ANALYSIS OF THE PROFITABILITY OF POULTRY EGG PRODUCTION IN ETIM EKPO LOCAL GOVERNMENT AREA OF AKWA IBOM STATE, NIGERIA

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ABSTRACT

The study analyses the profitability of poultry egg production in Etim Ekpo Local Area of Akwa Ibom State. Primary data were collected from 75 poultry egg producers selected through a multi-stage sampling technique, using a structured questionnaire. Percentage, frequency and budgetary analysis were used to analyze the data. The findings revealed that majority of poultry egg producers were male representing about 71% of the poultry egg producers, and the mean age was 41 years. The study revealed that, the poultry egg producers in the study area had one form of education or the other which significantly contributed to increase in poultry egg production in the study area.About 83% of the poultry egg producers were married, while the average household size was 4 persons per family. Only 27% of the poultry egg producers accepted that, they belong to Cooperative Society and about 69% had an average income that stood at ₦70,800 per month. With respect to the profitability of poultry egg production, the result indicated that for every ₦1 invested in the poultry egg production business, there is a return of ₦2. The result from budgetary analysis revealed that there is a significant relationship between input and output in poultry eggs production business; more so poultry egg production is a profitable investment. The following recommendations were made: reduction in input cost through subsidy on poultry equipment and credit facilities, and better management practices and encouragement of farm records keeping for profit evaluation.

Keywords: Analysis, Profitability, Poultry, Egg Production

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INTRODUCTION

Poultry farming is the art and science of raising domestic birds for the purpose of using their meat and eggs for food. In Nigeria, so many farmers are into poultry production, but the level of technology application remains at the low level which often results in low productivity.

The term poultry simply mean birds that are domesticated and reared at home for provision of food such as egg and meat for human consumption and for the generation of income for the national economy and the producer as well. Other products such as poultry feathers and poultry droppings are also of economic importance to man. Poultry birds also provide income to the farmers. Haruna, Sani, Danwanka, and Adejo (2012). Nutritionally, consuming an egg per day is a good way of adding proteins, fats, vitamins, and minerals in human diet. According to Hamzat, Taiwo, and Ogunleye, (2020), an average sized egg contributes about 80 calories of energy to our body. They further asserted that egg contains not only a trace of carbohydrate, but it is also considered to be a replacement for meat as it contains all essential amino-acids in adequate proportion required by the body for general growth and repair.

The Nigerian poultry egg industry contributes about 25% to agricultural GDP. Since 2010, there has been a purposeful national drive to promote agriculture as a commercial enterprise. The Federal Government encouraged farmers to improve from subsistence to commercial agriculture. The Nigerian poultry egg industry, being a well-organized sub-sector in the agricultural sector and contributing 25% of the total agricultural contribution to GDP, was well positioned to benefit from this and other measures. The poultry egg industry has also witnessed tremendous technical improvement over the last decade and continues to contribute to achieving Nigeria's food sufficiency and economic growth. (Akpan and Udoh, 2018). For so many years now, poultry egg production has improved significantly, the growth rates of production have increased but not so remarkable. The output level remains low compared to the input committed in production and the product is grossly inadequate because the supply is lower than demand. High cost of poultry feed increase would rather affect the total profit of the poultry egg farmers because the increase in poultry products prices is not commensurate with feed price increase especially due to the dwindling purchasing power of the populace (Hassan, 2016).

In Nigeria, the national policy on poultry egg production is aimed at attaining self-sufficiency and become the foremost exporter of poultry egg in Africa. But recently, the performance of poultry industry in Nigeria has fallen below expectation due to high cost of feed arising from fluctuations in feed supplies, rising prices of ingredients, poor feed ingredients qualities, poor

storage facilities that lead to deterioration and inefficiency in production and the cost of production becomes too high (Olatunji & Ifeanyi-Obi, 2011).

Agriculture has long been the livelihood of the rural dwellers that are characterized by diminutive scale operation, use of crude implements, small production and low livelihood (Esheya, 2021). Poultry egg production by these rural dwellers has faced some similar challenges as well since they are part of agricultural operation. Such challenges may have includes high cost of feed, poor management, low level of capital etc. (Olatunji, *et al.*, 2011). Bukunmi and Yusuf (2015) carried out a study in order to determine socio-economic factors influencing poultry egg production, using multiple regression analysis. The result revealed that, four out of the eight variables used were significant. The number of layers was significant at 0.01 levels, level of education and years of experience were significant at 0.05 level, while access to credit facilities was significant at 0.1 level of probability. The level of education had a positive coefficient (77.844). This implies that a unit increase in the level of education of the respondent will lead to increased poultry egg production. This could be because education helps the farmers to understand better the innovation introduced to them as regards poultry egg production and also help them to make sound and useful economic and managerial decisions.

Akerele, Ologbon, Akintayo and Nuwemuhwezi (2019) studied Technical Efficiency in small and Medium Scale Poultry (EGG) Production in Ogun State, Nigeria. The result on age showed that the mean age of the producers was 43 years with higher percentage of the farmers being relatively young and in their active ages of production. This implies that younger farmers are likely to adopt innovations faster than the older ones. The result on farming experience revealed a mean experience of 9.8 years, with majority (67.7%) having 10 and below years of experience. This implies that most of the producers have garnered production experience and are likely to be profitable in their production.

Furthermore, egg production has undergone rapid changes during the past decade due to the introduction of modern intensive production methods of birds, new breeds and improved preventive disease control and bio-security measures has been adopted all over the world. These intensive production methods place high demands on proper health, hygiene, and

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management, and require only a small, but very skilled labour force. This type of production has also been adopted in developing countries, but the scope of adoption has been limited due to the high inputs and skills required, which is unfavorable to rural economies. The progress in industrial egg production methods has however had little effect on subsistence egg production methods in rural and peri-urban areas, where inputs into disease control stay behind minimal. As such, these high technology production methods are not adopted by the rural poultry egg producers due to their scale of operation (Hobbs, Colling, Gurung &Allen, 2021).

It is on this premise, that this research study tends to analysed the profitability of poultry egg production in Etim Ekpo Local Government Area. This will help the policy makers to put up good measures to enhance poultry egg productivity and push the nation closer to the food self-sufficiency attainment especially in animal protein intake. The specific objectives are to; assess the socioeconomic characteristics of poultry egg producers and evaluate the profitability of poultry egg production in the study area.

METHODOLOGY

Study Area

Etim Ekpo coordinate is $5^0$1'N $7^0$37'E. The L.G.A was created from the former Abak division, Etim Ekpo is one of the Annang-speaking areas. The seat of the local government council is in Utu Etim Ekpo a community in Etim Ekpo. The inhabitants of this town are estimated to be 108,418, according to 2006 population census. This figure was projected to 112,660 people in 2021 using population forecasting Formula: $Nt = P\ e^{r*t}$

Where: Nt = number of people forecast to 2021 /Population forecast to 2021 = Present Population/ Population as at 2006 * (base of the natural logarithms raised to (rate of natural increase /100 *11years))

Etim Ekpo Local Government Area is made up of four districts of seventy-four communities and villages. The people of this location are predominantly subsistence farmers, traders and

craftsmen (Ubokudom, Esheya & Udioko, 2021). Natural resources in Etim Ekpo Local Government Area are sharp sand, gravel, timber and oil-palm. The people of Etim Ekpo are mainly farmers, but the educated indigenes work as civil servants within and outside the Local Government Area. In the area of education, there are many public and private secondary schools. The people of Etim Ekpo are vast in knowledge and every other creative activity (Wikipedia 2021).

Sample and Sampling Techniques

A multistage sampling technique was adopted in this research. The first stage was a purposive selection of five (5) clans in Etim Ekpo Local Government Area. The second stage, was a simple random selection of five (5) villages from each clan. The third stage was a simple random selection of three (3) poultry farmers in each of the five villages. The total respondents for the research were 75 poultry egg farmers.

Analytical Techniques

Both descriptive and inferential statistics were used in the analysis. Descriptive statistics such as percentages, frequency counts, and arithmetic means were employed in analyzing the socioeconomic characteristics of the farmers. Budgetary analysis which includes the net farm income, and gross margin and was used to evaluate the costs and returns and profitability of poultry egg production in the study area.

Model Specification

Budgetary Analysis involves examining and explaining the components of budget expenditure and revenue as specified below:

$$NFI = GI - TVC - TFC \quad (1)$$

$$GM = TVP - TVC \quad (2)$$

Where;

NFI = Net Farm Income (Naira)

GI = Gross Income (Naira)

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TVC = Total Variable Cost (Naira)

TFC = Total Fixed Cost (Naira)

TVP = Total Value of Production

Where;

TR = Total Revenue

TC = Total Cost

Decision Rules

If BCR >1, then the business is profitable.

If BCR < 1, then the business is not profitable.

If BCR =1, then the business just breaks even.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Poultry Egg Farmers in the Study Area

Result from Table 1 below shows that majority, about 71% of the poultry egg farmers in the study area were male while minority about 29% were females. This indicated that the males were more involved in poultry egg production in the study area than their female counterparts. This finding is in line with the finding of Ijah, *et al.*, (2020) who found out that majority; 76.7% of the poultry egg producers in their study area were male. The result further supported Oluyemi, *et al.*, (2020) who stated that the distribution of poultry egg farmers according to gender revealed that 81.7% were males while 18.3% were females. This shows that the enterprise is dominated by male and this is expected because of the energy demanding nature of the poultry enterprise.

Age is an indication of the stage of life of the respondents as well as how active a respondent could be especially in poultry egg farming activities. Table 1 also reveal that 29 farmers fell within the age range of 25-36 years, representing about 38% of the total respondents, 31 farmers fell within the age range of 37 – 48 years representing about 41% of the total

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respondents and 15 farmers fell within the age range of 49-60 years representing about 20% of the total respondents. While the average age of the respondents in the study was 41 years. This is an indication that the farmers as at the time of this research were at their prime and active stage of life existence, as such being able to cope with the tediousness involved in the poultry egg production. This age status will enhance their production rate which will lead to increase in income to enhance more profit.

On the aspect of educational attainment, Table 1 further showed that, about 11% of the respondents had First School Leaving Certificate(FSLC), majority representing about 39% of the respondents had West African Examination Certificate/ West African Senior Secondary Certificate Examination (WAEC/WASSCE), 16% acquired Ordinary National Diploma (OND), about 13% of the farmers had the National Certificate in Education (NCE), 20% had higher National Diploma (HND) while only about 1% had either Bachelor of Art or Bachelor of Science (BA/B.Sc.). The study revealed that, the poultry egg producers in the study area had one form of education or the other which significantly contributed to increase in poultry egg production in the study area. This will eventually lead to high profit margin. This is in line with Bukunmi and Yusuf (2015) findings that, increase in the level of education of the respondents will lead to increase in poultry egg production.

The findings in Table 1 further revealed that about 83% of the farmers were married, while about 17% were single. This revealed that majority of the backyard poultry egg keepers were married. This was expected since the average age of the respondents in the study was 41 years, which under African culture they are expected to be married and have family of their own. Majority, 75% of the poultry egg farmers had household size that ranged between 3 – 4 persons, followed by about 21% of the respondents were within 5-6 persons and 4% had 1-2 persons in their household. While the mean household size stood at 4 persons per household, indicating that the household size is small within the African context.

For membership in cooperative societies, 57 farmers forming the majority and representing 76% of the poultry egg farmers responded that they do not belong to any cooperative society, while only 18 farmers representing 24% of the respondents accepted that they belong to one cooperative society or the other. This may be the reason why some of them were unable to

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access loans to increase their production capacity. Majority, 69% of the poultry egg farmers in the study area acquired monthly farm income range of ₦20,000 – ₦80,000. This was followed by 27% of the respondents who got income range of ₦81,000 –₦140,000 per month. Only 4% of the respondents acquired the range of income between ₦140,000 – ₦200,000 per month. While, the mean income stood at ₦70,800 per month, this level of income may be as a result of the high cost of production inputs. The result also revealed that majority, 99% of the respondents had farming as their major source of income while only 1% of the respondents had income from civil Service work as well as farm work. This result may not be far from the average age status of 41 years, being young and active to perform farm work as well as their literate levels which will enable them to adopt innovation faster. Another reason for the respondents to take farming as their major source of income may be due to lack of white-collar jobs for the teeming youths' population that make them to resort to farming as their last option.

The result on Table 1 further revealed that greater percentage, about 85% of the poultry egg farmers had between 50 – 224 birds per pen. Followed by about 7% of the respondents that had 225-399 birds per pen. About 5% of the respondents had 400 – 576 birds per pen while about 3% had 576 – 750 birds per pen. This finding contradicts the finding of Ijah, *et al.,* (2020) who found out that the number of birds per pen in their study area ranged between 301 – 400 birds per pen. The study also revealed that more than half, about 57% of the respondents had access to credit facilities while about 43% did not have any access to credit facilities. This scenario has helped the poultry egg production in the study area to face a tremendous boost during the study period. This finding supported Oluyemi, *et al.,* (2020) who stated that 68.7% of the farmers had access to credit while the remaining 31.3% did not have access to credit.

About 71% of the farmers had seldom extension agent's visitation to their farms. 4% of the respondents had more frequent extension agent's visitation to their farms. About 5% of the respondents had most frequent (Regular) extension agent's visitation to their farms. While 20% of the respondents has never been visited by the extension agents. It was also revealed that, majority, 72% of the respondents had only one pen in their farms. About 23% had two

pens, 4% had three while only 1% had 4 pens in their farms. It was also revealed that, 64% of the respondents had a total pen size ranges from 12 – 309 square metres, 28% had 310 – 609 square metres, 7% had 608- 905 square metres while only 1% of the respondents had 906 – 1203 square metres.

Evaluation of the Profitability of Poultry Egg Production in the Study Area.

The result on the evaluation of the profitability of egg production in the study area using budgetary analysis is presented in Table 2 below. It was found that 96.87% of the cost of production was on the variable inputs. The results also shown that in the study area, the mean total revenue was ₦2,755,879.20, mean total fixed costs was ₦42,341.33 and mean total variable costs was ₦1,311,248.67 during 2021 production season. The total cost per production season was ₦1,353,590.00 while the gross margin was ₦1,444,630.53 and Net Farm Income was ₦1,402,289.20 per production season. The result revealed that egg production is a profitable enterprise because for every ₦1 invested in the business, it yielded ₦2.00 in return. This finding is in agreement with the findings of Haruna, Sani, Danwanka and Adejo (2012), who reported that poultry birds provide income to the farmers.

CONCLUSION AND RECOMMENDATIONS

Based on the findings from the study, it was therefore concluded that poultry egg production is a profitable venture in the study area due to high profit margin of poultry egg production. With the growing demand for poultry egg in the study area, investment in poultry egg production is a viable agribusiness enterprise for income generation, job creation especially, poverty alleviation and enhancement of food security in line with the poultry value chain transformation action plan of the on-going agricultural transformation agenda of Nigeria.

In the light of the research findings, the following recommendations were proffered: To improve profitability, better management practices should be implemented, poultry feed should be formulated locally to reduce feed cost. Poultry egg producers should be encouraged to increase their flock size for healthy egg production and increased profitability. Poultry egg production should be integrated as a vital component in government programmes geared

towards empowerment especially for the teeming unemployed youths in the state as well as the nation due to its profitability. Adequate measures aimed at reducing the cost of poultry egg production through research in the study area should be encouraged, especially the cost of feeds which constituted the largest proportion of the total cost of poultry egg production, that will help in increasing the profit outlay of commercial poultry egg production.

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APPENDICES

Table 1: Distribution of egg producers based on socioeconomic characteristics

Item	Socioeconomic Variables	Frequency (n = 75)	Percent	Mean
1	**Sex**			
	Male	53	70.7	
	Female	22	29.3	
2	**Age**			
	25 – 36	29	38.7	
	37 – 48	31	41.3	41
	49 – 60	15	20.0	
3	**Educational Level**			
	FSLC	8	10.7	
	WAEC/WASSCE	29	38.7	
	OND	12	16.0	
	NCE	10	13.3	
	HND	15	20.0	
	BA/BSc	1	1.3	
4	**Marital Status**			
	Single	13	17.3	
	Married	62	82.7	
5	**Household Size**			
	1 – 2	3	4.0	
	3 – 4	56	74.7	4
	5 – 6	16	21.3	
6	**Total Membership in Cooperative Society**			
	Yes	18	24.0	
	No	57	76.0	
7	**Monthly Farm Income (₦)**			
	20000 – 80000	52	69.3	
	80001 – 140000	20	26.7	70,800
	140001 – 200000	3	4.0	
8	**Major Source of income**			
	Farming	74	98.7	
	Civil Servant and Farming	1	1.3	
9	**No of Birds per Pen**			
	50 – 224	64	85.3	
	225 – 399	5	6.7	
	400 – 576	4	5.3	
	575 – 750	2	2.7	
10	**Access to Credit facility**			
	Yes	43	57.3	
	No	32	42.7	
11	**Access to Extension Services**			
	No	15	20	
	few times	53	70.7	
	More	3	4.0	
	Regularly	4	5.3	
12	**No of pens**			
	1.00	54	72.0	
	2.00	17	22.7	
	3.00	3	4.0	
	4.00	1	1.3	
13	**Total Pen Size**			
	12 – 309	48	64.0	
	310 – 607	21	28.0	
	608 – 905	5	6.7	
	906 – 1203	1	1.3	

Table 2: Distribution of Cost and Returns of Egg Production Based

	Description of items	Mean Cost in Naira (₦)	Total in Naira (₦)	% Contribution to total Cost
A	**Variable Cost composition**			
1	Cost Of Layers	43,520.00		
2	Feed Cost	1,063,314.67		
3	Debeaking	626.00		
4	Cost of Labour	118,880.00		
5	Cost of Drug/Vet Services	33,706.67		
6	Cost of Electricity	5,521.33		
7	Transportation	45,680.00		
	Total Variable Cost (TVC)		**1,311,248.67**	**96.87**
B	**Fixed Cost composition**			
1	Cost of Rent	31,840.00		
2	Feeders and Drinkers	8,721.33		
3	Wheelbarrow	1,484.00		
4	Spade	296.00		
	Total Fixed Cost (TFC)		**42,341.33**	
C	**Total Cost (TC)**		**1,353,590.00**	
D	**Revenue Composition**			
1	Egg Sales	269,8418.67		
2	Culled/spent layers	7,989.33		
3	Droppings	39,577.33		
4	Empty Bags	9,893.87		
	Gross Income (GI)/Total Revenue (TR)/ Total Value of Production (TVP)		**2,755,879.20**	
E	**Net Farm Income (NFI =GI-TVC-TFC)**		**1,402,289.20**	
F	**Gross Margin (GM =TVP – TVC)**		**1,444,630.53**	

Source: Field survey, 2021