

# PROFIT FUNCTION ANALYSIS OF BROILER PRODUCTION IN FCT ABUJA

<sup>1</sup>Professor P. O. Idisi, <sup>2</sup>Dr. (Mrs.) I .J Ogwu, <sup>3</sup>Ajodo, R

<sup>1,2,3</sup>Department of Agricultural Economics, University of Abuja, P.M.B 117, Abuja, FCT, Nigeria  
Corresponding Author: Ajodo, Reuben

---

**Abstract:** The study examined the profit function analysis of broiler production in FCT Abuja Nigeria. Using a multi-stage random sampling technique, a total of 240 broiler farmers will be randomly selected. The relevant data for the study will be collected through a set of structured questionnaire administer to the respondents. The study will estimate the profit of broiler products and analyze factors that determine profitability of broiler producing farmers. The analytical tools that will be used in this study are net income analysis and profit function analysis. From the result of the study it will show that broiler production in FCT is highly profitable. However, the results will show that broiler production enterprise operating within the rational area of the profit function suing all the cost items. The need for Government to put in place a type of stabilization fund through the requisite agencies to ensure prices of commodities to be stable at the acceptable level.

**Keywords:** profit function analysis, broiler production, FCT Abuja.

---

## 1. INTRODUCTION

### 1.1 Background of the Study

The term poultry refers to all domesticated birds that are beneficial for man. These birds are characterized based on the purpose of keeping them. Some are breed specifically for egg production (egg-type chicken). Some birds are breed specifically at production (meat-type chicken). Another meat-type chicken are dual – purpose, these group are the production for both meat and egg – at economic level.

The economic importance of poultry enterprise can be classified as either domestic (subsistence) or commercial poultry production. In subsistence means rearing some chicken around the compound purpose ling fro consumption while commercial poultry production is practice for sale. The commercial poultry production is alone for different purposes. There is poultry for egg production, poultry for feather production and poultry for meat production. Poultry for meat production may be turkey or guinea fowl or broiler. Broiler is the type of chicken breed fro meat production only.

Nigerian poultry farmers especially small scale farmers depend on a sub-standard method of poultry production. They use sub-standard feed, improper vaccination etc. Some time, this traditional method may be extensive or intensive system. Poultry entrepreneurship is a good and vital hint that poultry production is the fasted economic animal protein intake by most of Nigerian household.

### 1.2 Problem Statement

The problem of most investors in Nigeria today is inability to make good decision on the nature of enterprise to make optimum profit from. The same problem applies to most broiler producers in Gwagwalada Area Council.

Another major constraints include lack of capital, input availability and socio-economic factors. All these are properly analyzed.

### 1.3 Objectives of the study

- i. Estimate the profit in broiler production in the study area.
- ii. Analyze factors that determine profitability of broiler production in the study area.
- iii. Prefer some policy recommendations based on the findings of their investigation.

#### 1.4 Significance of the Study

The study of the profit function analysis of broiler production in FCT Abuja is necessary because it will bring to focus problems encountered by these broiler producers during production activities. More importantly, the study would provide information on the costs and returns that accrue to broiler producers and factors that influence their level of profitability which will enhance agricultural productivity and efficiency.

## 2. CONCEPTUAL FRAMEWORK

The term enterprise is the activity of managing companies and business and starting new ones. ([www.collinsdictionary.com](http://www.collinsdictionary.com)). It is another word for a profit business or company, but it is most often associated with entrepreneurial ventures ([www.shopify.com](http://www.shopify.com)). An entrepreneur is a person who has possession of an enterprise and assumes significant accountability for the inherent risks and the outcome. In this context, broiler production can be undertaken by an entrepreneur as an enterprise. In this case, the entrepreneur combines the land, labour and capital to create and market new goods and services. The main purpose of broiler production lies on the provision of protein food for human.

In Nigeria, there is an increasing demand for livestock products such as egg and meat, so as to raise the nutritional standard but the supply is not keeping pace with demand. With great increase in population and the demand for animal protein, the development of animal industry, especially the fast developing and rapidly multiplying ones as the poultry becomes very necessary (Anyanwu, et, 2007); As a follow-up to the importance of broiler production, Jakonde, (2016), agreed that if Nigeria is to meet its livestock production objective which is to be self-sufficiency in meat it is imperative that we should preserve in the production of all classes of farm animals especially broiler no matter the temporary hardship.

Adebayo and Adeola (2005), assert that the poultry sub-sector has falling short of its aim of self-sufficiency in animal protein production, Apantaku, (2006) ascribes this trend to the low level of poultry production in comparison to the level of poultry technologies being generated by Nigerian poultry production researchers. The prevailing situation was worsened in 2006 by the reported outbreak of the highly pathogenic avian influenza in some state of the federation.

Broiler farming like other business requires huge capital investment and adequate constant funding. There are many items which constitute broiler inputs such as feeds, drugs, equipment, labour and other facilities. Ajakaiye, (1981), reported that financial problems have been identified as one of the reasons for backwardness in livestock production. As perceived by Anthony, (1990), The principal cost of a broiler enterprise is the cost of feed which many represent about 65-85% of the cost of production, he added that the price of broiler chicks is also very remarkable especially where improved strain are used.

Bazuaya, (1979), described disease to be any alteration in the general state of the body which disturbs or alters adversely the productivity and market value of livestock. Devendra and Fuller (2013), asserted that there is no doubt at all, that one of the most important problems that has infestation. It has been observed that all livestock disease whatever there is cause I, whether microbial, parasitic or nutritional, mild or severe have some economic implication to the entrepreneur. These include loss of stock by death, retardation of growth, loss of market value, poor feed, conversion etc. There is a yawning gap between demand and supply of broiler products which therefore calls for more entrepreneurship especially in Gwagwalada Area council Abuja FCT.

According to Kalu (2002), production is a process whereby some goods or services called inputs are transformed into other goods and services called output or products.

The production theory concerns itself with the problem of combining various input, given the state of technology, in order to produce a stipulated output. The technological relationships between inputs and output are known as production function.

An agricultural production function as in the case of broiler production is stated in its general explicit form as:

$$Y=f(x_1, x_2, \dots, x_n)$$

Where  $y$  = Quantity of output of broiler meat by the enterprise (In kg) and  $x_1, x_2, \dots, x_n$  = Quantities of inputs or resources such as labour and capital.

### Profit function analysis

A profit function relates maximized profits to the prices of products and inputs, so also other exogenous variables such as fixed inputs and social variables. The parameters of a profit function contain all the information about the underlying production function.

$$Q = f(p_y, p_1, p_2, \dots, p_m, Z_1, Z_2, \dots, Z_n)$$

This gives the profit function.

## 3. RESEARCH METHODOLOGY

### 3.1 The Study Area:

Federal Capital Territory (FCT) Abuja Nigeria is located in the centre of Nigeria and has a land area of 7,315km<sup>2</sup>. It is bounded on the north by Kaduna State, on the West by Niger state, on the East and South East by Nasarawa State and on the South West by Kogi State. It falls within latitude 8°25' and 9°20' North of the equator and longitude 6.45 and 7.37 East of Greenwich Meridian, Abuja is geographically located in the center of the country. It is situated within the Savanah region with moderate climatic conditions. FCT is made up of six Local government Area Councils namely Abaji, AMAC, Gwagwalada, Kuje, Bwari and Kwali. The population is made up of 244,200 people (population city 2015).

### 3.2 The Sampling technique and data collection:

For the purpose of the study, multi-stage random sampling method will be used for selecting respondents. First, two (2) towns will be randomly selected from each local government area which will give twelve (12) towns. Lastly, twenty broiler producers will be randomly selected from each town given 240 broiler producers.

Primary and secondary data will be used from the study. The primary data will be collected using well structured questionnaires to collect information on respondent's socio-economic characteristics such as age, source of credit, sex, number of bird, level of education, quantity of input used.

Secondary data will be obtained from the information from Research Institute Publication and Journals.

### 3.3 Method of Data Analysis

Objective 1 will be realized using Net income analysis

Objective 2 will be achieved with the aid of a profit function by estimating the profit levels of facto input on the broiler business.

### 3.4 Profit Function analysis

Profit function analysis will be applied to estimate the relationship between input and output prices used by the farmer and their profit level. The generalized profit function model is given as follows:

$$Q=f(p_y, p_1, p_2, p_3, p_4, p_5, Z_1, Z_2, Z_3, Z_4, Z_5, Z_6, e)$$

Where Q = amount of maximum profit ₦

P<sub>y</sub> = price of out put ₦

P<sub>1</sub> = price of labour ₦

P<sub>2</sub> = price of water used ₦

P<sub>3</sub> = Price of transportation ₦

P<sub>4</sub> = per unit cost of bird ₦

P<sub>5</sub> = Cost of drug ₦

Z<sub>1</sub> = Per unit cost of feeder ₦

Z<sub>2</sub> = Per unit cost of drinker ₦

Z<sub>3</sub> = Cost of poultry house ₦

$Z_4$  = Depreciated expense of feeder ₦

$Z_5$  = Depreciated expense of drinker ₦

$Z_6$  = Depreciated expense of poultry house ₦

E = error term

#### **4. EXPECTED RESULTS AND DISCUSSION**

##### **4.1 Estimation of expected profit in broiler production (manure and meat).**

To estimate the expected profit in broiler products, net income analytical tool will be used. The return on investment ratio will also be determined. The depreciation values of fixed items will be computed using the straight-line method with assured zero salvage value.

Table 1 and 2 will be formed to show the total revenue, total variable cost, gross margin, total cost and net income annually of broiler products (manure and meat) for broiler producers. The gross margin and the net income in the manure and meat will be presented in percentage. This implies that one naira invested in broiler production will yield a profit of some amount of kobo.

#### **5. RECOMMENDATIONS**

(a) There is the need for both Federal, State and Local Government should put in place a type of stabilization fund through the requisite agencies to ensure that prices of the commodities do not fall below acceptable level. It must be noted that poor pricing regime due to fluctuation in prices, discourages production as was observed from this survey.

(b) Provision of infrastructures such as electricity stability and water supply are necessary as they will reduce the cost of broiler production thus increase profit.

#### **6. CONCLUSION**

Judging from the net income analysis and the return on investment ratios, broiler production enterprise is highly profitable.

#### **REFERENCES**

- [1] Adebayo, O. O. R. G. Adeola (2005). Socio-economic factors Affecting poultry farmers in Ejigbo Local government areas of Osun State. *J. Humans*;
- [2] Apantaku, S.O. (2006). An analysis of participation of farmers *Ecol*, 18:29 – 1. *Farmer magazines ABU Vol. 2 No.4*
- [3] Anyanwu. A.C.V.A and B.A (2007). A textbook of Agriculture for school certificate. African Education publishers. Nigeria.
- [4] Ajakaiye J. (1981). Agricultural loans for large scale farmers, *Ecol-18:29-1 Farmer magazines ABU Vol. 2 No. 4*
- [5] Anthony Y.D (1990), Introduction to Tropical Agriculture, pub, United State of America, Longman group.
- [6] Bazuaya O. (1979), animal Health Technical Bulletin Vol. 7 No. 1 Division Pflizer Production Limited.
- [7] Devendra C. and M. F Fuller (2013) poultry production in the Tropics pub. Oxford University Press.
- [8] Kalu, O. O (2002). Basic principles of Economics for agricultural projects and policy analysis, Nsukka: Price Publishers.
- [9] Jakonde S. Z (2016), Improvement in Livestock production Nutrition and feed, journal of Nigerian production Vol. No. 2.
- [10] <http://population.city> (2015). 4<sup>th</sup> October 2018.
- [11] [www.collinsdictionary.com](http://www.collinsdictionary.com) (30<sup>th</sup> September, 2018).
- [12] [Www.shopify.com](http://www.shopify.com) (1<sup>st</sup> October, 2018)