Short Research Article

Assessment of factors affecting poultry production in Imo State, Nigeria

ABSTRACT

The study was on the assessment of the factors affecting poultry production in Imo State, Nigeria. Multistage sampling technique was used in selecting the respondents. A total of eighty-four (84) poultry producers were randomly selected with the aid of a well-structured questionnaire. Data were analyzed using descriptive statistics and multiple regression models. The result showed that majority (59.5%) of the producers were male, mean age was 45years, mean household size was 6 persons, 67.86% of the producers attended tertiary education, mean years of farming experience was 9.3years. The multiple regression analysis showed that farm experience, drug costs, farm size and disease occurrence were statistically significant at 10% level of probability implying that these are the key factors affecting poultry production. The major constraints militating against poultry production were high feed cost, lack of fund, the outbreak of disease and high transportation cost. The study recommended that the government should provide credit facilities to poultry producers to abate lack of fund and provision of appropriate vaccines in the study area.

Keywords: Assessment, Factors, Poultry production, Imo State

Introduction

Poultry production plays an important economic and nutritional role as well as the socio-cultural role in the livelihood of both urban and poor rural households in Nigeria and many other developing countries (Adesiji and baba, 2013). Poultry is domestic fowls raised for food either for meat or for egg production. They include chicken, turkey, duck, goose, quail, guinea fowl etc. Poultry products (egg and meat) are highly nutritious and give good economic returns to man. According to Okunola & Olofinsawe (2007), Poultry meat is a good source of animal protein which is highly preferred to beef and pork, based on its adaptability, taste, ease of preparation, health consideration, nutrient composition and contribution to food security. The agricultural sector provides food and nutrition while poultry production accounts for 19% of the meat supply (SAGTAP, 2012). In Nigeria, poultry offers about 15% of the total annual protein intake with approximately 1.3kg of poultry products consumed annually per head (Ologbon and Ambali 2012).

There has been an increase in poultry production in Nigeria as a result of an increased rate of demand for poultry products across the globe lately. This tends to the fact that poultry has a lot of advantage over other livestock. This is because of its ease of production and short payback period when compared to other livestock. According to Effiong *et al*, (2014) Poultry farming contributes to household food security and enhances sustainable farming in many developing economies mostly in Nigeria. Poultry wastes supplies inputs (organic manure) to crop farmers for crop production, supplies raw material (egg and meat) to confectionary industries. Also, it improves food quality and is highly a renewable asset in over 80% of the rural household. Despite its importance and contributions, poultry production is yet to experience sufficient growth due to major problems like risk, uncertainties and some other factors as stated by (Effiong *et al*, 2014).

Many programs have been developed to ensure that the demand for animal protein was met. Some of these programs include farm settlement scheme, agricultural development project(ADP), better life program, micro-credit scheme for livestock production and the most recent program was the united nation development programme (UNDP) which entailed rendering sponsorship in establishing livestock parent/foundation stock at community level in Nigeria with the aim of training farmers on improved livestock breeds for gradual upgrading local breeds and also train farmers on improved modern rearing and production methods of livestock and increase the production of livestock products and also farmers income(Aladejebi *et al.*, 2014). In spite of the development of these programs, the aim of the poultry industry which is to ensure self-sufficiency in animal production and consumption has not been reached. This is because the 5gm/caput consumption per day of poultry products is far less than the 35gm/caput consumption per day as recommended by food and agriculture (FAO), Ojo (2003) as reported by Bamiro *et al* (2017). This is because poultry production is constrained by several factors which are not limited to inputs used in production only. According to Ogolla (2016), factors influencing poultry production is not only based on physical inputs such as land area, labour, the quantity of feed used, quantity of vaccine applied and quantity of energy used, but also socio-economic, demographic, institutional and non-physical factors. Socioeconomic factors like; age, level of education, number of years of poultry farming, experience, engagement in other income-generating activities other than poultry farming, access to credit etc. However, studies that have been carried out on factors affecting poultry production in Imo State are insufficient and calls for

attention, therefore the need to assess and pinpoint those factors in order to device a means to solve them and maximize output of poultry production in the study area and this was the knowledge gap that this study hoped to be filled. The specific objectives of this study were to; examine the socio-economic characteristics of poultry producers, determine the factors affecting poultry production and examine the constraints militating against poultry production in Imo State.

Materials and Methods

The study was carried out in Imo State and it lies on the Southeast geopolitical zone of Nigeria. The state is bordered on the east by Abia State, in the west river Niger and Delta State to the north by Anambra State and to the south by Rivers State. It is divided into three Agricultural zones namely; Owerri, Orlu and Okigwe and comprises of 27 Local Government Area. The population of the state stands at 4.5million people (federal Republic of Nigeria Official Gazette, 2007).

Imo State lies within the latitude $4^{0}45^{1}$N and $7^{0}15^{1}$N and longitude $6^{0}50^{1}$E and $7^{0}25^{1}$E with a land area of about 5,100km^{2} (National Bureau of Statistics, 2014). The rainfall distribution is bi-modal peaks in August and September. Variation in annual rainfall is between 1900 and 2200mm. Temperature is uniform in annual temperature of about 20^{0}C. The annual relative humidity is 75 per cent and the state lies within the rainforest agro-ecological zone. About 80 per cent of the people is involved in Agriculture. 70 per cent engaged in Agriculture, producing food crops like cassava, cocoyam, yam, maize, melon vegetable etc., and livestock such as poultry, sheep, goat, and rabbits at subsistence levels. A small per cent of the population also engages in commercial agriculture.

The study made use of primary data which were collected with the aid of a well-structured questionnaire, personal interview and observation while the secondary information was gotten from journals and relevant literature. Data were analyzed using descriptive statistics such as mean, frequency distribution tables and percentages, and Ordinary least squares regression model. Ordinary Least Squares Regression Analysis is a statistical tool used for evaluating the relationship between one or more independent variables $X_{1,}$ X_{2}……. X_{8}, to a single continuous variable Y. According to Iheke and Igbechina (2016), he used ordinary least square regression to

analyze the effect of risks on poultry production. The ordinary least squares model is expressed as shown below:

$Y = f(X_1\ X_2\ X_3\ X_4\ X_5\ X_6\ \ X_7\ X_8 + e)$

Where, Y = dependent variables (output)

X_1= age of the producers (number in years)
X_2 = Educational level (number in years)
X_3 = experience (number in years)
X_4 = feed cost (₦)
X_5 = cost of labour (₦)
X_6 = capital (₦)
X_7 = farm size (ha)
X_8 = diseases
e = stochastic error term

Results and Discussion

Socioeconomic characteristics of the respondents

Table 1 shows the socioeconomic characteristics of poultry farmers in the study area.

Variables	Frequency	Percentage
Age		
24-33	20	23.81
34-43	19	22.62
44-53	21	25.00
54-63	14	16.67
64-73	10	11.90
Mean age=45.2years		
Gender		
Female	34	40.48
Male	50	59.52
Years spent in school		
0	2	2.38
1-6	8	9.52
7-12	17	20.24
13-18	57	67.86
Mean=13.7years		
Household size		
1-5	44	52.38
6-10	31	36.90
11-15	6	7.14
16-20	3	3.57
Mean=6 persons		
Marital status		
Single	23	27.38
Married	41	48.81
Divorced	8	9.52
Widow	12	14.29
Experience in poultry enterprise		
1-7	40	47.62
8-14	25	29.76
15-21	14	16.67
22-27	3	3.57
28-34	2	2.38
Mean=9.3years		

Source: Field Survey Data, 2019.

The study revealed that the mean age of poultry producers was 45.2 years which implied that majority of them are relatively aged, and it might have adverse effects on their operation activities as most activities are strenuous which requires strength and physical agility of farmers. Also, 59.52% of the respondents were male while only 40.48% were female implying that poultry production enterprise in the area is dominated by male. The mean year of education was 13.7 years which implied that most people in the poultry enterprise are literate and thus having a positive impact on managerial capacity and acquisition of modern agricultural business management skills and technological innovation. The mean household size was 6 persons per household which implied that there is an abundant supply of family labour in the area which would serve as a source of cheap labour for operations on the farm. The mean year of experience was 9.3 years which indicated that the majority of them had been in the enterprise for quite a long time.

Table 1: Regression results of the determinants of factors affecting poultry production

Variables	**Linear**	**Exponential+**	**Semi-log**	**Double-log**
Constant	-90.85083	4.771397	-2257.568	-1.281279
	(-0.9209)	(6.9350)	(-0.2291)	(-1.6461)
Age	1.947318	0.015891	-1108.597	0.273363
	(1.2798)	(1.4974)	(-0.4540)	(1.4567)
Educational level	-0.095939	0.007207	-354.4686	1.02e-05
	(-0.0225)	(0.2419)	(-0.3090)	(0.001)
Farm experience	-4.819708	0.036583	-1244.011	-0.081089
	(-1.6494)*	(1.79499)*	(-1.4068)	(-1.1931)
Feed cost	-7.08e-07	2.10e-07	-395.0514	0.008909
	(-0.0873)	(3.7032)	(-0.9750)	(0.2861)
Drug Cost	2.74e-05	1.66e-05	-583.5236	0.030099
	(0.0325)	(2.8299)***	(-1.4470)	(0.9711)
Source of capital	-8.966528	-0.116552	-59.70732	-0.013791
	(-0.7591)	(-1.4148)	(-0.1441)	(-0.4332)
Farm size	0.99953	0.000102	3407.228	0.98724
	(352.9413)***	(5.1432)***	(5.8245)***	(21.9580)***
Disease occurrence	47.98433	-0.388648	-948.8739	0.116963
	(1.6071)*	(-1.8663)*	(-0.9012)	(1.4454)
R-squared	**0.599513**	**0.616818**	**0.407292**	**0.43393**
Adjusted R-squared	**0.499461**	**0.575946**	**0.34407**	**0.37355**
S.E. of regression	**131.2194**	**0.915197**	**4576.752**	**0.351761**
Sum squared resid	**1291390**	**62.81898**	**1.57e+09**	**9.280167**
Log likelihood	**-524.0882**	**-106.9873**	**-822.4456**	**-26.66747**

F-statistic	**8.5788**	**15.0912**	**6.442242**	**6.2408**

Source: Field Survey Data, 2018

***** = sign @ 1%, ** = sign @ 5% and * = sign @ 10%.**

+ = Lead equation

From the above table, farm experience, drug cost, farm size, disease occurrence was statistically significant, at a 10% level of probability. The coefficients of farm experience, drug costs and farm size were found to have a positive relationship with an output of poultry production and were statistically significant at 5% level of probability, this implied that increase in farm experience, drug costs and farm size would increase the level of a poultry farmer. The coefficient of the occurrence of the disease is negative hence has an indirect relationship with the output of poultry production.

The coefficient of farm experience was positive and significant implied that the experience farmers have higher farm output than the less experienced farmers as they have a better understanding of the production techniques that could increase their production. The coefficient of farm size is positive and significant implies that the larger the farm size, measured in numbers of birds reared, the more the poultry farmers demand microfinance credit to purchase other factor inputs necessary to run a profitable farm. The coefficient of drug cost was positive and this implied that expenses on costs have a positive significant relationship on their output. It was understandable that poultry management requires a significant amount of drugs and medication in terms of routine vaccination to produce a high yield. The coefficient of disease occurrences was negative and significantly affect poultry output, it implied that higher disease occurrence increases birds mortality and adversely affect the production output.

Table 2: Constraints militating against poultry production

Constraints	Frequency*	Percentages*	Rank
Pilfering	44	52.38	7th
The outbreak of Pest and disease	67	79.76	3rd
High Feed cost	70	83.33	1st
Lack of fund to expand	68	80.95	2nd
High mortality rate	35	41.67	8th
Unavailability of foreign feeds	25	29.76	11th
Shortage of water	24	28.57	12th
Lack of start-up capital	54	64.29	5th
Poor market demand	51	60.71	6th

Lack of skill to manage climate issues	29	34.52	10th
Lack of water	31	36.90	9th
High transport cost	65	77.38	4th

Source: Field Survey Data, 2018

***Multiple response data**

From the table above, the major constraints militating against poultry production are high feed cost (83.33%), lack of fund to expand (80.95%), outbreak of disease (79.76%), High transport cost (77.38%), and lack of start-up capital (64.29%), poor market demand (60.71%) and pilfering (52.38%). These implied that farmers are facing challenges that limit poultry production in the area coupled with adverse effects of climate change due to the ever-increasing average annual temperature. Farmers lamented that inadequate credit facilities were the major constraint in their quest towards adapting to the effect of climate change on poultry production.

Conclusion

From the study, we conclude that poultry production in the study area are male-dominated and the major factors affecting poultry production in the study area were farm experience, drug costs, farm size and disease occurrences. Findings also revealed high feed cost, inadequate funds, the outbreak of diseases and high transportation cost as the major constraints militating against poultry production in the study area.

Recommendation

The need to reduce high feed cost was imperative, the study, therefore, recommends that the government should provide credit facilities to poultry producers to abate lack of fund and provision of appropriate vaccines in the study area.

References

Sheep and goats transformation action plan (SAGTAP), (2012). *Implementation Plan for Livestock Transformation Action Plan*. Federal Ministry of Agriculture and Rural Development, Abuja, Nigeria. Pp 20.

Ologbon, O.A.C and O.I. Ambali, 2012. Poultry enterprise combination among small scale farmers in Ogun State, Nigeria: A technical efficiency approach. J. Agric. Vet. Sci., 4:7-15.

National Bureau of Statistics. (2014). Imo State Information. Retrieved from http://nigerianstat.gov.ng/information/details/Imo.

Okunola JO & Olofinsawe A (2007). Effect of extension activities on poultry production in Ondo State, South Western Nigeria. *Agricultural Journal*, **2**(5)**:** 559-563.

Effiong, *E. O.;* Enyenihi, E. A. and A. A George, (2014). Analysis of farming risk among small scale poultry farmers in etim Ekpo Local Government Area of Akwa Ibom State, Nigeria. Nigerian Journal of Agriculture, Food and Environment 10(1): 59-64.

Aladejebi O.J, Afolami C.A and Okojie L.O (2014). Comperative profitability of poultry farming under Battery Cage and Deep Litter System in Ogun State

Bamiro O.M, Ajiboye B.O and Adeyonu A.G (2017). Technical Efficiency of Battery Cage and Deep Litter System of Production in South West Nigeria

Adesiji I.S and Baba S.T (2013). Effect of climate change on poultry production in Ondo State.Russian journal of agricultural and socioeconomic sciences, 2(14)

-.