

# ANALYSIS OF BROILER POULTRY PRODUCTION IN EBONYI STATE, NIGERIA

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## ***Abstract***

*The study focused on the analysis of broiler poultry production in Ebonyi State, Nigeria. A total of four research questions and two null hypothesis were formulated to guide the study. Owing to the relative large population, purposive sampling technique was used to select 455 respondents from the 5271 broiler poultry farmers in the state. A well structured questionnaire was used to solicit information from the respondents. Descriptive statistics was used to analyze the data collected. The findings of the study revealed that broiler poultry production was dominated by farmers within the middle age group and out of this, male farmers out-numbered the female farmers. On the educational level of the respondents, those with SSCE/GCE dominated the broiler poultry industry in the study area. The farmers who reared large number of chickens were fewer than those who reared smaller number of broilers. The major benefits derived from broiler production includes: income generation, source of employment and source of meat. The largest number of respondent adopted the intensive method of rearing. The following were some of the major challenges encountered by the farmers: high cost of day-old chicks and feed, poor quality feed, high mortality rate, high cost of drugs and vaccines, etc. Based on the findings, the government, research institutes, NGOs and indeed the general public are enjoined to address the challenges encountered by the farmers so as to boost poultry production in the state and encourage more people to go into the poultry industry.*

***Keywords:*** *Broiler production, management and challenges.*

## **Introduction**

### **Background to the Study**

The broiler poultry production is among the fastest growing subsector of livestock industry in Nigeria (Nwambe and Eme, 2011). The demand for animal protein has been on the increase over the years and the broiler poultry industry holds a great promise. It needs to be expanded if it is to bridge the gap in protein intake. The expansion of the poultry industry has been hampered by fluctuation in the supply of good quality feed (Balogun *et al.* 2001). The slow growth of the

poultry industry is attributed to lack of credit facilities for the procurement of basic equipment and materials necessary for rearing of poultry birds on large scale (Arosanya, 2003).

Also, low level of education and lack of awareness of existing loan facilities (Mesike and Okoh, 2008), Non-possession of collaterals, non-involvement of farmers in the development of extension projects, fear and uncertainty, excessive bureaucratic procedures, high interest rates and delay in disbursement, were also reported by Okojie *et al*, (2010) as constraints. If the small, medium and large scale farmers are to remain in business, they must have access to credit facilities so as to be able to meet –up with the ever increasing and galloping prices of day-old chicks and poultry feeds. However, the government and non-government agencies have over the years tried to assist the farmers by committing large sums of money into financing their activities through micro-credits.

For instance, the Agricultural, Commercial and Microfinance Banks, Poverty Eradication Programmes, Non-Governmental Organizations and United Nations Development Programmes (U.N.D.P.), Provided about 35% of the credit needs of farmers, while other informal sources, namely: friends, relations, local money lenders, traders and merchants, “ISUSU”, and other traditional lending groups operating outside legal framework, provided about 65% (Ugwumba *et al*, 2009). The demand for agricultural credit depends on the cost of the credit (the interest rate) and the returns on investment (Ugwumba and Muojekwu, 2012).

### **Statement of the Problem**

The choice of broilers as the experimental animal, was informed by the fact that it is the most favoured choice among other poultry species to meet the meat needs of Nigerians because of its fast growth rate and high feed conversion potentials. Moreover, in Ebonyi State, there is hardly any family that have not engaged in the production of poultry. However, most of them do so on a small scale. This may be attributed to lack of sufficient fund and difficulty in accessing credit

facilities which could have enabled them to expand their level of production. In view of this, the study is designed to investigate the demographic traits of broiler poultry farmers in the study area; assess the enterprise profitability, determine the management system, and identify the challenges facing the broiler poultry farmers in Ebonyi State.

### **Purpose of Study**

The general purpose of the study is to analyse broiler poultry production variables in Ebonyi State.

Specifically, the study is designed to:

1. determine the demographic characteristics of broiler poultry farmers in Ebonyi State
2. ascertain the benefits derived from rearing broiler poultry in the study area
3. identify the management systems adopted by farmers in Ebonyi State.
4. determine the challenges confronting broiler poultry farmers in the study area.

### **Justification of the Study**

The results of the study when published will be beneficial to farmers, researchers, students, government, NGOs, extension workers and any other individual or groups that may have interest in broiler poultry farming.

### **Scope of the Study**

The study will cover the 13 Local Government Areas of Ebonyi State which are: Abakaliki, Ebonyi, Izzi, Ezza South, Ezza North, Ikwo, Ohaukwu, Ishielu, Afikpo South, Afikpo North, Ohaozara, Ivo and Onitsha.

## **Research Questions**

The following research questions shall guide the study:

1. What are the demographic characteristics of broiler poultry farmers in Ebonyi State?.
2. Do farmers benefit from rearing broilers in Ebonyi State?
3. What are the management systems adopted by broiler poultry farmers in Ebonyi State?
4. What are the challenges confronting broiler poultry farmers in Ebonyi State?

## **Hypothesis**

The hypothesis was tested at 0.05 significant level.

**HO<sub>1</sub>:** There is no significant relationship between the contributions of the management systems adopted by broiler farmers on the benefits of the broiler enterprise

**HO<sub>2</sub>:** The challenges faced by broiler farmers has no significant difference in the benefits of the broiler poultry enterprise

## **Research Design**

The research design used for the study is descriptive survey. A survey focuses on people, opinions, beliefs, attitudes, motivations and behaviors (Akuezulo and Agu, 2003). A descriptive survey research design is a study in which information are collected from a small sample of a large population to enable the researcher describe in a systematic manner and interpret the characteristic features and facts about the things that exist (Abonyi, 2006).

## **Area of Study**

The 13 Local Government Areas of Ebonyi State forms the area of study. The Local Government Areas are: Abakaliki, Izzi, Ebonyi, Ezza South, Ezza North, Ohaukwu, Ishielu, Ikwo, Afikpo South, Afikpo North, Ohaozara, Ivo, and Onicha.

### **Population of the Study**

The area of study is made up of 5271 broiler poultry farmers (Ministry of Agriculture, 2018), spread across the 13 LGAs as follows: Abakaliki = 621, Izzi = 412, Ebonyi =428, Ezza South = 375, Ezza North = 401, Ohaukwu = 398, Ishielu = 369, Ikwo = 546, Afikpo South = 324, Afikpo North = 309, Ohaozara = 372, Ivo = 391 and Onicha = 325.

### **Sample and Sampling Techniques**

Due to the relative large population of the respondents, a total of 35 farmers were randomly selected from each of the 13 LGAs and that gave a total of 455 farmers used for the study.

### **Instruments for Data Collection**

The instrument for data collection from the respondents was a well structured questionnaire titled “Broiler Poultry Production variables in Ebonyi State” (BPPVES). The questionnaire shall be of two sections A and B

Section A contains the instruction on how to answer the research questions while section B contain the questionnaire items addressing each of the research questions one (1) to four (4). A four point linkert scale was used to elicit information (data) from the respondents on the level of agreement on each of the question items and was ranked in the following order: strongly Agreed (SA) =4, Agreed (A) = 3, Disagreed (D)=2 and Strongly Disagree (SD) =1. To determine the cut-off point (critical mean):

$$\text{_____} X = \frac{4 + 3 + 2 + 1}{4} = 2.50$$

therefore, any mean value of 2.50 and above was accepted while a mean value less than 2.50 was rejected.

### **Validation of Instrument**

The instrument was validated by 3 experts in measurement and Evaluation and Department of Animal Science, all drawn from Ebonyi State University for proper scrutiny (on: language and sentence, structure, vocabulary, simplicity, suitability, clarity and relevance). All the observations and corrections of the validators were reflected in the final draft.

### **Reliability of the Instruments**

The instrument was tested for its internal consistency using cronbach alpha coefficient. This was done using a pilot test with selected poultry farmers in Enugu State which is not the state of study. If the coefficient value is high, that will indicated that the instrument is good and reliable for the study, and vice versa.

### **Method of Data Analysis**

The data collected were analyzed using percentages and frequency, mean and standard deviation. The regression analysis was used to test hypothesis 1 and 2 at 0.05 level of significance.

### **Result Presentation And Analysis**

### Research Question 1:

#### What are the demographic data of broiler poultry farmers in Ebonyi State?

Table 1: Demographic data of broiler poultry farmers in Ebonyi State.

S/N	Variables		
	Age	Frequency	Percentages
1	18-27	39	8.59
2	28-37	60	13.19
3	38-47	101	22.19
4	48-57	112	24.62
5	58-67	86	18.90
6	68 and above	57	12.53
	<b>TOTAL</b>	<b>455</b>	<b>100</b>
	Sex		
1.	Male	254	55.82
2.	Female	201	44.18
	<b>Total</b>	<b>455</b>	<b>100.00</b>
	Educational Level		
1.	No formal education	94	20.66
2	FSLC	105	23.08
3	SSCE/GCE	116	25.49
4.	OND/NCE	83	18.53
5	HND/University degree	57	12.53
	<b>TOTAL</b>	<b>455</b>	<b>100</b>

S/N	Variables		
	Number of poultry chickens reared	Frequency	Percentage
1	50-149	101	22.20
2	150-249	94	20.66
3.	250-349	62	13.63
4.	350-449	51	11.21
5	450-549	43	9.45
6	550-649	39	8.57
7	650-749	31	6.81

8.	750 and above	34	7.47
	<b>TOTAL</b>	<b>455</b>	<b>100</b>
	<b>Farming Experience (Years)</b>		
1.	1-5	46	10.11
2.	6-10	37	8.13
3.	11-15	91	20.00
4.	16 -20	105	23.08
5	21-28	94	20.66
6.	29 and above	82	18.02
	<b>TOTAL</b>	<b>455</b>	<b>100</b>

The data in table 1 shows demographic result of the broiler farmers in Ebonyi State. Those within the age of 48-57 were more involved (24.62%) in broiler production followed by 22.19% of the farmers aged between 38-47 years. However, the result further shows that 8.57% of those aged 18-27years were least involved in broiler poultry rearing. The result equally shows that male farmers with 55.82% were major broiler farmers closely followed by females with 44.18%. The education level of the respondents indicates that farmers with SSCE/GCE had the highest percentage (25.49%) of involvement followed by 23.08% of those with FSLC. Those with no formal education (20.66%) were next in the order of involvement while the least of them were 12.53% of farmers with HND and university degree. The result in table 1 also indicates that 101 farmers reared between 50-149 broilers followed by 94 farmers with 150-249 birds. The least in the group were 31 farmers who reared between 650-749 broiler chickens. On years of farming experience, 105 farmers have been in the broiler production business for 16-20years followed by 94 others who have reared broilers for 21-28years. The next among them were 46 farmers who have been in the business for only 1-5years.

### Research Question 2:

#### What do farmers benefit from rearing broilers in Ebonyi State

**Table 2: Benefits derived by farmers in rearing broilers in Ebonyi State**

S/N	Variables	Mean (x)	Standard Deviation (SD)	Remarks
1.	Income generation	3.03	0.85	A
2	Employment	2.96	0.98	A



3	Source of meat	2.80	1.20	A
4	Raw materials for industries	0.11	1.01	R
5	Cultural and traditional values	1.56	0.15	R
6	For prestige	0.13	0.28	R
7	Insurance against crop failure	2.25	1.09	R
8	Hobby	1.98	1.26	R
	Grand mean and SD	1.85	0.85	R

In table 2, the mean score of 3.03 indicates that the highest number of farmers are involved in broiler production for income generation followed by others with mean score of 2.96 who engage in broiler rearing as a source of employment. The farmers with mean score of 2.80 rear broilers as source of meat. Other farmers with mean score of 2.25 indicated that the major benefit they get from broiler rearing is because it serves as insurance against crop failure.

### Research question 3:

**What are the management systems adopted by broiler poultry farmers in Ebonyi State?**

**Table 3: management systems adopted by broiler poultry farmers in Ebonyi State.**

S/N	Variables	Mean (x)	Standard Deviation (SD)	Remarks
1.	Intensive system	2.68	0.65	A
2	Semi-intensive system	2.50	1.08	A
3	Free range system	0.17	1.26	R
	<b>Grand mean and SD</b>	<b>1.78</b>	<b>2.15</b>	<b>R</b>

The result in table 3 above shows that farmers with x 2.68 rear their broilers intensively followed by those who manage their broilers semi-intensively (x 2.50). Free range system (x0.17) is least practiced by the farmers.

### Research question 4:

**What are the challenges faced by broiler farmers in Rural and Urban Areas of Ebonyi State?**

**Table 4: Challenges confronting broiler farmers in Rural and Urban Areas of Ebonyi State.**

S/N	CHALLENGES	RURAL AREA			URBAN AREA		
		MEAN (X)	SD	RK	MEAN (X)	SD	RK
1.	High cost of day old chicks	3.26	0.41	A	3.12	0.46	A
2.	High cost of feed	3.57	0.39	A	3.05	0.94	A
3.	Poor quality feed	2.61	1.11	A	2.59	1.17	A
4.	Poor growth rate	2.94	0.53	A	2.88	0.59	A
5	Lack of improved breeds	2.83	0.60	A	2.56	0.88	A
6.	High mortality rate	3.02	0.95	A	3.00	0.99	A
7	Frequent outbreak of diseases	2.90	0.61	A	2.53	0.91	A
8	High cost of drugs and vaccines	3.65	0.26	A	3.45	0.38	A
9	Lack of veterinary personnels	2.52	0.92	A	2.53	0.90	A
10	Lack of capital	2.87	0.89	A	2.62	0.88	A
	<b>Grand mean and SD</b>	<b>3.02</b>	<b>0.67</b>	<b>A</b>	<b>2.83</b>	<b>0.81</b>	<b>A</b>

The mean score of the respondents indicates that all the variables listed are major challenges encounter by farmers as shown in table 4, both in the urban and rural areas.

### **HYPOTHESIS 1**

**HO<sub>1</sub>: There is no significant relationship between the contributions of the management systems adopted by broiler farmers on the benefits of the enterprise.**

**Tables 5: t-test analysis mean rating on intensive and semi-intensive systems of broiler poultry production.**

Management system	N=455	Mean (x)	SD	DF	t-cal	t-tab	Decision
Intensive	294	2.68	0.65			1.96	
Semi-intensive	161	2.50	1.08	453	6.00		Rejected
Grand mean	455	1.78	0.87				

The result in table 5 shows that the t-calculated (6.00) is greater than the t-tabulated (1.96) at 0.05 degree of freedom which implies that the null hypothesis is rejected.

## HYPOTHESIS 2

**HO2: There is no significant difference between the challenges faced by broiler farmers in rural and urban areas on the benefit derived from the broiler production.**

**Table 6: t-test analysis mean rating of challenges faced by farmers to the benefits of broiler production**

Variable	N=455	Mean (x)	SD	DF	t-cal	t-tab	Decision
Rural farmers	294	2.68	1.39	433	1.50	1.96	Accepted
Urban farmers	161	2.63	1.54				
Grand mean	455	2.62	1.47				

In table 6, the t-cal. is less than the t-tab, hence the null hypothesis is accepted.

### Discussion of the Findings

#### Demographic variables of broiler farmers

The study examined the demographic variables of the respondents: age, gender, educational attainment, years of farming experience and the number of broilers reared. The result in table 1 indicated that middle aged farmers dominated the broiler production enterprises in the study area. This implied that people within that age were energetically endowed with a lot of energy required for the labourious nature of poultry rearing. The above report is in line with the findings of Ugwumba and Muojekwu (2012) who reported in their work that 72% of broiler farmers were within the 50 years of age and were psychologically prepared to handle the associated risk challenges such as credit misuse, diseases, fire outbreak, and burglary. Male farmers equally dominated the broiler poultry industry and also possessed the needed energy to run the business. It also provided them with income and employment. This report, however is not in line with the findings of Brorhlt and Odgaard (1999) that poultry keeping is the skill of housewives. Majority of the farmers possessed SSCE/GCE and FSLC indicating that most of them could access market trends and information to improve their business.

The result in table 1 further shows that the higher the number of broiler reared, the fewer the number of respondents. This could be attributed to the fact that broiler poultry business is capital intensive which invariably limits the number of chickens reared at a particular time. The least number of the farmers have been in the broiler poultry enterprise for between 1-5years. This implies that broiler production is not actually all-comers affair. It requires a lot of time, energy, capital, good management, commitment and perseverance to remain afloat in the business. This explains why majority of the broiler farmers have been in the business for a longer period of time.

### **Reasons for rearing broilers by the respondents**

The results (table 2) revealed that majority of the respondents embarked on broiler production mainly for income generation, employment, as source of meat and as insurance against crop failure. The high level of unemployment and the associated joblessness has driven many into finding alternative source of income. Poultry production, though capital intensive, can be started on a small scale and has been most explored source of employment by many. Most Nigerian farmers are very poor (Mba, 2008) and have very low income from which they save very little or nothing. The above assertion is supported by Simonyan *et al* (2008) that agriculture constitute a vital part of the Nigerian economy and contributes immensely to employment generation, provides raw material for agro-allied industries and ensures food security.

### **Management system adopted by farmers**

The major management systems adopted by farmers (table 3) in the study were intensive and semi –intensive systems. The respondents who reared their broilers on free range were very few and had also few number of broilers. Intensive system of poultry rearing is one of the most practiced methods of keeping broiler poultry in Nigeria. This system simply means that the broilers are restricted within a house called pens, water and feed provided throughout the period of production.

Even though the system is cost intensive, it affords the farmers the opportunity to control feeding and watering, which is usually supplied *ad libitum*. Disease outbreak is controlled, production records are kept and the chickens are protected from thieves and predators among other

advantages. Some of the intensive farming techniques have been borne out of an economic imperative and 74% of the worlds poultry meat and 68% of eggs are produced in ways that are described as intensive (<https://en.wikipedia.org/wiki/poultry-farming>).

### **Challenges confronting broiler farmers**

Broiler poultry farmers in the study area were seriously hindered by all the listed possible challenges: high cost of feed, poor quality feed, high cost of day-old chicks, high cost of drugs and vaccines, high mortality rate etc, both in the rural and urban areas. This finding is in line with the report of Ugwumba and Okeke (2012) and Nwambe (2022). All these factors impacts negatively on the farmers output and profit made. High cost of drugs and vaccines worsened by lack of veterinary personnels invariably, results to the high morality of broilers recorded by the farmers. Regular vaccination of chickens controls mortality and the outbreak of diseases. Poor quality and high cost of feed and day-old chicks, constitute the major factors influencing output in poultry production (Ugwumba and Okeke, 2012) (table 4). The Null significant difference between the contributions of the management systems on the benefits of the enterprise as presented in HO<sub>1</sub> table 5, was rejected. Also the table 6, HO<sub>2</sub> accepted the hypothesis tested as true, hence, there is no significant difference in the responses of the farmers.

### **Educational implications of the Study**

The results arising from the study has a far reaching implications on the parts of intended broiler farmers in the state, the government, students, educationists and the general public if we are to boost poultry production in Ebonyi State and Nigeria at large. The teaming able bodied men and women who are jobless can engage in the business of broiler production since it has many advantages as exposed in this study. Middle aged farmers dominated the poultry business which implies that the youths are not involved enough. It is possible and gainful for the youths to be self employed in the business of boiler poultry production instead of waiting for government employment that is not forthcoming. That, if done, will reduce the pressure occasioned by joblessness in the labour market.

### **Recommendations**

The following are recommended based on the findings of the study:

1. The government should, as a matter of urgency, assist the farmers to tackle the identified challenges confronting them. This will go a long way in boosting broiler production and encourage the jobless interested person to go into the business. It will also help reduce the pressure in the labour market and make them employers of labour and boost the economy of the country.
2. There should be increased awareness creation on the findings of the study as it will be most beneficial to the inexperienced farmers and intended farmers.
3. The Government should create a system of checking the quality of feed and drugs sold to the farmers both at the State and Federal level.
4. It will be most helpful if the small and medium scale farmers get government grants directly instead of the bureaucratic process that takes away grants from the real farmers.

### **Suggestion for further study**

Further studies should be carried out on ways to tackle the challenges faced by broiler farmers in the study area in particular and Nigeria at large.

### **Summary**

The results of the study revealed that many people are involved in the business of broiler poultry farming in the study area. Majority of the respondents are within the middle age bracket. It was also discovered that more males than females rear broilers in Ebonyi State. A good number of the farmers possessed SSCE /GCE which invariably helps them to understand the business trend. The respondents that rear larger number of broilers were fewer in number. The farmers who are older in the business of broiler rearing were more in number than the new entrants. The respondents also agreed that they benefited largely from the broiler production business by being self employed, income generation, and as source of meat among others. The intensive system of management was practiced by majority of the farmers though a lot of challenges confronted the farmers such as high cost of feed and day-old chicks, lack of drugs, and unavailability of

veterinary personnels. The farmers in the rural and urban areas were not spared off the challenges encountered.

## **Conclusion**

Based on the findings of the study, it has been established that the respondents can supply the poultry meat need of the study area if supported by the government so as to eradicate the challenges confronting the business. The government, schools, research institutes and NGOs should be more involved in promoting the findings of this research and as such make the information available to the general public. This if done, will encourage more people to engage in broiler production.

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