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Economics of Poultry Production in Egba Division of Ogun State

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Abstract: The study analyzes the profitability level of poultry production in Egba Division of Ogun State. The Study was based on primary data obtained from a cross section of 70 poultry farms and analyzed using descriptive, budgetary and profitability ratio. The study confirms that an average net income across all farms was N3,339,395.2 while average total cost was N3737021.7 per production season. The profitability index, rate of return on investment, rate of return on variable cost and operating ratio established the fact that poultry farming is profitable in the study area. Therefore, it was recommended that for poultry farmers to increase their profitability level they should try to explore avenue of reducing the feed cost which constitute the highest percentage of total variable cost.

Key words: Poultry, production, profitability ratio, bird stock population, proportionality factor, budgetary technique

INTRODUCTION

Animal protein contains most of the essential amino acids required by the human body in the right proportion and in the form more readily useful to the needs of the body than those of plants (Akinwunmi and Ikpi, 1979; Ajibefun and Daramola, 1999). Animal protein is important in the human diet for growth, maintenance and repairing of body tissues, maintaining the water balance of the body tissues and the formation of hormones and enzymes (Bamgbose *et al*., 1998). Poultry products have assumed the role of providing much needed animal protein to mankind (Aihonsu and Sunmola, 1999).

Poultry egg apart from supplying protein is also a good source of lipids and vitamins of high biological value to man (Aihonsu and Sunmola, 1999). The importance of egg is also observed in its contribution as a major ingredient in the baking of confectioneries and the use of the egg albumen in the making of shampoo and in book binding (Bamiro *et al*., 2001; Ojo, 2003; Okoruwa *et al*., 2005). Poultry production also contributes to the nations Gross Domestic Product (GDP) as it provides gainful employment and income for a sizeable proportion of the population. Together with other livestock, the contribution to the GDP at 1984 factor cost increased from 3,822.3 million Naira in 1981-5.160.0 million Naira in 1997 (CBN, 1994, 1998). It is therefore, imperative for the poultry industry to be sustained so as to prevent social disequilibrium, which can result from its collapse.

Demand for poultry meat in Nigeria has increased remarkably over the past years due to increasing growth in the number of fast food restaurants featuring chicken menu in major urban areas and growth in sales through institutional catering facilities serving foreign companies operating in the petroleum sector (Alabi and Aruna, 2005). Although, Nigeria's poultry production is expanding with domestic poultry meat production increasing from 172,000MT in 1999-211,000MT in 2005 (FAO, 2006), it is not keeping pace with rapidly increasing domestic consumption requirements (USDA, 2002). For industrial poultry birds to express their full genetic potential, certain basic requirements must be provided. These include environment, good management, balanced rations and adequate capital base, which is lacking in Nigeria (Alabi and Aruna, 2005). They further reported that high cost of feeds, poor quality of day old chick, inadequate extension and training facilities has been the bane to industrial poultry production make family poultry production in Nigeria popular while (Aihonsu and Sunmola 1999) called for concerted efforts to save the industry from total collapse which failure to do, could lead to a serious reduction in poultry production that can transforms into lower productivity and output.

Based on the above, this study aims at determining costs, returns and profitability level of poultry farming.

MATERIALS AND METHODS

The study data and data collection procedure: The study utilizes primary data obtained from the field survey conducted between October-December, 2006, the data were drawn from the 6 local government areas that made up of Egba Division Ogun State (Abeokuta North,

Abeokuta South, Ewekoro, Ifo, Obafemi-Owode and Odeda LGAs). The division was purposively selected due to its contributions to the agricultural development in the state but samples were drawn using stratified random sampling techniques. The division was grouped into 6 strata based on the existing local government areas while samples were drawn from each stratum based on proportionality factor using the sample frame collected from various agricultural agencies in the division. In all, 135 farms were contained in the sample frame but 70 farms were randomly drawn from all the strata based on the proportionality factor stated below;

$$S = d/D \times n$$

Where,

S = Sample size of poultry farms drawn from a stratum.
d = The number of poultry farms in each stratum based on the available sample frame.
D = The total number of poultry farms in the available sample frame (D = 135).
n = Total number of poultry farms drawn for the study (n = 70).

Table 1 gives a comprehensive detail of sample drawn from each stratum.

Analytical procedures: The data collected were analyzed using descriptive statistics, budgetary analysis and analytical ratios. Simple frequency tables and percentage were employed as descriptive statistics in presenting the socio-economic characteristics of the poultry farmers.

The budgetary technique emphasized the costs and returns to poultry farmers in relations to their stock population. The profit level and profitability ratios were estimated using gross margin and return to management (Kay, 1981). The profit level of poultry production was captured by profitability analysis.

$$TC = TVC + TFC$$
$$TR = P \times Q$$

Table 1: Samples drawn from each stratum

Local govt. Areas	Available number of poultry farms in each stratum (d)	Sample drawn from each stratum (s)
Abeokuta North	17	9
Abeokuta South	29	15
Ewekoro	31	16
Ifo	17	9
Obafemi-Owode	16	8
Odeda	25	13
Total	D = 135	n = 70

Source: Field survey, 2006

From the results of the budgetary analysis, the following were obtained.

- GM-Gross Margin
- NI = GM-TVC
- Profitability Index or return on sale = NI/TR
- The rate of return on investment (%) RRI = NI/TC× 100
- Rate of return on variable cost (%) RRVC = TR-TFC /TVC ×100
- Operating Ratio = TVC / TR

Where,

GM = Gross Margin
TVC = Total Variable Cost
PI = Profitability Index
TC = Total Cost
TR = Total Revenue
NI = Net Income
TFC = Total Fixed Cost

Table 2: Socio-economic characteristics of sampled poultry farmers

Characteristics	Number of respondent	Percentage respondent	Mean (Average)
Age (years)			
21-30	5	7.1	
31-40	11	15.7	46 years
41-50	34	48.6	
51-60	16	22.9	
61-70	4	5.7	
Education level			
Primary school	4	5.7	
Secondary school	9	12.9	
OND/NCE	15	21.4	15 years
B.Sc/HND	29	41.4	
Higher degree	13	18.6	
Years of experience			
1-5	15	21.4	
6-10	26	37.1	
11-15	12	17.1	11 years
16-20	8	11.4	
Above 20	9	12.9	
Sex			
Male	62	88.6	
Female	8	11.4	
Stock population			
500 or less	18	25.7	
501-1000	24	34.3	1072 birds
1001-2000	14	20.0	
Above 2000	14	20.0	
Bird type			
Breeders	1	1.4	
Cockerels and broilers	1	1.4	
Chicks	2	2.9	
Layers and broilers	11	15.7	
Layers and cockerels	1	1.4	
Layers, pullets, cockerels, Broilers	3	4.3	
Layers	49	70.0	
Broilers, layer and cockerels	2	2.9	

Source: Computed from field survey, data, 2006

RESULTS AND DISCUSSION

Socio economic characteristics of the sampled poultry farmers: Table 2 summarizes the socio economic characteristics of the sampled poultry farmers in the study area

Table 2 reveals that 88.6% of the poultry farmers were males having a modal age class of 41-50 years while the average age of the sampled poultry farmers in the study areas was 46 years, this implies that the poultry farmers are still within the active labour force. Educationally, less than 19% of the farmers had secondary school education or less while majority (60%) had Bachelor degree or its equivalent and above while non of the sampled poultry farm owners posses no formal education, indicating that poultry farming requires high level of education in understanding the poultry production risk and adjusting the factors use to ensure high productivity.

It was found that 41.4% of the farmers had over 10 years experience in poultry production with 11 years as an average years of experience among poultry farmers indicating that poultry farming is not a recent innovation in the study area. The results also revealed that 74.3% of the poultry farmers had over 500 birds on their farms with average of 1072 birds while on the other hand, 70% of the poultry farmers involved only in layer production (egg production) with 24.29 of them involved in combination of layers with other birds types indicating that most of the sampled poultry farmers were into egg production.

Average cost and Revenue structure of sampled poultry farm: The average gross income and net income were presented in the Table 3.

Table 3 reveals the average cost and revenue structure of sampled poultry farms in the study areas in relation to their stock population and also for all farms. The average total revenue for all farms was found to be

Table 3:Cost and Revenue Structure of Sampled Poultry Farms in Relation to stock population

	500 or less		501-1000		1001-2000		Above 2000		All farms	
Item	Mean	% cost	Mean	% cost	Mean	% cost	Mean	% cost	Mean	%cost
Variable cost										
Cost of bird stock	N 93900.00	11.52	184750	8.04	269353.85	7.19	2188181.8	22.32	580656.36	15.34
Feed cost	N 546186.67	67.22	N 1655568.8	72.06	2891490.8	77.16	6004654.2	61.24	2516172.3	67.33
Labour cost	N 92286.67	11.36	N 192756.25	8.39	212261.54	5.66	535707.27	5.46	238556.00	6.38
Drug cost	N 2832.67	0.35	N 5654.69	0.25	6301.54	0.17	19512.73	0.20	7573.18	0.20
Energy cost	N 1133.33	0.14	N 14725.00	0.64	5954.15	0.16	47568.18	0.49	15513.71	0.42
Maintenance cost	N18000.00	2.22	N 58125.00	2.53	73070.92	1.95	77754.55	0.79	54640.40	1.46
Marketing cost	N1000.00	0.12	N 2187.50	0.10	3307.69	0.09	8727.27	0.09	2454.55	0.07
Transportation cost	N 17730.00	2.18	N 36921.88	1.61	46750.77	1.25	158169.82	1.61	58260.51	1.56
Crates cost	N 233.33	0.03	N 1031.25	0.04	621.54	0.02	3781.82	0.04	1266.91	0.03
Total variable cost	N 773302.67	92.92	N 2151720.3	93.66	3509112.8	93.62	9044057.6	92.24	3475093.9	92.99
Fixed cost	N 39246.666	4.83	N 145678.08	6.34	239499.19	6.38	761180.72	7.76	261927.76	7.01
Total cost	N 812549.33	100.00	N22977398.4	100.00	3748612	100.00	9805238.4	100.00	3737021.7	100.00
Revenue from output	Egg sold (N) 5783871.4		N 1305643.0		N 4046150.0		5430913.8		14835273	
Spent layers sold (N)	N 136353.33		N 389981.25		993307.69		2074090.9		800236.36	
Other birds sold (N)	N .00		N 66875.00		92307.69		368000		114872.73	
Unsold birds (N)	N 203460.00		N88512.50		296038.46		1131127.3		377436.36	
Total Revenue	N 1645456.3		N4591518.7		6812567.7		18408491		7076416.8	
Gross Margin = TR-TVC	N 872153.67		N 2439798.4		3303454.9		9364433.3		3601322.9	
Net income = GM-TFC	N 832907.00		N 2294120		3063955.7		8603252.6		3339395.2	

Source: Field survey; 2006

Table 4: Profitability analysis of sampled poultry farms based on their stock population

Stock population	Profitability index (Pi)	RRI%	RRVC%	OR
500 or less	0.4124	108.42	120.44	0.56
501-1000	0.4741	119.49	138.59	0.49
1001-2000	0.4279	150.35	172.57	0.53
>2000	0.4201	165.17	206.79	0.54
All farms	0.4356	135.90	155.31	0.53

Source: Survey Data, 2006

N8,076,416.8 which was accrued from the sales of eggs, spent layers, other birds and worth of unsold birds while the average total cost incurred for all forms was N3,737,021. Feed cost for all farms constituted the greatest share of the total costs representing 67.33% followed by cost of birds stock (15.34%). Variable cost constituted 92.99 percent of total cost while fixed cost only constituted 7.01% of total cost incurred for all farms.

The average gross margin and net income accrued to all farm per production season was found to be ₦3601322.9 and ₦ 3339395.2, respectively. It can therefore be concluded based on Table 3 that poultry production in the division based on their stock population were assessed to be profitable. However, the poultry farmers with above 2000 birds make more profit and spent less on maintenance and labour than other categories in the study area implying that the bigger the farm, the more efficient it is in the area of labour use.

Profitability ratios of sampled poultry farms: The profitability ratios of sampled poultry farms were calculated to establish the profitability level of the enterprise.

Table 4 reveals the profitability index, rate of return on investment, rate of return on variable cost and operating ratio based on stock population. The PI for all farms was 0.4356 indicating that out of every Naira earned about 44 kobo returned to the farmers as net income. Also, the farmer earns N1.32kobo profit on every naira spent on poultry production on average. Rate of return to variable cost was estimated as N155.31%, that is per production season every N1 cost incurred on variable inputs generates about N1.55, which can be deduced that improving profitability in poultry production in the study area will require that more effort be put into increasing the efficiency of use of these variable inputs. Operating ratio that is less than one indicates a good efficient and profitable business, therefore, for all farms, operating ratio of 0.53 indicates greater total revenue over total variable cost which is good for the business but it is still possible for the farmers to achieve lower operating ratio and this can be achieved by preventing waste and exploring avenue for wider market outlets which will increase the total revenue and then bring down the operating ratio.

CONCLUSION AND RECOMMENDATION

It is concluded from the study that the poultry farmers in Egba division of Ogun State are within the active labour force with high level of education. An average poultry farm made a net income of N3,339,395.20 per production season while net income increases with increase in bird population but labour cost and drug cost decrease with increase in bird stock population.

Profitability index, rate of return to investment/ variable cost and operating ratio were found to be 0.44, 132.90, 155.31 and 0.53% for all farms: All of which established the fact that poultry production is profitable in Egba Division of Ogun State. It is therefore recommended that poultry farmers in the study area should explore avenue for reducing the feed cost which constitute the highest percentage of total variable cost.

REFERENCES

Aihonsu, J.O.Y. and M.A. Sunmola, 1999. Optimal Laying period for profitable and sustainable egg production. Ife J. Agric., 20: 67-80.

Ajibefun, I.A. and A.G. Daramola, 1999. Measurement and Sources of Technical Inefficiency in Poultry Egg Production in Ondo State, Nigeria. J. Econ. Rural Dev., 13: 85-94.

Akinwunmi and Ikpi, 1979. Economic Analysis of the Nigeria Poultry Industry. Federal Livestock Department Bull., pp: 3-54.

Alabi, R.A. and M.B. Aruna, 2005. Technical Efficiency of Family Poultry Production in Niger-Delta, Nigeria. J. Central Eur. Agric., 6: 531-538.

Bamgbose, A.M., R.M. Sani, M. Sanusi and U.S. Rurum, 1998. Major constraints of poultry production in Bauchi metropolis. Proc. 3rd Ann. Conf. Anim. Sci. Assoc. Nigeria Held at. Lagos Airport Hotel, Ikeja Lagos, pp: 259-261.

Bamiro, O.M., A.M. Shittu and A.S. Kola Olukotun, 2001. Private feed production as a cost reduction 2001 strategy: Effects on profitability of poultry business in Ogun State, Nigeria. The Ogun J. Agric. Sci., 1: 37-51.

Central Bank of Nigeria, 1994. Statistical Bulletin, 5: 105.

Central Bank of Nigeria, 1998. Annual Report and statement of accounts for the year Ended, pp: 102.

Food and Agricultural Organisation FAO, 2006. Food Balance Sheet, FAO State citation Rome Italy.

Kay R.O., 1981. Farm Management, Planning, Control and Implementation. McGraw Hill Book Company, London, pp: 154-156.

Ojo, S.O., 2003. Productivity and Technical Efficiency of poultry egg production in Nigeria. Int. J. Poult. Sci., 2: 459-464.

Okoruwa, V.O., A.E. Obayelu and O. Ikoyo-Eweto, 2005. Profitability of Semi-Intensive and Intensive egg production in South-West and South-South Zones of Nigeria. Nig. J. Anim. Prod., 33: 118-127.

United State Department of Agriculture (U.S.D.A), 2002. Nigeria Poultry and Poultry Products, Poultry update. Global Agriculture Information Network (GAIN Report).