An Analysis of Cost and Returns to Broiler Marketing in Ogbomoso North Local Government Area of Oyo State, Nigeria

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Abstract: This study examined an analysis of cost and returns to broiler marketing in Ogbomoso North Local Government Area of Oyo State. Eighty respondents were selected purposively and a well-structured questionnaire was used to collect the data. The findings revealed that majority of the respondents were male and they are in their active ages. Most of them were highly literates which enhanced their production. Regression analysis shows that there is significant relationship between some selected socio-economic characteristics and the profit. The net profit and gross margin as well the benefit cost ratio indicated that broiler marketing is a profitable venture in the study areas.

Key words: Cost and returns, broiler marketing, poultry, economic services, Nigeria

INTRODUCTION

The word poultry is used to describe species of birds that are used by man for economic services and food production.

The birds include ducks, turkey, geese, guinea fowls, pigeons, etc. Until recently, poultry farming was primarily a small scale operation and was a minor source of income in most farms (Idachaba, 1995).

Many poultry farmers have now looked upon the poultry enterprise on their farm as an economic unit, means of livelihood and a source of income with which to raise their standard of living and acquire a degree of economic importance.

The nature of poultry production in Nigeria was purely on subsistence production rather than commercial from the available studies, the supply of poultry relative to other livestock is observed to have been on an increase, perhaps poultry becomes more attractive to the people due to the comparative advantages that poultry has over other classes of livestock. Expansion of poultry industry in Nigeria in recent times has been seen as a sort of revolution in agriculture. This could be attributed to many reasons. One of the reasons is that the rate of turnover in poultry production is very high compared with other types of livestock. Another reason is that poultry adapts very easily to various environments and its production is simple since it is unaffected by tsetse fly.

Aid the movement of commodities from the farmers to the final consumers and these include assembling, transportation, storage, processing, packaging, grading, advertisement as well as financial assistance. Marketing embraces activities relating to the product itself, the pricing; distribution, communication, promotions, post sale matters, marketing research and sales forecasting (Nwokoye, 1997).

Oladejo (2006) defined marketing as the performance of business activities that direct the flow of goods and services from producers to consumer in order to satisfying customers and accomplish the farms objectives.

Within the agricultural sector, the role of agricultural marketing have often been neglected to the benefit of production of the marketing system by policy makers who place more emphasis on the latter with the hope that solution to the problems of the farmer will be generated automatically (Okun and Richard, 1977).

However, the issues of neglecting marketing system was first observed by Moyer and Holand (1990), who postulated that marketing system was been totally neglected in the literature on economic development.

Idachaba (1995) remarked that it is not sufficient for policy makers to concentrate on solving the production problems, even though actual production may be adequate and unreliable.

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Despite the good and encouraging aspect of the poultry industry, some constraints have been identified which automatically deprive the poultry industry from rapid expansion. These include lack of credit, high cost and storage of feed, disease out break bad government policies, inadequate supply of poultry equipment, lack of trained man power and poor labour management, under utilization of resources, marketing problems and fluctuation in sales.

This study aims to find solution to the following questions:

- What are the socio-economic characteristics of the broiler farmers in the study area?
- What is the profitability of broiler marketing?
- What are the impacts of the socio-economic characteristics of broiler farmers on the cost and returns of broiler marketing?
- What are the constraints that affect the profitability of broiler marketing?

Objectives of the study: The general objective of this study is to determine the profitability of broiler marketing in the study area.

The specific objectives of this study are:

- Identify the socio-economic characteristics of the broiler farmers in the study area.
- Determine the cost and returns of broiler marketing
- Determine the constraints affecting the profitability of broiler marketing.

Hypothesis of the study: Ho: There is no significant relationship between socio-economic characteristics of the broiler farmers and their profit.

MATERIALS AND METHODS

The Headquarter of Ogbomoso North Local Government Area is Kinnira. It lies approximately on latitude 80°N and longitude 4°E. It is characterized with both wet and dry season. The mean monthly temperature is around 28°C with very little variation in March. The population of the local government area as at 1991/92 census was put at 126,692, with a vast area of land of about 246,641.42 ha. The major occupation of the inhabitants is farming while some are petty traders.

Sampling procedure and sample size: Purposive sampling technique was used to select 80 farmers randomly.

Method of data collection: A well-structured questionnaire was used to collect data from 80 respondents.

Method of data analysis: Data collected were analysed by descriptive and inferential statistics. Descriptive statistics like frequency table, percentages were used for the data on socio-economic analysis. Inferential analytical tool used were the regression analysis to test for the level of significance between the socio-economic characteristics and the profit of the respondents.

Budgeting analysis was used to evaluate cost and returns of broiler marketing (e.g., Benefit-cost ratio, also gross margin was used to determine the profitability of the business).

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents: Table 1 shows that 75% of the broiler marketers were male while 25% are female. This could be attributed to the fact that, it is a tedious venture of which men can easily cope than women. Also the table revealed that 1.3% of the marketers were within the age range of 20-30 years (i.e., 40.0%), 21-40 years (i.e., 38.7%) and marketers, in all

Table 1: Socio economic characteristics of respondents

	Frequency	(%)
Sex		
Male	60	75.00
Female	20	25.00
Total	80	100.00
Age		
1-20	1	1.30
21-30	31	38.70
31-40	30	37.50
41-50	16	20.00
50 and above	2	2.50
Total	80	100.00
Marital status		
Single	33	41.30
Divorced	7	8.70
Widow	2	2.50
Married	38	47.50
Total	80	100.00
Level of education		
Primary	2	6.00
Secondary	24	30.00
Tertiary	48	60.00
Others	3	4.00
Total	80	100.00
Experience (years)		
1-5	53	66.25
6-10	21	26.25
11 and above	6	7.50
Total	80	100.00
Labour type		
Self	30	37.50
Hired labour	20	25.00
Family labour	30	37.50
Total	80	100.00
Source of fund		
Borrowed	50	62.50
Not borrowed	30	37.50
Total	80	100.00

the respondents that are within the age range are in their active age; this implies that the age could affect an individual willingness to engage in broiler marketing.

It was observed that 47.5% of the respondents were married while the 41.3% were single. 8.7% are divorced while the rest of the respondents were widow. Also 60% had tertiary education 30% had secondary education, 6% had primary education, while 4% accounted for other types of education. This revealed that most of the respondents were highly literate. This could be responsible for high productivity.

Most of the respondents about 92.50% had 1-10 years experience, while 7.5% had more than 11 years experience. This shows that most of the broiler marketers have not had long experience in broiler marketing; this is probably because some of them got introduced into the business because of the economic situation in the country. Family and self-labour constitute 75.0% while hired labour had 25% used for the clearing of poultry wastes and other ad hoc assignments. This implies that those that used family and self-labour intend to reduce cost while those with hired labour used them cheaply relative in the amount they paid per day. About 62.5% of the broiler marketers source their funds by borrowing either from the banks, friends, relatives, co-operatives, while others about 37.5% do not borrowed. This could be because of the bottleneck, in terms of collateral security, delay in the disbursement of funds by banks.

Analysis of cost and returns: The total cost and revenue were expressed in term of their averages.

$$\text{Total Cost (TC)} = \text{Fixed Cost} + \text{Variable Cost}$$
$$= FC + VC$$

Also, it can be expressed as;

ATC = Average Total Cost
AFC = Average Fixed Cost
AVC = Average Variable Cost

$$ATR = \frac{\text{Total Revenue}}{\text{No of Respondents}}$$

$$= \frac{\text{₦}29501800}{80}$$

$$= \text{₦}368,772.50$$

$$ATR = \frac{\text{Fixed Total}}{\text{No of Respondents}}$$

$$= \frac{\text{₦}4722043}{80}$$

$$= \text{₦}59,025.50$$

Table 2: Computation of gross margin analysis

Items	Value (₦)
Average total revenue	368,772.5
Average variable cost	233,403.2
Gross margin	135,369.3
Average fixed cost	59,025.5
Net returns	76,348.8

$$AVC = \frac{\text{Variable Cost}}{\text{No of Respondents}}$$

$$= \frac{\text{₦}18,672,258}{80}$$

$$= \text{₦}233,403.20$$

$$ATC = \frac{\text{Total Cost}}{\text{No of Respondents}}$$

$$= \frac{\text{₦}23,394,301}{80}$$

$$= \text{₦}292,428.70$$

Budgetary analysis
Gross margin analysis: The gross margin of an enterprise is the difference between the total revenue realized from the business and total variable cost incurred in the business. The net profit can be calculated by subtracting total fixed cost from gross margin. The computation for the gross margin analysis could be seen in Table 2.

Therefore,
Gross margin = Average total revenue-Average variable cost
$$= \text{₦}368,772.50\text{-N}233,403.20$$
$$= \text{₦}76,343.80$$

- Benefit-cost Ratio (BCR):
$$BCR = \frac{\text{Average Total Revenue}}{\text{Average Total Cost}}$$

$$= \frac{\text{₦}368,772.50}{\text{₦}292,28.70}$$

$$= 1.26$$

Regression analysis: Regression analysis was used to estimate the relationship between the socio-economic characteristics of the respondents and their cost and returns. Linear function was used for this purpose (Table 3).

The functional equation of the linear function is given as

$$Y = b_o + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + e_1$$

Where,
Y   = Dependent Variable
bo   = Constant

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Table 3: Results of linear regression analysis

Variable	Parameter estimate	Standard error	T-ratio	Adjusted R^2	R^2	F_a	F_t
Constant	-2741634.00	1048653.200	-2614	69.5%	89.3%	0.27	4.502
X_1	-22037.37	16920.837	-1.302				
X_2	-68189.10	96616.465	-706				
X_3	124650.03	98896.874	1.260				
X_4	560422.53	185979.240	3.013				
X_5	35260.351	28304.720	1.246				

b_1-b_5 = Coefficient of regression of x_1-x_5

X_2 = Marital Status (Single, married, divorce)

X_3 = Educational level (Primary, Secondary, tertiary, others)

X_4 = Religion (Christianity, Muslim, Traditional)

X_5 = Year of experience (Years)

ei = Error term

Y = $b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + e_1$

Y= -2741634 – 22037.37 X_1 – 68189.10 X_2 + 124650.03 X_3 +
    (-2.614)   (-1.3020)   (-0.706)   (1.260)
560422.53 X_4 + 35260.351 X_5 + e_i
    (3.013)   (1.246)

N.B. Figure in parenthesis represents t-value

Adjusted R_2 is 0.695, which indicates that 69.5% variation in profit was explained by the independent variables, while the remaining 30.5% is due to error term.

The value of F test shows that 4 variables (age, marital status, level of education, level of experience) were statistically significant at 5% probability level. This implies that these variables have direct relationship with the profit. The null hypothesis (H_o) is rejected, while the alternative hypothesis (H_1) is accepted because the value of F-calculated is less than the value of F-tabulated.

The result of regression analysis can be thus interpreted coefficient of age (X_1) is negative and statically significant and this indicates that as age increases, profit tends to decrease. Also, coefficient of martial status (X_2) is negative and statically significant. This implies that the more the number of household, the higher the level of consumption, hence the lower the net profit.

However, the coefficient of education (X_3) is positive and statically significant and this shows that the level of education increases as the profit also increase, as the marketers can easily adopt a better and improved marketing techniques.

Likewise, level of experience shows that a positive relationship with the profit and statistically significant. It is expected that the number of years of experience in an enterprise can influence the profit level positively.

Constraints affecting the profitability of broiler marketing: The problems confronting the farmers are:

Land problem: Like any other agricultural activities, land is needed for poultry production. Land is more available in the rural area but insecurity and availability of infrastructure were limiting. Land in the urban center is costly and most farmers may not be able to afford it.

Inadequate capital: Poultry is a capital- intensive business. Money is needed for building pens, purchase of cages and other poultry equipments. Unfortunately most of the farmers do not have the needed capital to effectively acquire these equipments.

Furthermore, most farmers did not have required collateral as security that are often required by financial institutions before a loan is granted, this limits the scope of operation and possible expansion.

High cost of feed: About 50% of poultry feed is made up of maize, which also serve as food and raw materials for many households and industries. This competition between man and livestock is responsible for the high cost of poultry feed.

Disease problem: Poultry is highly risky if not properly managed.

Management problem: This is one of the most important problems faced by farmers. Most farms are being managed by their owners who have little or no knowledge of poultry science. They are therefore been managed on the trial by error basis and this has accounted for failure of most farms.

CONCLUSION

The general objective of the study was to determine the probability of boiler marketing in the study area. The study revealed that most of the respondents were male with a percentage of 75% while the female were 25%. It was discovered that 97.5% of the respondents fell into middle age (21-50 years). All the respondents had formal education and this implies that all of them were literate.

Regression analysis showed that there is significant relationship between the respondents and there profit.

The gross margin analysis revealed a benefit-cost ratio of 1.26 which can be translated to mean that for every amount invested the ratio of benefit to cost is 1.26: 1.

Problems like inadequate land, high cost of feeding, labour problems, high mortality rates, inadequate capital and management problem affects productivity.

The study shows that broiler marketing in the study area is profitable.

RECOMMENDATIONS

It is recommended that the broiler farmers in the study area should form co-operative unions to complement government effort. Also, there is need for basic marketing facilities such as good motor able roads, credit facilities, these will increase marketing efficiency if provided by the government.

Government should ensure that policies on poultry products are implemented, this will increase the productivity of the farmers and policies aimed at increasing total production should be enhanced.

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