

ANALYSIS OF PROFITABILITY OF POULTRY EGG PRODUCTION UNDER DEEP LITTER SYSTEM IN JOS SOUTH LOCAL GOVERNMENT AREA OF PLATEAU STATE, NIGERIA

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ABSTRACT

The study on the analysis of profitability of poultry egg production under deep litter system was carried out in Jos South Local Government Area of Plateau State, Nigeria. The specific objectives were to: describe socio-economic characteristics and determine the costs and returns of poultry egg farmers in the study area. Primary data were collected from poultry egg farmers through the use of structured questionnaire and the study was carried out between July and October 2021. Multi-stage sampling techniques was employed to select 105 farmers from which input-output data were collected. Descriptive statistics and net farm income model were employed for data analysis. Descriptive statistics result revealed that 83% of the respondents fall within the age range of 31 to 50 years with mean age of 42 years, majority of the farmers (91.4%) had formal education. Results also indicated that majority of the farmers (62%) had farming experience ranges from 11 to 20 years with mean of 5 years. Findings further revealed that the average rate of return on investment (return per naira invested) was ₦1.25 indicating that for every one naira invested in poultry egg production in the study area, a profit of ₦1.25 was made. It therefore implies that poultry egg production in the study area was economically viable.

Keywords: Profitability, Poultry egg, Plateau state.

INTRODUCTION

Poultry production is one of the important sub-sectors in the Nigerian economy. In addition to its contribution to the Gross Domestic Product (GDP) and provision of employment opportunities, poultry production is a major source of protein in the country (Ohajanya, *et al.*, 2013).

MATERIAL AND METHODS

Study Area

The study was conducted in Jos South Local Government Area of Plateau State, Nigeria. It is situated at the North Western part of the state with its headquarters at Bukuru, which is about 15 km from the state capital, Jos. It shares boundary with Jos North Local Government Area in the North, in the East with Barkin Ladi Local Government Area, in the south with Riyom Local Government Area and in the west with Bassa Local Government Area. The Local Government area has four districts: Du, Gyel, Kuru and Vwang districts and twelve wards. It has total land area of about 1,037 km² with a population of 306,716 National Population Commission (NPC), (2006), with a projected population of 495,675 as at 2021.

Sampling Procedure

A multistage sampling technique was used to select respondents for the study. In the first stage, Jos South LGA was purposely selected based on the concentration of poultry farmers. In the second stage, three villages were randomly selected from each of the four districts making a total number of 12 villages for the study. The final stage involves a proportional sampling of farmers from each of the villages selected. Thirty five percent (35%) of the sample frame (300) was used as the sample size. A total of 105 farmers were proportionally selected.

Table 1: Sample frame and sample size of poultry egg farmers in the study area

DISTRICTS	VILLAGES	SAMPLE FRAME	SAMPLE SIZE (35%)
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Vwang	K-Vom	17	6
	Gutt	12	4
	Rawuk	19	7
Du	Latya	25	9
	Dwei	21	7
	Dogona Hauwa	22	8
Gyel	Rantya-Gyel	35	12
	Lohdik	40	14
	Dong	33	12
Kuru	Kwata	24	8
	Dakel	30	10
	Dawul	22	8
TOTAL		300	105

Source: Field Survey, 2021**Data Collection and Analysis**

Primary data were used for this study. These were collected with the aid of structured questionnaire, using interview method. The information was collected on farmers' socio-economic characteristics and inputs used like feed, medication, day-old-chicks and labour. The data were analyzed by means of descriptive statistics which involved the use of percentages and means and Net Farm Income (NFI). The formular for net farm income is stated as follows:

$$\text{NFI} = \text{TR} - \text{TC}$$

Where;

NFI = net farm income (₦) per 100 birds

TR = total revenue (₦)

TC = total cost of production (₦)

TC = TVC + TFC

TVC = total variable cost

TFC = total fixed cost.

The fixed inputs are not normally used up in a production cycle. They were depreciated using the straight line method given by:

$$D = \frac{P-S}{N}$$

Where:

D = Depreciation (₦)

P = purchase value (₦)

S = salvage value (₦)

N = life span of asset (years)

Return per naira invested (RNI) was obtained by dividing the total revenue (TR) over the total cost (TC).

$$\text{Therefore, RNI} = \frac{\text{TR}}{\text{TC}}$$

Where;

RNI = return per naira investment

TR = total revenue

TC = total cost

Decision Rule:

RNI > 1, it implies there is profit in production

RNI = 1, the farmer is at breakeven

RNI < 1, the farmer is at loss.

RESULTS AND DISCUSSION**Socioeconomic characteristics of poultry farmers**



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Summary statistics of the findings reported in Table 1 indicate that age of poultry egg farmers ranges between 21 to 70 years and mean age of 42 years. This implies that majority of farmers were middle aged and there is likelihood of increased efficiency in poultry production. Also, farmers within the age category of 41-50 constituted the majority of poultry farmers with 60% indicating that poultry farming in the study area was dominated by an agile workforce that could handle the stress involve in poultry to increase their efficiency. The findings agreed with Ogheneruemu and Dominic, (2020). About 92% of the poultry farmers had one form of education or the other while about 9% had no formal education. Education could affect their chances of using improved breeds which can boost poultry egg output. About 62% of the farmers in the study area had farming experience of 11-20 years with mean of 5 years. Years of farming experience according to Oladimeji & Abdulsalam, (2013) is a factor that enhances agricultural productivity among farming households in Nigeria.

Table 2: socio-economic characteristics of the respondents

Variables	Frequency	Percentage
Age of poultry farmers (years)		
21-30	12	11.4
31-40	24	22.9
41-50	63	60.0
>50	6	5.8
Total	105	100.0
Mean=41.8		
Educational level		
No formal education	9	8.57
Primary education	13	12.38
Secondary education	49	46.67
Tertiary education	34	32.38
Total	105	100.0
Poultry farming experience		
1-5	29	27.62
6-10	11	10.48
11-15	37	35.24
16-20	28	26.67
Total	100	100.0
Mean=4.70		

Source: Field survey, 2021

Average costs and Returns in Poultry Egg Production

Results in Table 3 indicates that the net farm income was ₦3,798.75/ layer and the average rate of returns on investment (return per naira invested) was 1.25, indicating that for every ₦1 invested in egg production in the study area; a profit of ₦1.25kobo was made. Thus, it could be concluded that egg production in the study area was economically viable. The finding agreed with Tijjani *et al.*, 2012

Table 3: Average Costs and Returns of poultry farmers (₦ per bird)

Variables	Value/100 layers (₦)	% Contribution
Revenue		
Egg	18,000.25	
Manure	1,100.53	
Total Revenue	19,100.78	
Variable Cost		
Cost of feed	13,700	89.50
Cost of labour	500.30	3.27

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Cost of Day-old chicks (D.O.C)	295.13	1.93
Cost of medication	650.25	4.25
Total Variable Cost	15,145.68	
Fixed Cost		
Depreciation on housing	100.25	0.66
Depreciation on equipment	60.50	0.40
Total Fixed Cost	160.75	
Total Cost (TC)	15,306.43	
Net Farm Income = TR –TC	3,794.35	100
Return Per Naira Invested = (TR/TC)	1.25	

Source: Field Survey, 2021.

Conclusion

Based on the findings of this study, it can be concluded that poultry egg production in the study area is profitable by returning ₦1.25k to every ₦1.00 invested. Given that egg is an important staple food in Plateau state, and Nigeria in general any attempt to increase its productivity would be a right step towards the resolution of food crisis and would also increase the country's Gross Domestic Product (GDP).

Recommendations

The results from the study revealed that poultry egg production in the study area is profitable. Therefore, more youth should be advised to go into poultry egg production which will provide more job opportunities for the teeming population that are unemployed as well as bridge the gap of protein shortage in Nigeria.

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