train contact farmers to extend their services to other farmers.

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