BUDGETARY ANALYSIS OF SMALL SCALE POULTRY PRODUCTION IN EGBEDA LOCAL GOVERNMENT AREA, OYO STATE, NIGERIA

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ABSTRACT

This research assessed the costs and returns associated with small scale poultry production in Egbeda Local Government Area, Oyo State. A multi stage sampling technique was used to select 100 respondents; the data were analyzed using descriptive statistics and budgetary analysis. The results revealed that an average respondent was 44 years old and married with an average of seven individuals in the household. Furthermore about half (41%) of the poultry farmer raised layers using backyard management system. Net farm income was ₦300,146, ₦105,601 and ₦57,690 from layer, broiler and cockerel production respectively. The study concluded that small scale poultry production is profitable. Therefore awareness and resources to promote such cottage business should be made available by Government to combat the prevailing economic recession in the Nation.

KEYWORDS: Poultry production, backyard management, net farm income and constraints.

INTRODUCTION

Poultry is a sub-sector in the livestock industry constituting a major component of the agricultural economy. The sector provides animal protein to the populace as well as employment for a considerable percentage of the population. According to FAO Report (2010), poultry comes fourth among sources of animal proteins for human consumption in Nigeria and contributes about 27% of the national meat production. According to Killebrew and Plotnick (2010), demand for livestock products, including poultry, is expanding in West Africa as a result of population growth and increased urbanization. Small scale poultry production represents one of the few opportunities for saving, investment and security against risks. It accounts for approximately 90% of total poultry production (Branckaert, 1999). Keeping poultry makes a substantial contribution to household food security throughout the developing world. It helps diversify incomes and provides quality food, energy, fertilizer and a renewable asset in over 80 percent of rural households (Sonaiya and Swan, 2004). The poultry industry also provides employment opportunities for the populace, thereby serving as a source of income to the people (Akanni, 2007). However, the poultry industry in Nigeria, as well as other developing countries of Africa, is continually characterized by low production levels (Folorunsho *et al.*, 2016). Small-scale poultry production has been a very important economic and nutritional resource for poor families in rural areas of developing countries in Latin America, Africa and Asia (Sonaiya and Swan (2004), Alimi *et al.*, (2006), Abubakar *et al.*, (2007), Sharma (2007), Henning *et al.*, (2007), Guèye (2009), Alders and Pym, (2009)). It is often promoted and used by Government and NGO's in development projects to improve food self-sufficiency, alleviate malnutrition as it provides an excellent protein source (Farrell, 2000), and create income generating activities. To exit the poverty cycle, sustainable economic growth through increased employment and income generation needs to be created in poor rural areas (Wynne and Lyne, 2003). Increased production of poultry, both commercial and family, is a vital contribution to income, food security at both the household and community levels (Alders, 2012). Therefore, this study assessed the cost and returns associated with small scale poultry farming. It should be noted that the subject of economic analysis of poultry production in Nigeria has received considerable attention in the literature (Okafor *et al.*, 2006; Bamiro *et al.*, 2006; Bamiro, 2008; Oladeebo and Ojo, 2011). However, production under

the backyard management system has not been an emphasis particularly in such a period of economic recession in Nigeria. The specific objectives of this study were to determine the socio-economic characteristics, net farm income and production constraint associated with small scale poultry production within the study area.

MATERIAL AND METHODS

The study was carried out in Egbeda Local Government Area (LGA) of Oyo State, which belongs to Ibadan/Ibarapa agricultural zone in the state. The LGA is located on longitude $7^0 23'47^0$N, 3^0550 /7.39639^{0}N and 3.91667^{0}E with a population of 319,388 on a land mass of 158.508km^2 of urban and agricultural land with no forest reserves and mean annual rainfall of 1420.06mm. Temperature ranges from maximum 26.46^{0}c and minimum 21.42^{0}c while relative humidity is 74.55%. There are about three types of mineral resources found in Egbeda Local Government Area; Aquamarine in Egbeda, Tourmaline in Olodo, Tantalite in Wofun. A favourable soil factors allow the cultivation of yam, cassava, maize, cocoa, oil palm citrus fruits and vegetables likewise rearing of livestock such as goats, sheeps, pigs and poultry such as duck, chicken, turkey, as well as micro-livestock of snail, rabbit, grasscutter and honey-bee.

The study was based on a multistage selection of 100 small scale poultry farmers in Egbeda Local Government Area. At the first stage, 50% percent of total wards were randomly selected giving rise to 5 of total 11 wards. 45% selection from each sample frame made up the sample size of 100 farmers in the second stage as shown in the Table 1.

Table 3: Small scale poultry farmers register

Wards	Sample Frame	Sample At 45%
Erunmu	63	28
Owo Baale/Kasumu	48	21
Olodan/ Ajiwogbo	39	18
Egbeda	43	19
Olodo II	32	14
TOTAL	**225**	**100**

Source: Egbeda LGA, 2016.

A structured questionnaire used as an interview schedule was employed in gathering data used in the course of analysis. Data collected included socio economic characteristics, cost and return associated with poultry activities as well as constraints faced by the small scale poultry farmers. The data were analysed using descriptive statistics and budgetary analysis. The budgetary analysis following (Olabode and Ojo, 2011; David, *et al.* 2014, Adebayo *et al.* 2015) involves the following in poultry production;

$NFI = GM - TC$

$GM = TR - TVC$

TC = TFC + TVC

Where

NFI	Net Farm Income
TR	Total revenue
TVC	Total variable cost
TC	Total cost
TFC	Total fixed cost

RESULTS AND DISCUSSION

The result of socio economic characteristics of poultry farmer on Table 2 shows that at most one out of three (31%) of small scale poultry farmers falls within the range of 41-50years with a mean of 44 years. In essence these farmers are economically youth who can make use of various livelihood

strategies in combating economic recession. Furthermore the male constituted a larger percentage (55%) when compared with the females (45%) indicating that male dominated poultry production in this area in concordance with (Okoli *et al.*, 2004) who found out that about 60% of men were involved in poultry production in order to supplement their income in Imo State, Nigeria.

Table 4: Distribution of farmers by age, gender, marital status and Household size

Description	Frequency	Percentage(%)
Age (years)		
20-30	15	15
31-40	29	**29**
41-50	31	31
51-60	17	17
Above 60	8	8
Mean	**44**	
Gender		
Male	55	55
Female	45	45
Marital status		
Single	11	11
Married	89	89
Household size (numbers)		
1-5	28	28
6-10	53	53
11-15	17	17
16-20	2	2
Mean	**7**	
Education (yrs)		
Adult education	4	4
Non formal	9	9
Secondary	29	29
Tertiary	46	46
	100	**100**

Source: Field survey, 2016.

Table 2 revealed further that majority (89%) of the small scale poultry farmers were married, therefore the need for further sources of income to cushion the effect of economic recession on the household. In addition, not less than half (53%) of the small scale poultry farmers have between 6-10 persons in the household with a mean of 7 persons revealing a rather large number of mouths to feed but also more hands for labour. Educational attainment of the respondents showed about half (46%) of the farmers had tertiary education, meaning that this set of farmers were literate and able to generate income from other sources corroborating Nkhori (2004).

Table 5: Distribution of farmers by farming experience, secondary occupation, mode of land acquisition, types of birds and management system

Description	Frequency	Percentage
Farming experience (years)		
1-5	57	57
6-10	29	29
11-15	10	10
Above 20	4	4
Mean	**6**	
Secondary occupation		
Non	20	20
Artisans	14	14
Civil service	29	29
Trading	37	37
Acquisition of land		
Purchased	18	18
Owned	58	58
Rent	24	24
Type of birds		
Broiler	23	23
Cockerel	11	11
Layer	41	41
Layer and cockerel	13	13
Broiler, layer, and cockerel	12	12
Management system		
Backyard	34	34
Battery cage	19	19
Intensive	27	27
Intensive and battery cage	7	7
Semi intensive	13	13

Source: Field survey, 2016.

Table 3 shows that the farmers just started small scale poultry production as majority (57%) of them had between 1-5 years of farming experience. This could be their response to the recent economic recession in the nation. Most (58%) of the poultry farmers used their own land for poultry production which will in turn help income accruable from the business as rent, lease or fear of sudden eviction is eliminated. Analysis of types of birds raised showed that the largest proportion (41%) of small scale poultry farmers raised layers, followed by (23%) broilers production. Therefore layers production is more acceptable in generating income because of the daily sales of eggs and extra income from spent laying birds as opined by Bamiro *et al.*, (2006). 34% of the farmers raised the birds at their backyard thereby requiring less spending on housing. FAO (2009) affirmed that backyard poultry production has potential for increasing family income if good management including feeding and health are adhered to.

Table 6: Distribution of Poultry Farmers' Income

Description	Frequency	Percentage
Net farm income(₦)		
0-50,000	70	70
50,001-100,000	11	11
100,001-150,000	9	9
150,001-200,000	5	5
Above 200,001	5	5
Mean	**55715**	
Income from other source		
0-50,000	59	59
50,001-100,000	28	28
100,001-150,000	4	4
150,001- 200,000	7	7
Above 200,001	2	2
Mean	**58767**	

Source: Field Survey, 2016.

Table 4 showed that majority (70%) of the poultry farmers earned between ₦0 - ₦50,000 and average of ₦55715 net farm income per production cycle. This indicates that small scale poultry production is at least profitable. Other income sources also generated between ₦0 - ₦50,000 with an average of ₦58767 for the majority (59%) of the farmers. Income among this set of farmers is generally low.
Table 5 shows that majority (53%) of the respondents' rear less than fifty (50) broilers and 27% rear more than two hundred and fifty (250) broilers, for layers the majority (49%) rear more than two hundred and fifty (250) birds while for cockerel 65% of the respondents rear less than fifty (50) birds. Meanwhile, the mean number of broilers, layers and cockerel were 446, 326 and 278 respectively.

Table 5: Distribution of Birds (Broilers, Layers and Cockerel)

No of birds	Broilers		Layers		Cockerel	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
<50	53	53.0	28	28.0	65	65.0
51-250	20	20.0	23	23.0	19	19.0
>250	27	27.0	49	49.0	16	16.0
Mean	**446**		**326**		**278**	
Total	**100**	**100.0**	**100**	**100.0**	**100**	**100.0**

Analysis of costs and returns on Table 6 showed that ₦216,897, ₦298,618 and ₦92,443 were total cost of producing broiler, layer, and cockerel respectively. Components of this are cost of water, vaccines, feeds, labour, electricity and other necessary materials in poultry production.
In the three categories considered, cost of feed constituted the largest proportion with the cost of layers feed been the highest supporting the findings of Yusuf and Malomo (2007) who submitted that feed cost is the major cost item associated with poultry egg production. Table 5 further reveals that, total revenue was ₦474,763, ₦802,561, ₦233,079 in broiler, layer and cockerel production respectively. Layer production was the most profitable; having a net farm income of ₦300,146 because of the extra revenue farmers got from spent laying birds, which is followed by broiler and cockerel production of ₦105,601 and ₦57,690 respectively. This result indicated that the three categories of poultry production were profitable but layer production offers most returns. This results support the findings of Aboe *et al.* (2006).

Table 6: Cost and Returns of broiler, layer and cockerel production

Cost items	Broiler		Layer		Cockerel	
Descriptions	**Amount (₦)**	**Percentage (%)**	**Amount (₦)**	**Percentage (%)**	**Amount (₦)**	**Percentage (%)**
Variable cost						
Feeds	63,904.69	41.9	95,298.85	46.8	34,882.64	42.1
Labour	4,091.84	2.7	6,253.85	3.1	4,805.56	6.1
Water	53,559.18	35.2	67,534.92	33.1	29,097.22	35.1
Light	21,432.65	35.2	4,402.31	2.2	3,765.29	4.5
Egg crate	-	-	1,176.92	0.6	-	-
Shavings	336.41	0.2	263.39	0.1	237.61	0.3
Disinfectant	1,732.65	1.1	1,979.02	1.0	1,976.94	2.4
Medication	5,373.67	3.5	16,478.80	8.1	-	-
Debeaking	-	-	8,067.08	4.1	-	-
Charcoal	1,833.5	1.2	2341.39	1.1	2,243.61	2.7
TVC	**152,264.56**	**100**	**203,796.57**	**100**	**82,944.75**	**100**
Fixed cost						
Building	54,186.99	83.8	74,769.23	78.9	4,321.58	45.5
Drinkers	3,752.65	5.8	3,722.15	1.2	-	-
Feeders	5,260.00	8.1	3,673.46	3.9	3,683.89	38.8
Local heater	994.50	1.5	927.38	0.5	963.33	10.1
Bulb	438.80	0.7	782.66	13.8	530.14	5.6
Battery cage	-	-	10,946.92	1.8	-	-
TFC	**64,632.94**	**100**	**94,821.81**	**100**	**9,498.94**	**100**
TC	**216,897.50**		**298,618.38**		**92,443.69**	
Returns						
Broilers	472,965.67	99.6	-	-		
Cockerels	-	-	-	-	231,705.60	99.4
Spent layers	-	-	610,873.70	76.1	-	-
Eggs in crate	-	-	184,320.0	23.0	-	-
Cracked eggs	-	-	5,658.77	0.7	-	-
Manure	644.89	0.1	689.23	0.1	561.11	0.2
Empty bags	1,153.06	0.2	1,020.15	0.1	812.50	0.3
TR	**474,763.63**	**100**	**802,561.85**	**100**	**233,079.21**	**100**
GM	**322,499.07**		**598,765.29**		**150,134.46**	
NFI	**105,601.56**		**300,146.91**		**57,690.78**	

Source: Field Survey, 2016.

The main constraints faced by poultry farmers was high cost of feed as it ranked highest on Table 7. This result is in agreement with Bamiro *et al.* (2006). However, inadequate water supply and unavailability of experts was the lowest. It therefore means that farmers have requisite knowledge and access to technical know-how for production but high cost of feed is hampering profit and production.

Table 7: Constraints faced by poultry farmers.

Constraints	Frequency	Percentage	Ranking
Change in weather condition	36	10.3	3
Outbreak of disease	26	7.4	7
High mortality rate	31	9.0	5
Thefts	27	8.0	6
Predation problems	17	5.0	10
Insufficient fund to purchase feeds	34	10.0	4
Prolong period before laying	15	4.3	11
High cost of vaccines and drugs	40	11.5	2
Mismanagement by farm workers	20	5.7	9
High cost of feeds	45	12.9	1
Unavailable ready market	23	6.6	8
Foul smell	13	3.7	12
Inadequate water supply	12	3.4	13
Unavailability of expert to administer vaccines	8	2.3	14
	347*	**100**	

Source: Field survey, 2016.
***Multiple responses**

CONCLUSION AND RECOMMENDATIONS

This study concludes that layers production has highest net farm income although the other categories too generate positive income. Based on this finding and others, production of layers should be encouraged through subsidies on poultry feeds particularly.

REFERENCES

Aboe, P.A.T., Boa-amponsem, K., Okantah, S.A., Dorward, P.T. and Bryant, M.J. (2006). Free-range village chickens on the Accra Plains, Ghana: Their contribution to households. *Tropical Animal Health Production*.38: 223–234.

Abubakar, M.B., Ambali, A.G. and Tamjdo, T. (2007). Rural chicken production: constraints limiting rural chicken production in some parts of Nigeria and Cameroon. *World's Poultry Science Journal* 63:493.

Adebayo, C.O. (2015). Profitability and Technical Efficiency Among Broiler farmers in Kwara state, Nigeria. *Nigerian Journal of Agriculture food and Environment*. 11 (2) . 92 -96.

Alders, R.G. and Pym, R.A.E. (2009). Village poultry: still important to millions, eight thousand years after domestication. *World's Poultry Science Journal* 65: 81-190.

Alders, R.G. (2012). *Challenges and opportunities for small-scale family poultry production in developing countries.* XXIV World's Poultry Congress 5 - 9 August – 2012 Salvador - Bahia – Brazil. Pp. 1-9.

Alimi, T., Oluwasola, O. and Adejobi, A.O. (2006). Optimal farm size for achieving enterprise objective and sustainability in poultry meat production in Osun State, Nigeria. *World's Poultry Science Journal* 62:25-539.

Bamiro, O.M. (2008). Economic Performance of Commercial Poultry Farms in Oyo State Nigeria. *Int. J. Poult. Sci.* 7(11):1117-1121.

Bamiro, O.M, Phillip D.O, and Momoh S.O (2006), Vertical integration and production efficiency in poultry (egg) industry in Ogun and Oyo state. Nigeria. *International Journal of Poultry science*, 5(12); 1164-1171.

Branckaert, R.D.S. (1999). "Constraints in poultry production among smallholders". *Journal of Agricultural Science*, 38,387-99.

David M.O, E. B. Ayieko, and L. Kabuage, (2014). Profitability of Indigenous Chicken; The case of Producers in Makueni County, Kenya; *Journal of Economics and Sustainable Development*, 5(11),2222-2855.

Farrel, D.J. (2000). *A simple guide to managing village poultry in South Africa.* The University of Queensland, Brisbane, Australia (distributed by Josie Egan Publishing Services, Cape Town, South Africa).

Folorunso, S.T., Abia E., Okoroji, E.O., Dawang N.C. and Binuyo G. (2016). Profitability Analysis of Layer Poultry Production in Jos Metropolis, Plateau State, Nigeria. *J. Anim. Prod. Res.* 28(1):169-178. ISSN 0189-0514.

Food and Agricultural Organization (FAO) (2010). *Chicken genetic resources used in smallholder production systems and opportunities for their development.* P. Sørensen. FAO Smallholder Poultry . Production Paper, No. 5. FAO, Rome. Available at: www.fao.org/docrep/013/al675e/al675e00.pdf

Food and Agricultural Organization (FAO) (2009). *The State of Agricultural Commodity Markets.* Rome, Italy: Food and Agricultural Organization of the United Nations

Guèye, E.F. (2009). The role of networks in information dissemination to family poultry farmers. Small-Scale Family Poultry Production. *World's Poultry Science Journal* 65:115-124.

Henning, J., Pym, R., Hla, T., Kyaw, N. and Meers, J. (2007). Village chicken production in Myanmar – purpose, magnitude and major constraints. *Worlds Poultry Science Journal* 63:308-322.

Killebrew K. and Plotnick R. 2010. *Poultry Marketing in West Africa: Ghana.* EPAR Brief No. 83. Prepared for the Market Assess Team of the Bill and Melinda Gates Foundation. May 28, 2010. Retrieved December 10, 2012, from http://evans.washington.edu/files/Evans%20UW_Request%2083_Poultry%20Market%20Analysis%20Ghana_May-28-2010.pdf.

Nkhori, P. A. J., 2004. The Impact of Transaction Costs on the Choice of Cattle Markets in Mahalapye District Botswana. MSc Thesis University of Pretoria, Pretoria South Africa.

Okafor R.M., Odii M.A.C.A., Emeyonu, C.A. and Obih, U. (2006). *Profitability Analysis of Poultry Production in Imo State, Nigeria* in Adepoju S.O., Okuneye P.B. (eds). 2006. Proceedings of the Farm Management Association of Nigeria (FAMAN) 20th Annual National Conference, 18th-21st Sept. 2006 held at Federal College of Forestry, Jos, Plateau State, Nigeria. pp. 392-397.

Okoli, I.C, Anyaegbunam, C.N., Etuk, E.B., Uchegbu, M.C. and Udebibie, A.B.I. (2004). Socio-economic characteristics of poultry business entrepreneurs in Imo state, Nigeria. *Journal of Agriculture and Social research* 4:2.

Oladeebo, J.O. and Ojo, S.O. (2012). Economic appraisal of small and medium scale performance in poultry egg production in Ogun State, Nigeria. *African Journal of Agricultural Research* Vol. 7(37), pp. 5170-5174. Available online at http://www.academicjournals.org/AJAR. DOI: 10.5897/AJAR09.636. ISSN 1991-637X

Sharma, R.K. (2007). Role and relevance of traditional family poultry in developing countries with special reference to India. *World's Poultry Science Journal* 63:491.

Sonaiya, E.B. and Swan, S.E.J. (2004). Small-scale Poultry Production. *Technical Guide.* FAO Animal Production and Health Manual 1.

Wynne, A.T. and Lyne, M.C. (2003). *Rural Economic Growth Linkages and Small Scale Poultry Production: A Survey of Poultry Producers in KwaZulu-Natal.* Paper Presented at the 41st Annual Conference of the Agricultural Economic Association of South Africa (AEASA), October 2-3, 2003, Pretoria, South Africa.

Yusuf, S.A. and Malomo, O. (2007). Technical Efficiency of Poultry Egg Production in Ogun State. A Data Envelopment Analysis (DEA) Approach. *International Journal of Poultry Science,* 6(9). 622-629.