



Analysis of Broiler Production Practices and Profitability in Ebonyi North Agricultural Zone, Ebonyi State, Nigeria

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Abstract

Original Research Article

This study assessed broiler production in Ebonyi North Agricultural Zone, Ebonyi State, Nigeria with emphasis on socio-economic characteristics, management practices, profitability, and production constraints. A cross-sectional survey research design was adopted for the study. Data were collected from 105 broiler farmers using structured questionnaires and analyzed using descriptive statistics, chi-square, and regression analysis. The findings revealed that most broiler farmers were within the economically active age group and possessed formal education. The intensive production system was the most commonly practiced management system. Major constraints affecting broiler production included high feed cost, disease outbreaks, lack of veterinary support, poor market access, and inadequate infrastructure. Profitability analysis showed that broiler farming was profitable for most respondents despite production challenges. The study further revealed that proper feeding practices, disease control measures, and good management practices positively influenced profitability. The study concluded that broiler production remains a viable agribusiness enterprise in Ebonyi North Agricultural Zone. The study recommended provision of subsidized feed inputs, improved veterinary extension services, and easier access to agricultural credit facilities to enhance productivity and profitability.

Keywords: Broiler production, Poultry farming, Profitability, Constraints, Ebonyi State, Agricultural zone.

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I. INTRODUCTION

Poultry farming remains one of the most important subsectors of agriculture in Nigeria due to its contributions to food security, employment generation, poverty reduction, and income creation. Among the various poultry enterprises, broiler production has emerged as one of the fastest-growing livestock businesses because of the increasing demand for poultry meat and the short production cycle associated with broiler birds. Broiler farming contributes

significantly to the supply of animal protein and supports the livelihood of many rural and urban households.

Broiler chickens are specifically bred for meat production and possess characteristics such as rapid growth, efficient feed conversion, and early market maturity. The enterprise is attractive to farmers because birds can attain market weight within six to eight weeks, thereby allowing quick turnover and frequent income generation. According to Adebayo and Adeola (2021),



broiler production provides opportunities for small-scale and medium-scale farmers to improve their income and living conditions.

In Nigeria, the poultry industry has continued to expand due to population growth, urbanization, and increasing awareness of the nutritional importance of animal protein. The Food and Agriculture Organization reported that Nigeria is among the leading poultry-producing countries in Africa, with broiler production contributing substantially to meat supply and employment generation. The sector also contributes to the gross domestic product of the country.

Despite the growth of broiler production in Nigeria, several challenges continue to hinder optimum productivity and profitability. High feed cost, disease outbreaks, poor veterinary services, inadequate infrastructure, and fluctuating market prices have negatively affected the performance of poultry farmers. Feed alone accounts for a large proportion of production costs, thereby reducing farmers' profit margins. Disease outbreaks such as Newcastle disease and coccidiosis also contribute significantly to mortality and financial losses among poultry farmers.

In Ebonyi North Agricultural Zone, broiler farming has become an important agricultural enterprise among rural households. Farmers in the area engage in intensive, semi-intensive, and extensive production systems depending on their capital base and management capacity. However, the extent to which socio-economic characteristics, management practices, and production constraints influence productivity and profitability among broiler farmers in the area has not been adequately documented.

Most previous studies focused on broader poultry production systems in Nigeria with limited empirical evidence on broiler farming activities within Ebonyi North Agricultural Zone. This lack of localized information limits effective policy formulation and intervention strategies aimed at improving poultry production in the region. Therefore, there is a need to assess broiler production in Ebonyi North Agricultural Zone in order to provide empirical evidence that can guide farmers, policymakers, and extension agents.

Objectives of the Study

The main objective of this study was to assess broiler production in Ebonyi North Agricultural Zone, Ebonyi State, Nigeria.

Specifically, the study sought to:

1. Describe the socio-economic characteristics of broiler farmers in Ebonyi North Agricultural Zone;
2. Identify management practices used by broiler farmers;
3. Examine major constraints affecting broiler production in the study area;
4. Estimate profitability and financial practices of broiler producers; and
5. Identify strategies for improving broiler production in the area.

Hypotheses

HO1: There is no significant relationship between the socio-economic characteristics of broiler farmers and productivity.

HO2: Management practices do not significantly affect profitability of broiler production.

II. LITERATURE REVIEW

A. Concept of Broiler Production

Broiler production refers to the rearing of specially bred chickens for meat purposes under controlled management systems. Modern broiler breeds are characterized by rapid growth, high feed efficiency, and short production cycles. Broiler farming has become a major source of income and employment for many households in Nigeria.

B. Broiler Production Systems

Broiler production can be practiced under intensive, semi-intensive, or extensive systems. The intensive system involves raising birds in controlled environments with proper feeding, vaccination, and housing. The semi-intensive system combines indoor confinement with limited outdoor access, while the extensive system allows birds to roam freely in search of food.

The intensive system is the most commonly adopted among commercial farmers because it enhances growth performance and disease control. However, the system requires higher capital investment and management skills.

C. Management Practices in Broiler Farming

Effective management practices are essential for profitable broiler production. Important management activities include proper feeding, housing, sanitation, vaccination, and disease control. Feed quality significantly affects growth rate and profitability because feed constitutes the largest proportion of production cost.

Disease prevention through vaccination and biosecurity measures also contributes to improved productivity. Farmers who maintain proper hygiene and consult veterinary professionals regularly experience lower mortality rates.

D. Profitability of Broiler Production

Broiler farming has been identified as a profitable agribusiness due to high demand for poultry meat and rapid turnover period. Profitability depends on effective cost management, particularly feed cost management, disease control, and market access.

Studies have shown that farmers who adopt improved management practices record higher profit margins and better return on investment compared to farmers using poor management systems.

E. Constraints Affecting Broiler Production

Major constraints affecting broiler production include high feed cost, disease outbreaks, poor access to veterinary services, inadequate infrastructure, and limited access to finance. These constraints reduce productivity and discourage expansion among poultry farmers.

F. Empirical Studies

Adedeji et al. (2021) reported that quality feed and veterinary care significantly improved broiler productivity among poultry farmers in southwestern Nigeria. Similarly, Eze and

Ogbuewu (2019) identified poor market access and inadequate financial support as major challenges affecting poultry farmers in southeastern Nigeria.

Ume et al. (2022) found that farmers who adopted improved biosecurity measures experienced lower mortality rates and higher productivity. Ike et al. (2020) also observed that inadequate access to veterinary services negatively affected poultry production efficiency.

G. Theoretical Framework

This study was anchored on the Theory of Agricultural Modernization and the Theory of Constraints. The Agricultural Modernization Theory emphasizes adoption of improved technologies and management practices to enhance agricultural productivity. The Theory of Constraints explains that productivity is limited by major bottlenecks such as feed cost, diseases, and poor infrastructure.

H. Research Gap

Although several studies have examined poultry production in Nigeria, limited attention has been given to broiler farming in Ebonyi North Agricultural Zone. Existing studies focused mainly on larger agricultural regions with little emphasis on localized challenges, management practices, and profitability of broiler farming in the study area. This study therefore fills the existing knowledge gap.

III. METHODOLOGY

A. Study Area

The study was conducted in Ebonyi North Agricultural Zone, Ebonyi State, Nigeria. The area comprises Abakaliki, Ebonyi, Izzi, and Ohaukwu Local Government Areas. Agriculture is the major occupation of the people, with poultry farming serving as an important source of livelihood.

B. Research Design

The study adopted a cross-sectional survey research design. This design enabled the

collection of data from broiler farmers at a specific point in time.

C. Population and Sampling Procedure

The population of the study comprised all registered broiler farmers in Ebonyi North Agricultural Zone. A multistage sampling technique was employed in selecting respondents.

Three Local Government Areas namely Abakaliki, Izzi, and Ohaukwu were purposively selected due to the high concentration of broiler farmers. Two communities were selected from each Local Government Area, after which simple random sampling was used to select respondents.

The sample size of 105 respondents was determined using Yamane’s formula:

$$N = N / 1 + N\epsilon^2$$

Where:

N = sample size

N = population size

E = level of precision

D. Data Collection Method

Primary data were collected using structured questionnaires and interview schedules. Information obtained included socio-economic characteristics, management practices, profitability, and constraints affecting broiler production.

E. Method of Data Analysis

Data collected were analyzed using descriptive and inferential statistics. Descriptive statistics such as frequency, percentage, and mean were used to analyze socio-economic characteristics and management practices.

Chi-square analysis was used to test the relationship between socio-economic characteristics and productivity, while regression analysis was used to determine the effect of management practices on profitability.

IV. RESULTS AND DISCUSSION

A. Socio-economic Characteristics of Respondents

Table 1: Socio-economic Characteristics of Broiler Farmers

Variables	Frequency	Percentage
Less than 20 years	4	3.80
20–29 years	18	17.14
30–39 years	29	27.61
40–49 years	31	29.52
50–59 years	14	13.33
60 years and above	9	8.57

Source: Field Survey, 2025.

The findings revealed that most broiler farmers were within the economically active age group of 30–49 years, accounting for over half of the respondents. This implies that broiler production in the study area is dominated by individuals who possess the physical strength, managerial ability, and risk-taking capacity required for commercial poultry farming. The active involvement of middle-aged farmers suggests that broiler production remains an attractive agribusiness venture capable of generating income and employment opportunities. Younger farmers are generally more receptive to innovation and are more willing to adopt improved production technologies than older farmers.

The educational status of respondents further revealed that a large proportion possessed formal education ranging from primary to tertiary levels. Education enhances farmers’ ability to understand production technologies, maintain accurate records, access market information, and adopt improved management practices. Educated farmers are more likely to benefit from extension services and training programmes designed to improve poultry productivity. This finding agrees with Yusuf, Adepoju, and Adebisi (2023), who reported that educational attainment

positively influences poultry enterprise performance through improved managerial decision-making.

The study also showed that many respondents had several years of experience in poultry production. Farming experience contributes significantly to productivity because experienced farmers are better able to manage disease outbreaks, feed utilization, and marketing challenges. Experience enables producers to identify profitable production strategies and avoid costly mistakes associated with broiler management.

B. Management Practices Used by Broiler Farmers

Table 2: Management Practices Used by Broiler Farmers

Production System	Frequency	Percentage
Intensive	64	61
Semi-intensive	28	27
Extensive	13	12

Source: Field Survey, 2025.

The study showed that the intensive production system was the most commonly adopted management system among broiler farmers in Ebonyi North Agricultural Zone, accounting for 61% of respondents. The dominance of the intensive system may be attributed to its advantages in terms of disease control, feed efficiency, growth performance, and ease of management. Intensive production allows farmers to monitor birds closely and provide adequate feeding, vaccination, and sanitation practices.

The preference for intensive management agrees with Akinyemi and Ojediran (2024), who observed that commercial poultry farmers increasingly adopt intensive systems due to their ability to maximize output per unit area.

Intensive systems also facilitate implementation of biosecurity measures which reduce disease incidence and mortality rates.

The findings further revealed that most respondents practiced regular feeding schedules, with many adopting ad-libitum feeding methods. Adequate feeding remains one of the most critical determinants of broiler performance because broiler chickens require balanced nutrition for rapid growth and efficient feed conversion. Farmers who maintained consistent feeding programmes recorded better growth rates and higher market weights than those with irregular feeding practices.

Furthermore, sanitation and biosecurity practices were commonly adopted among successful farmers. These included routine cleaning of poultry houses, disinfection of equipment, restriction of visitors, and proper disposal of poultry waste. Farmers who practiced strict biosecurity measures experienced lower mortality rates and improved flock performance. This finding supports Ibrahim, Yusuf, and Garba (2024), who reported that biosecurity compliance significantly improves poultry productivity and profitability.

C. Major Constraints Affecting Broiler Production

Table 3: Major Constraints Affecting Broiler Production

Constraints	Frequency	Percentage
High cost of feed	93	89
Diseases	81	77
Lack of veterinary support	76	72
Poor market access	68	65
Poor infrastructure	55	52

Source: Field Survey, 2025.

The findings identified high feed cost as the most serious constraint affecting broiler production, with 89% of respondents indicating that it posed a major challenge. Feed constitutes the largest component of poultry production costs, often accounting for between 60% and 75% of total production expenses. Rising prices of maize, soybean meal, fish meal, and other feed ingredients have significantly increased production costs and reduced farmers' profit margins.

The result is consistent with Ojo, Bello, and Salami (2024), who identified feed price inflation as the most important factor limiting poultry profitability in West Africa. Increasing feed costs force many farmers to reduce flock sizes, adopt alternative feed formulations, or postpone expansion plans.

Disease outbreaks ranked as the second most severe constraint affecting broiler farmers. Diseases such as Newcastle disease, coccidiosis, infectious bursal disease, fowl typhoid, and chronic respiratory diseases continue to cause substantial economic losses in poultry enterprises. Disease outbreaks increase mortality rates, reduce growth performance, increase medication expenses, and lower market value of birds.

The study also identified inadequate veterinary support as a major challenge. Veterinary services are essential for disease diagnosis, treatment, vaccination scheduling, and health monitoring. Farmers without adequate access to veterinary professionals often experience delayed disease detection and increased flock losses. Similar observations were reported by Ume, Nwachukwu, and Obasi (2024), who found that poor veterinary support remains a major limitation to broiler production in southeastern Nigeria.

Poor market access was another important challenge affecting respondents. Farmers frequently encounter unstable market prices, limited access to reliable buyers, and excessive dependence on middlemen. These factors reduce farmers' bargaining power and lower profit margins. Nwankwo, Esiobu, and Eze (2023) similarly reported that weak poultry value chains and poor market integration negatively affect

poultry enterprise profitability.

Inadequate infrastructure was equally identified as a production constraint. Poor road networks, unstable electricity supply, and limited storage facilities increase transportation costs and operational inefficiencies. Poor infrastructure also limits access to markets and production inputs, thereby affecting enterprise performance.

D. Profitability and Financial Practices

Table 4: Profitability and Financial Practices of Broiler Farmers

Profit Range	Frequency	Percentage
Below ₦50,000	24	23
₦50,000–₦100,000	38	36
₦100,001–₦150,000	26	25
Above ₦150,000	17	16

Source: Field Survey, 2025.

The profitability analysis revealed that broiler production remains a profitable enterprise despite numerous production constraints. The majority of respondents earned profits above ₦50,000 per production cycle, indicating that broiler farming contributes significantly to household income generation and livelihood improvement.

Farmers who implemented proper feeding programmes, maintained strict disease control measures, and practiced effective record keeping achieved higher profit margins than others. Efficient management practices reduce production losses and improve overall enterprise performance.

The findings further revealed that record keeping contributed positively to financial management. Farmers who maintained records of expenditure, sales, mortality, and feed consumption were better positioned to evaluate enterprise

performance and make informed decisions. Proper record keeping also improves access to agricultural credit because financial institutions often require evidence of farm performance before granting loans.

The profitability of broiler production observed in this study agrees with Afolabi, Adegbite, and Ogunniyi (2023), who reported that poultry production remains one of the most profitable livestock enterprises in Nigeria when efficient management practices are adopted.

E. Test of Hypotheses

Hypothesis One

The chi-square analysis showed a significant relationship between socio-economic characteristics and productivity among broiler farmers. Therefore, the null hypothesis was rejected. This result suggests that factors such as age, educational level, farming experience, and household size significantly influence production outcomes. Educated and experienced farmers are more likely to adopt improved technologies and management practices, leading to higher productivity.

Hypothesis Two

The regression analysis revealed that management practices significantly influenced profitability among broiler farmers. Consequently, the null hypothesis was rejected. Proper feeding, vaccination, sanitation, biosecurity measures, and record keeping positively affected profitability. Farmers who adopted these practices recorded lower mortality rates, improved feed efficiency, and higher market returns.

The result supports the findings of Ezeh, Okoye, and Nwibo (2023), who reported that management efficiency is a major determinant of profitability in poultry enterprises. Similarly, Zhang, Wang, and Liu (2024) concluded that sustainable poultry management practices significantly improve enterprise performance under changing market conditions.

F. General Discussion of Findings

Overall, the findings demonstrate that broiler production remains a viable and profitable agribusiness enterprise in Ebonyi North Agricultural Zone despite the numerous challenges confronting farmers. The dominance of educated and economically active farmers provides a strong foundation for technology adoption and enterprise expansion. However, persistent challenges such as high feed costs, disease outbreaks, inadequate veterinary services, poor infrastructure, and limited market access continue to constrain productivity.

Addressing these challenges through government support, improved extension services, affordable credit facilities, and stronger farmer cooperatives would significantly enhance broiler productivity and profitability. Furthermore, encouraging farmers to adopt modern management practices, improved biosecurity measures, and efficient record-keeping systems would contribute to sustainable growth of the poultry industry in the study area.

The findings underscore the importance of policy interventions aimed at reducing production costs, strengthening veterinary support systems, improving market access, and enhancing infrastructure development. Such interventions would not only improve farmers' incomes but also contribute to increased poultry meat production, employment generation, and food security in Nigeria.

V. CONCLUSION AND RECOMMENDATIONS

The study assessed broiler production in Ebonyi North Agricultural Zone, Ebonyi State, Nigeria. The findings revealed that broiler production is a profitable agribusiness enterprise despite numerous production challenges.

The study identified high feed cost, disease outbreaks, inadequate veterinary support, poor market access, and poor infrastructure as the major constraints affecting broiler production in the area.

The study concluded that efficient feeding practices, disease control measures, and adoption

of improved management practices significantly enhance productivity and profitability among broiler farmers.

Based on the findings, the study recommended that:

1. Government should provide subsidized feed inputs to poultry farmers.
2. Veterinary extension services should be strengthened in rural areas.
3. Farmers should be encouraged to adopt improved biosecurity measures.
4. Agricultural credit facilities should be made accessible to poultry farmers.
5. Farmer cooperatives should be encouraged to improve access to markets and farm inputs.

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