ANALYSIS OF SOCIO-ECONOMIC FACTORS INFLUENCING POULTRY PRODUCTION IN TORO LOCAL GOVERNMENT AREA OF BAUCHI STATE, NIGERIA

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ABSTRACT

The study was carried out to evaluate the challenges of poultry farming in Toro area of Bauchi state Nigeria. It studied specifically; the socio-economic characteristics; flock size and factors influencing poultry production in the study area. Data were collected using a multistage sampling technique to select 48 poultry farms. Descriptive statistics and multiple regression model were used in analyzing the data. The result shows that, 90% were male, 64% aged between 31-50 years, 97% had formal education and 65% have farming experience of over five years. The structure of farms in the study area has it that, 67% of farms were medium scale farms, 22% as large farms, and 11% as small farms. Regression analysis showed that the coefficients of gender and education were statistically significant (p<0.05 and p<0.01 respectively), farming experience and purpose of keeping poultry were significant (p<0.05) but negatively signed. Disease/parasite and access to credit were ranked the 1st and 2nd constraints, respectively. In conclusion, flock size was found to be influenced by some socio-economic characteristics of the farmers, majority of the farms were operating on a medium scale and are faced with constraints of disease/parasites and credit to expand. The study therefore recommends that government should subsidize the cost of inputs, provide loans/grants to farmers and tackle the problem of disease/pest by revamping its veterinary vaccines production unit.

Key words: Poultry farming, Socio-economics, Flock size, Challenges, Bauchi state.

INTRODUCTION

Poultry is the cheapest source of animal protein, contributing significantly to supplying the growing demand for animal food products around the world (Farrell, 2013). Chickens largely dominate flock composition and make up about 98% of the total poultry numbers kept in Africa (Gueye, 2003). The poultry sector offers the quickest returns on investment outlays in livestock enterprise by virtue of its short gestation period, high feed conversion ratio alongside being one of the cheapest, commonest and best sources of animal protein in the country (Ojo, 2002). This indicates the crucial role it holds in the livestock industry. In the past decades, there has been a recorded improvement in poultry production in Nigeria with its share of the GDP increasing in absolute terms. It contributes 6-8% of GDP, which is about 30% of the total agriculture contribution (NABC, 2020). However, despite the acknowledged importance of poultry industry to the national economy, some glitches continue to truncate the growth path of the industry (Heise *et al*., 2015). Based on this background, the study examined the influence of socio-economic factors on flock size and the challenges of poultry production in Toro L.G.A.

MATERIALS AND METHODS

*The Study Area***:** The study was carried out in Toro local government area (L.G.A.) of Bauchi state, Nigeria. It is located on a latitude 10.06^0N and longitude 9.07^0E. It falls within the Sudan belt of the vegetation of Nigeria with an average annual rainfall of 820.7mm. It has a generally fair weather with temperature ranging from 21^0C to 32^0C (Works department, Toro, 1999).

*Sampling Technique***:** A multi-stage sampling technique was adopted. The first stage involved the random selection of 7 out of the 11 districts, the second stage involved the purposive selection of 3 communities in each of the 7 districts, and the third stage involved the proportionate selection of poultry farms from the selected communities. A total of 48 farms were used as sampled population for the study.

Measurement of Variables: challenges of poultry production were measured with 4-point numerical rating scale of major challenge = 4; minor challenge = 3; not a challenge = 2 and opportunity = 1.

Analytical Techniques: Data collected were subjected to descriptive and inferential statistics; simple descriptive statistics like means, percentages and frequency distribution were used to achieve objectives (i), (ii), while multiple regression was used to test the hypothesis.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Respondents

Table 1 revealed that, 65% of the respondents fell within the household range of 6-10, and the mean household size was 8 people. In agreement with this result, Mukhtar (2012) found the mean household size of the respondents to be 7 people in Bauchi local government. Majority (89.58%) of the respondents were men. This finding is in line Ojo (2003), in their work, they found 71% of poultry farmers in Kaduna state to be males. Larger proportion (64.6%) farmers are within the youthful age of 31-50 years; the mean age was 38 years. This implies that poultry production in the study area was embarked upon by men and women who are in their prime and active age of production, suitable to overcome challenges which poultry farming in the developing countries like Nigeria requires. This is similar to the finding of Anthonia (2015) who reported 36 years as the mean age of small scale broiler farmers in Delta state. Majority (97.4%) of the farmers had formal education, this agrees with the findings of (Mukhtar, 2012) which indicated 99% literacy among poultry farmers in Bauchi local government. This research also revealed that greater percentage (85%) were married, this agrees with Mukhtar (2012) who reported 75% (married) and 25% (single) in Bauchi local government.

Table 1: Socio-Economic Characteristics of Respondents

Variable	Frequency	Percentage %
Gender		
Male	43	90
Female	5	10
Household size		
1-5	5	19.23
6-10	17	65.38
11-15	4	15.38
Mean	**8**	
Age group		
11-30	11	22.9
31-50	31	64.6
51- 70	6	12.5
Mean	**38**	
Level of Education		
Primary education	1	2.6
Secondary education	13	33.3
Diploma	10	25.6
Degree	14	35.9
Masters	1	2.6
Marital Status		
Single	7	15
Married	41	85
Divorced/separated	-	-
Widowed	-	-

Flock Structure and Dynamics

Table 2 showed the structure of the farms in the study area as small, medium and large farms based on the classification of Omotosho and Ladele (1988) who classified poultry egg farms as; small scale farm which contains less than 1000 birds, medium-scale farms had between 1000 to less than 5000 birds and large-scale poultry farms starts from 5000 birds. Majority (67%) were found out to be medium scale farms, 22% as large farms, and 11% as small farms. This implies that poultry production in the study area is characterized by medium scale farmers. This finding disagrees with Mukhtar (2012) that reported majority (53%) of the farms in Bauchi local government operating on a small scale production process.

Table 2: Structure of Farms in the Study Area

Farm size (No. of birds)	Frequency	Percentage %
Small farm (<1000)	5	11
Medium farm (1000<5000)	30	67
Large farm (5000 & above)	10	22
Total	**45**	**100**

Socio-economic Factors Influencing Poultry Production

From the result obtained and presented in Table 3, the R (multiple correlation coefficient) value of 0.631 indicates a good level of prediction, R^2 (coefficient of determination) value of 0.39 means that, 39% of the dependent variable (Flock size) is explained by the independent variables. The F-value of 2.829 was significant at 5% level of significance. The regression analysis revealed that flock size was significantly predicted by gender and education ($p < 0.05$ and $p < 0.01$ respectively), while experience and purpose of keeping poultry were significant ($p < 0.05$) but negatively signed. This implies that as education level and gender increases, flock size is predicted to increase, while as experience and purpose of keeping poultry increase, decrease in flock size is predicted holding all other variables constant. In a similar finding, to determine flock size among broiler farmers in Kaduna state, Emaikwu *et al*. (2011) observed that education significantly predicted flock size, while age and marital status were not significant at 5% level of significance.

Table 3: Regression Analysis for Flock Size/Socio-Economic Characteristics Relationship

Variables	Estimated parameter	Coefficients	Beta	T value	Significant levels
(Constant)	β_0	12991.865		0.881	0.385
Gender	β_1	8515.168	0.340	2.261	0.031*
Education	β_2	1237.905	0.449	2.888	0.007**
Age	β_3	-3690.714	-0.314	-1.847	0.075ns
Employment	β_4	-2189.643	-0.142	-.911	0.370ns
Experience	β_5	-4490.289	-0.345	-2.205	0.035*
Purpose of keeping poultry	β_6	-8578.301	-0.377	-2.237	0.033*
Marital status	β_7	5166.597	0.261	1.604	0.119ns

R=0.631, R^2 = 0.39, F= 2.829*, * Significant at the $p < 0.05$, **Significant at $p < 0.01$, ns= not significant.

Challenges of Poultry Production

Among the 17 constraints tested to influence poultry production in the study area, 15 have influence on production, while 2 have little or no influence on production. Disease/parasite gained the highest mean score (3.62), thus, the 1st factor influencing production in the study area. Corroborating this assertion, Adewole (2012) posited that disease remain one of the major threat to boosting poultry production in Nigeria. Access to credit, having gained a mean score of 3.51, was the 2nd factor influencing production. This will ensure that most farms will continue to stagnate in small scale class, because farmers could not acquire credit to expand their farms to

large scale production. This agrees with the findings of Mukhtar (2012) that ranked finance as the 1st constraint to poultry egg production in Bauchi state. Climate effect was the 3rd, cost of drugs and vaccines was rated as the 4th and were significant. The least two among the ranking scale were labour availability and availability of poultry production skills representing the 16th and 17th factors respectively.

Table 4. Factors Influencing Chicken Rearing

Factors	Major challenge F	%	Minor challenge F	%	Not a challenge F	%	Opportuni-ty F	%	Mean score	Rank	D
Disease and parasites	32	67	14	29	2	4	-	-	3.62a	1st	S
Access to credit	35	73	5	10	6	13	2	4	3.51a	2nd	S
Climate effects	26	54	16	33	5	11	1	2	3.43a	3rd	S
Cost of drugs and vaccination	29	60	10	21	8	17	1	2	3.38a	4th	S
Avail. of poultry rearing tech.	23	48	19	40	6	13	-	-	3.34a	5th	S
Cost of initial inputs-	24	50	12	25	8	17	3	6	3.21b	6th	S
Selling price for chicken/egg	19	40	19	40	9	18	1	2	3.15b	7th	S
Feed availability and costs	22	46	13	27	10	21	3	6	3.11b	8th	S
Avail. of quality chick breeds	14	29	24	50	9	19	1	2	3.04b	9th	S
Predators	9	19	32	66	6	13	1	2	3.00b	10th	S
Theft/insecurity	12	26	24	51	10	21	1	2	3.00b	11th	S
Availability of land/space	9	19	25	52	12	25	2	4	2.85b	12th	S
Marktng and avail. of markets	8	17	22	46	15	31	3	6	2.72b	13th	S
Water availability	7	15	18	38	22	46	-	-	2.68b	14th	S
Avail. of vet./extnsn services	7	14	21	44	14	29	6	13	2.60b	15th	S
Labour availability	3	6	15	31	30	63	-	-	2.45c	16th	NS
Avail. of Pltry. Prod. Skills	7	15	15	31	15	31	11	23	2.36c	17th	NS

F= frequency, D = Decision, S = Significant, NS = Not Significant. Avail. = Availability, Extnsn= Extension, Pltry= poultry, Prod. =Production, Marktng = Marketing, Tech = Technology. Mean score of: 1.00 -1.75 = opportunityd; 1.76 - 2.50 = not a challengec; 2.51 - 3.25 = minor challengeb; 3.25 - 4.00 = major challengea.

CONCLUSION AND RECOMMENDATIONS

Largest proportion of poultry producers in the study area operated on a medium-scale, socio economic characteristics has influence on flock size and poultry production is faced with the numerous challenges including disease, poor credit facilities and cost of inputs. It is therefore recommended that government should subsidize the cost of inputs, provide loans/grants to farmers and tackle the problem of disease/pest by revamping its veterinary vaccines production unit.

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