Short Research Article

Assessment of factors affecting poultry production in Imo State, Nigeria

ABSTRACT

The study is on 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 well-structured questionnaire. Data were analyzed using descriptive statistics and multiple regression models. The result shows 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, 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 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 are 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. 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 is 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 rural household. Despite its importance and contributions, poultry production is yet to experience a 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 in other to ensure that the demand for animal protein is 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 is the united nation development programme (UNDP) which entails 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 the development of these programs, the aim of 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 due to fact that poultry production is constrained by a number of 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, 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 pin point those factors in order to device a means to

solve them and maximize output of poultry production in the study area and this is the knowledge gap that this study hopes to fill. The specific objectives of this study are 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 South east 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 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 20^0C. The annual relative humidity is 75 percent and the state lies within the rainforest agro-ecological zone. About 80 percent of the people are involved in Agriculture. 70 percent 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 percent of population also engages in commercial agriculture.

The study made use of primary data which was collected with the aid of well-structured questionnaire, personal interview and observation while the secondary information was gotten from journals and relevant literatures. Data was 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 $X_1, X_2 \ldots\ldots\ldots X_8$, 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 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 implies 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 implies that most people in the poultry enterprise are literate and thus having 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 implies that there is abundant supply of family labour in the area which would serve as source of cheap labour for operations on the farm. The mean year of experience was 9.3 years which indicated that 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 10% level of probability. The coefficients of farm experience, drug costs and farm

size were found to have positive relationship with output of poultry production and were statistically significant at 5% level of probability, this implies that increase in farm experience, drug costs and farm size would increase the level of poultry farmer. The coefficient of the diseases occurrence is negative hence has indirect relationship with output of poultry production.

The coefficient of farm experience is positive and significant implies that the experience farmers has higher farm output than the less experienced farmers as they have 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, measure in numbers of birds reared, the more the poultry farmers demand for microfinance credit to purchase other factor inputs necessary to run a profitable farm. The coefficient of drug cost is positive and this implies that expenses on costs have positive significant relationship on their output. It is understandable that poultry management requires significant amount of drugs and medication in terms of routine vaccination to produce high yield. The coefficient of disease occurrences is negative and significantly affect poultry output, it implies 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
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%). This implies 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 lament that inadequate credit facilities is a 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 is 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, 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 is absolutely imperative, the study therefore recommend that the government should provide credit facilities to poultry producers to abate lack of fund and provision of appropriate vaccines in the study area.

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