



PERCEPTION OF POULTRY FARMERS ON THE PERFORMANCE OF EXTENSION SERVICE DELIVERY IN WESTERN ZONE OF BAUCHI STATE, NIGERIA

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ABSTRACT

The study assessed the perception of poultry farmers on the performance of extension agents on service delivery in western agricultural zone of Bauchi State, Nigeria. Four out of seven local governments areas with high concentration of poultry farmers were purposively selected. The data were collected from 120 poultry farmers using structured questionnaire. The data obtained were analyzed using both descriptive and inferential statistics. The results of the study showed that 78.3% of the respondents were married with 72.5% female and having mean age of 35.5. Majority (70%) have farm size below 200 birds, 82.5% of respondents had one form of formal education or the other. About 47% of the respondents had between 6-10years farming experience with 65% of them operating poultry farming as secondary occupation. The study established that the extension agents were perceived by the farmers having adequate knowledge of subject matters (mean = 4.26), good communication skills (mean = 4.45). The result of regression analysis showed that all the predictors yielded significant beta weights with their varied t-values which were all statistically significant ($P < 0.05$) except education level. Age and sex of the respondents had negative but significant effect ($P < 0.01$) on the perceived effectiveness. Based on this study, it was concluded that the extension service delivery in the zone was effective. The recommendation made was that more extension staff should be employed and deployed to poultry production areas.

Keywords: Perception, Poultry, Performance, Extension Service, Delivery.

INTRODUCTION

Agriculture plays important role in providing employment, reducing poverty and serves as an engine for growth in developing countries. Additionally, it contributes to the socio-economic well-being of the people through food production and employment (Aker, 2010). Agricultural extension service which is one of the tools for agricultural development, serves as a source of information on new technologies for farming communities which when adopted can improve production, income and standard of living. Moreover, agricultural extension provides a channel through which farmers' problems could be identified for research and formulation of agricultural policies to the benefit of rural communities (Olaoye, 2014).

In recent time, agricultural development in Nigeria depends so much on extension service delivery which aim at providing farmers with necessary education, skills and technical information to enable them make effective farm management decisions to enhance their productivity. An effective extension service delivery is therefore an essential factor for the



accelerated development of agriculture in developing countries (Ashley-Dejo, 2012). People often measure success or failure of extension delivery based on the level of adoption without consideration for the effectiveness of extension service delivery. The interaction between extension agents and farmers and the extent to which farmers perceive extension agents as being useful to them is vital to bringing change in the farmers' agricultural output.

Poultry happens to be the largest and the most reared domestic animals in Nigeria either for subsistence or for commercial purpose. Poultry has become a popular industry for the small- and large-scale farmers and has great contribution to the national economy (Ummuna *et al.*, 2012). The study area is the major poultry production zone of Bauchi State. This is due to the favourable climatic condition for poultry production it shares with Jos, Plateau state. However, there is need to intensify poultry production to maximize the utilization of the climate. The intensification of poultry production requires the effective delivery of new innovations and technologies to poultry farmers. Farmers' belief about these innovations in terms of their delivery systems, benefits, and constraints on poultry production are yet to be investigated.

The broad objective of this study is to assess the performance of extension agents in service delivery on poultry production in western agricultural zone of Bauchi State, Nigeria. The specific objectives of the study were to:

- i. describe the socio-economic characteristics of poultry farmers;
- ii. assess poultry farmers' perception on the performance of the extension service delivery; and
- iii. analyze the frequency of contacts between extension agents and poultry farmers;

MATERIALS AND METHODS

The Study Area

The study area is Western Agro-ecological Zone of Bauchi State. The Zone stretches from Latitude 9°30' to 10°48' North of the Equator and Longitude 8°45' to 10°15' East of the Greenwich Meridian. The local governments in the study zone include: Alkali, Bauchi, Bogoro, Dass, Kirfi, Tafawa Balewa and Toro. (Bauchi State Agricultural Development Programmes [BSADP], 2002). The study area enjoys a tropical climate with a long dry season period of seven months (October to April) and a short-wet season of five months (May to September). The total rainfall varies from 900-1300mm per annum and projected population of 2, 085, 600 people in 2017 (BSEPSS, 2011).

The sampling frame included poultry farmers in the four selected local government areas in the zone. The first stage involved a purposive selection of four local government areas out of seven in the zone with highest concentration of the poultry farmers. These selected local governments areas were, the second stage involved a random selection of two districts in each local government areas. The randomly selected districts were; Jama'a and Toro districts selected from Toro LGA, Lere and Bununu were chosen from Tafawa Balewa LGA; from Dass LGA, Wandu and Dass were chosen while in Bauchi LGA Zungur-Galambi and Bauchi districts were chosen. The third stage involved a random selection of 120 small scale poultry farmers available in selected districts.

Method of Data Collection and Analysis

In the study primary data were collected from the poultry farmers using structured questionnaire. The secondary data were collected from scholarly literatures such as journals, bulletins, conference proceedings, records/reports from BSADP and internet service

The responses of the 5-point scales were categorized according to their mean scores using descriptive statistics (frequencies percentages and mean). The use of mean as descriptive



statistics was to obtain the mean scores of the rating. The mean score 3.5 and above were classified as effective, while those with mean scores below 3.5 were classified as not effective. In terms of severity of constraints of extension service delivery, mean scores of 3.5 and above were regarded as very severe, while mean scores of below 3.5 were regarded as not severe. The inferential statistics tool used was Multiple Regressions Model which is given as:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 X_{8i} + \beta_9 X_{9i} + e_i \dots (1)$$

where;

Y_i = is the dependent variable

β_0 = is the constant term

β_1 to β_p are coefficients relating to explanatory variables of perception.

e_i = is the error term.

Y = perceived performance of extension service delivery to poultry farmers by mean scores from a Likert scale.

X_1 = Age of the respondents measured in years

X_2 = Sex measured as a dummy variable (1 for male, 0 for female)

X_3 = Marital Status measured as a dummy variable (1 if married, 0 otherwise)

X_4 = Total Income measured in naira.

X_5 = Highest Educational Attainment: (primary certificate (1), SSCE (2), tertiary (3), none formal (4), no education (5).

X_6 = Household size (number of people in the family).

X_7 = Farm Size measured in number of birds.

X_8 = Farming Experience measured as number of years spent in production.

X_9 = Number of extensions contact measured as the number of extensions contact in the 2018

U = Error term

RESULTS AND DISCUSSION

The Socio-economic Characteristics of the Respondents

According to the findings in Table 1, 16.7% of the respondents were within the age range of 21-30 years and below, while 38.3% were within the age range of 31-40 years. Those within the age range of 41- 50 years accounted for 32.5%; while those that were within the ages of 51 years and above accounted for 12.5%. It could be seen that 38.3% of the respondents were within the age bracket of 31 – 40 years of age, the total youth population (21-50 years) was about 87.5%. This implies that young people of economically active age, constituted the greater population of the poultry farmers. The age bracket 21-50 years is an important characteristic that determines the ability to pursue and learn new innovations (Adisa and Adekoya, 2011).

The result further more shows that most (72.5%) of the poultry farmers interviewed were female while their male counterparts were 27.5%. These proportions of respondents show that females participated in small scale poultry production than their male counterparts in the study area. This agrees with Koyenikan (2011) findings that, small scale poultry farming is mainly female dominated vocation especially in most African countries.

The table also shows that, majorities (78.3%) of the respondents were married and 21.7% were singled. This implies that majority of the respondents were married persons considered to be more responsible, rational in taking decisions and had a high sense of belonging. This result confirms Olaniyi *et al.* (2008) findings that married people accounts for majority of poultry farmers' population.



Table 1: Distribution of the Respondents according to their Socio-economic Characteristics

Variables	Frequency	Percentage	Mean
Age			
21-30years	20	16.7	35.5
31-40 years	46	38.3	
41-50 years	39	32.5	
51 years and above	15	12.5	
Sex			
Male	33	27.5	
Female	87	72.5	
Marital status			
Single	26	21.7	
Married	94	78.3	
Household size			
1-3	64	53.3	4.0
4-6	24	20.0	
7 and above	32	26.7	
Educational level			
Primary school certificate	17	14.2	
Secondary school certificate	34	28.3	
Tertiary school certificate	48	40.0	
Non formal school education	18	15.0	
No school attended	3	2.5	
Years of experience			
1-5years	13	10.8	
6-10 years	57	47.5	
11-15 years	31	25.8	
16 years and above	19	15.8	
Training received in 2017			
Yes	56	46.7	
No	64	53.3	
Farm size (in number of birds)			
100 and below	70	58	
101 – 200 birds	38	32	
201 - 300 birds	12	10	
Income incurred in 2017			
50,000 or Less	50	11	
50,001 - 100,000	23	19.2	
100,001 - 150,000	26	21.6	
150,001 - 200,000	48	40	
More than 200,000	12	10	

Source: Field Survey, 2019

It can be seen from the Table 1 that, greater (53.3%) proportion of the respondents had small household 1-3 persons. It shows that 4-6 persons per households accounted for 20% while 7 persons and above per family accounted for 26.7%. The results indicate that majority (85%) of households in the study area had small household size not more than 6 persons per household participating in poultry farming in the area. Agbamu (2011) opined that, number of household size could serve as a means of sourcing agricultural information, thereby increase



access to different mass media channels and invariably, improved productivity, higher income and better standard of living.

The results of Table 1 further shows that 14.2% of respondents interviewed had attained primary school education level while 28.3% respondents have attended secondary education. Substantial number (40%) of the total respondents had attended tertiary education, 15.0% respondents attended none-formal education system while 2.5% of the respondents had not attended any education setting. These suggest that tertiary educated persons participated more in poultry farming followed by those with secondary education in the study area. This further, implies that poultry farmers in the areas are likely to be able to access/understand agricultural information disseminated through various mass media channels or forms. Education helps farmers obtain processes and analyze information sources and also helps them, make appropriate decision to utilize agricultural information in a better way and improve their poultry farming operations (Tadesse, 2008).

Table 1 reveals that 47.5% of respondents had been in poultry business between 6 – 10years, 25.8% were in the poultry business between 11 - 15years, 15.8% for 16 years or more while 10.8% engaged in the business for between 1 - 5 years. This implies that most (about 89%) of the respondents have been into poultry farming for not less than 6 years. This translates to the fact that poultry production was not new to a reasonable number of farmers in the study area.

On the area of training, it was found that about 47% of the respondents have received some forms of training pertaining poultry farming and operations in the last three years while 53.3% indicated that they do not receive any training whatsoever. This implied that there is a hitch in the extension services received in the study area and this could be attributed to shortage of extension personnel. As opined by Agbamu (2011) that there is increasingly low extension-farmer ratio in Nigeria which results in low coverage and inefficiency in service delivery.

Table 1 further shows that majority (58%) of the respondents had farm size below 100 birds, 32% had farm sizes between 101 – 200 birds while 10% had 201 -300 birds. This implies that the respondents were small scale poultry farmers. This means that increased agricultural extension services will be of utmost importance to the poultry farmer so as to boost and upgrade their level of production.

Table 1 also shows that farmers with annual income of less than or equal to ₦50,000 were 9.2%. Those who earned between ₦50, 000 - ₦100,000 annually were up to 19.2% of the respondents and about 21.6% were earning between ₦100,000 - ₦150,000 annually. It was discovered that 40% of the respondents were earning between ₦150,000 – ₦200,000 and only 10% could earn more than ₦200,000 in their farming business annually.

The Accessibility of Village Extension Agents to Farmer

The result from Table 2 below, indicates that 22.5% respondents were always accessing extension services on the basis of problems arising on the course of running the poultry farming business, 60.8% were sometimes accessing the extension agent in attending to anything that might arise but 16.7% of the farmers do not get access to the extension agent whenever the need arises. This implied that there is a general hitch in the extension service delivery in the study area and this could be due to shortage of extension personnel, inadequate transportation facilities. As opined by Agbamu (2011) that there is increasingly low extension-farmer ratio in Nigeria which result in low coverage and inefficiency in service delivery.



Table 2: Distribution of Respondents based on their Accessibility to Village Extension Agents

Accessibility	Frequency	Percentage
Always accessible	27	22.5
Sometimes accessible	73	60.8
Not accessible	20	16.7

Source: Field Survey, 2019

Approximate Distance between Respondents' Residence and the Nearest Extension Worker's Office

Table 3 indicates that 42.5% of the farmers were within 1 – 5km to the nearest extension worker's office, 15.8% live less than 1km distance, 30.0% were living within 5 – 10km, while 5% and 6.7% lived within 10-5km and more respectively. This implies that despite the distance, the farmers have courage to visit the extension office considering the fact that poultry farming is an information dependent venture! Poultry farmers search for information from different source to enhance their productivity (Olaniyi *et al.*, 2008).

Table 3: Distribution of Respondents based on Approximate Distance from Residence to the Nearest Extension Worker's Office

Distance (km)	Frequency	Percentage
Below 1	19	15.8
Between 1-5	51	42.5
Between 5.5-10	36	30.0
Between 10.5-15	6	5.0
More than 15	8	6.7

Source: Field Survey, 2019

Regularity of Extension Agents Visits to Farmers in the Year 2018

Table 4 shows that 20% of the farmers interviewed were not visited by the extension agent in 2018, 21.7% were visited once, 35.3% were visited twice, 13.3% were visited three times within the year, while 17.5% were the proportion of the farmers that were visited four times in 2018 and only 4.2% were visited five times and 1.7% above five times in 2018. Extension contact plays a pivotal role in the provision of different agricultural information sources, and adoption of technologies, thereby enhancing the utilization of such information. Low number of visits can be attributed to shortage of frontline extension personnel in various villages of the study area or use of other alternative means of sourcing information. Olaniyi *et al.* (2008) reported similar findings that inadequate extension contacts as one of the major constraints faced by poultry farmers in Nigeria generally.



Table 4: Respondents on Frequency of Extension Agents Visits to Farmers in the year 2019

Times	Frequency	Percentage
Once	26	21.7
Twice	42	35.0
Three times	16	13.3
Four times	9	17.5
Five times	5	4.2
More than five times	2	1.7
None	20	16.7

Source: Field Survey, 2019

Frequency of Farmers' Visit to the Office of Extension Agent in the Year 2018

Table 5 shows that 4.2% of the farmers visited the office of the extension agent once, 16.7 were visited twice times in 2019 to seek for extension services. 33.3% and 27.5% of the farmers visited the extension office three and four times in 2019, respectively, while 10.0% visited five times. It also showed that 4.2% of the respondents visited the office of extension agent more than five times and none each, respectively, in 2019. This goes with the findings of Oladosu (2006) in Nigeria on farmers' attitude found that farmers complained that AEAs were not giving them sufficient time to guide them, use unfamiliar terminologies to explain recommended practices. This made farmers fail to comprehend what was intended by AEAs and also limits seeking for extension contacts.

Table 5: Respondents based on Number of Visit to the Extension Office in the Year 2017

Times	Frequency	Percentage
Once	5	4.2
Twice	20	16.7
Three times	40	33.3
Four times	33	27.5
Five times	12	10.0
More than five times	5	4.2
None	5	4.2

Source: Field Survey, 2019

Accessibility of Extension Agencies to Farmers

Result from Table 6 shows that most of the extension services that were easily accessible to farmers were that of government agencies as indicated by 77.5%, those having easy access to the service of other extension agencies like non-governmental organization were 11.7%, the farmers having access to the services of private agencies was 10% of the respondents while only 0.8% received training from cooperative society. This is due to the fact that the farmers relied on governments' efforts on information disseminations and there were no private and cooperative extension agents in most of the rural areas.



Table 6: Distribution of Farmers based on Accessibility of Extension Agencies

Extension Agencies	Frequency	Percentage
Government agency	93	77.5
Private agency	12	10.0
Cooperative society	1	0.8
Others	14	11.7

Source: Field Survey, 2019

Respondents Perceptions on Effectiveness of Extension Service Delivery

Table 7 shows that the mean rating of the respondents on the extension service delivery was relatively effective as most of the variables were rated above the boundary limit (3.00) on a 5-point rating scale. Only few variables were rated below the boundary limit. The results show that, extension agents were very effective (4.45) in communication skills; there was adequacy (4.26) of technical knowhow. It also indicated that extension agents displayed good human relation (4.23). Frequency of group meetings of extension agent with farmers in 2019 was not effective (1.84); there was less promptness in attending to farmers (2.76), therefore not effective. It is indicated in the result that the extension agents were always ready to provide solutions to farmers' problems (3.58); messages delivery also was highly encouraging (4.33), though the timing was not convenient for extension agents meeting with farmers (3.78), but the extension agents always have keen interest in interacting with the farmers (3.73) whenever they meet. The standard deviation for all the variables is within the range of 0.061-1.762. This implies that farmers' diverse perceptions on the effectiveness of extension service delivery variables were significant. This concur with the findings of Oladosu (2006) showed that farmers complained about the lack of regular contacts and the duration of the visit was too brief for meaningful exchange of idea and this might have affected effectiveness of AEAs in transferring knowledge to them.

Table 7: Distribution of Respondents Perceptions on Effectiveness of Extension Agents

Extension work	Mean	Std. Deviation	Decision
Use of communications skills	4.45	.260	Very Effective
Adequacy of technical knowhow	4.26	.247	Very Effective
Display good human relation	4.23	.061	Very Effective
Frequency of group meeting with farmers in the year 2018	1.84	1.749	Slightly Effective
Promptness in attending to farmers	2.73	1.762	Slightly Effective
Readiness to provide solutions to farmers' problems	3.53	1.334	Effective
How effective are most of the messages delivered	4.33	.811	Very Effective
Convenient timing for meeting	1.78	1.109	Slightly Effective
Keen interest in interacting with farmers	3.73	1.322	Effective

Decision rule: mean ratings > 3 = very effective, mean = 3 = effective, mean < 3 = slightly effective.

Source: Field Survey, 2019



The Relationship between Socio-economic Characteristics of the Farmers and their Perceptions on the Effectiveness of Extension Service Delivery

Table 8 shows the result of simultaneous regression analysis that was carried out to ascertain the combined effect of these variables (age, gender, household size, educational level, poultry farm size, income, marital status, extension agent contacts and years of farming experience) as predictors. All the predictors yielded significant beta weights with $\beta_1 = -0.253$, $\beta_2 = -0.326$, $\beta_3 = 0.133$, $\beta_4 = 0.222$, $\beta_5 = 0.058$, $\beta_6 = 0.18$, $\beta_7 = 0.262$, $\beta_8 = 0.01$ and $\beta_9 = 0.252$ respectively with their varied t – values which were all statistically significant as their P- values were less than 0.05 in each case with the exception of educational level. This implies that there was significant effect of these variables on the perceived effectiveness of extension services. The results indicated that age and gender of the respondents had a negative significant effect at $P < 0.01$ on the perceived effectiveness. This implies that, as farmers approaches older age, it is likely that they will not appreciate extension activities.

It could be seen from the result that the household size had a significant positive effect at 5% level ($P < 0.05$) on the perceived effectiveness which by implication means that there was linear relationship that is, the more the household size, the more the household head appreciate extension service/activity which in turn favours his farming activities. Even though, as farmer approach older age, there is likelihood that extension appreciation may decline but with efforts of the younger ones of the family, the appreciation of extension service /activity will be improved.

Education level, poultry farm size and income of the farmers all have a linear relationship. That is, an increase in one of these variables leads to the increase in the other variable. In other words, educational level determined the perceived effectiveness of the extension service delivery and thus engagement in the poultry farming and hence the level of income. Farm size could determine the income to be earned. They all had a significant positive effect at 5% level of significant ($P < 0.05$ in each case). Meaning that as extension service is attained by 1%, respondents tend to increase their farm sizes by 5.8%. There is a general agreement that education is associated with receiving and utilization of agricultural information. Education is believed to increase farmers' ability to obtain, process and analyze information disseminated through different sources and helps them make appropriate decisions (Tadesse, 2008).

Similarly, findings show that marital status, contact with extension agent and years of farming experience were strongly and statistically significant ($P < 0.05$ in each case) and have linear (parallel) relationships with the perceptions on the effectiveness of extension services. By implications both marital statuses, contact with the extension agent and years of farming experience will influence the farmers to be more involved in the participation and receiving extension training because they have more sense of responsibility. In a study conducted by Olaniyi *et al.* (2008) it was discovered that, inadequate extension contact was one of the major constraints faced by poultry farmers in Nigeria.



Table 8: Relationship between Socio-economic Variables of the Farmers and their Perceptions on the Effectiveness of Extension Service Delivery

Model	Unstandardized Coefficients		t-ratio	Sig.
	B	Std. Error		
Constant	5.614	.756	7.428	.000
Age	-.253	.156	-1.617	.009
Respondent's gender	-.326	.234	-1.392	.000
Household size	.133	.196	0.680	.000
Education level	.222	.110	2.013	.047
Poultry farm size	.058	.229	0.253	.001
Income	.180	.099	1.815	.000
Marital status	.262	.250	1.050	.000
Extension agent contact	.010	.042	0.231	.000
Years of farm experience	.252	.160	1.572	.019

Source: Field Survey, 2019

CONCLUSION AND RECOMMENDATIONS

The study established that the extension agents were perceived by the farmers to be effective. They were knowledgeable in subject matter and good in how to deliver extension service. They had adequate communication skills and knowledge in conducting their duties. The result also revealed that extension agents were slightly effective in contacting farmers' groups, promptness in attending to farmers, and convenience in timing for meeting with the farmers. Based on the findings above, the following are recommended:

1. More qualified people should be trained, encouraged and employed as extension agents so as to solve the problems of deficit in extension services and poor performance in farm visits by extension agents.
2. Extension agents should improve in fixing convenient time for meeting, contacting farmers in group and promptness in attending the farmers.

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