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Research Article

Assessment of the Challenges Faced by Small-Scale Poultry Farmers in Idemili North Local Government Area of Anambra State, Nigeria

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Abstract

This study assessed the challenges faced by small-scale poultry farmers in Idemili North Local Government Area of Anambra State, Nigeria, with a focus on their socioeconomic characteristics, perceived benefits of poultry farming, constraints encountered, and potential solutions. A multistage random sampling technique was employed to select 50 respondents across 4 villages. The findings revealed that the average poultry farmer was 36 years old, predominantly (54.00%) female, the majority (58.00%) were married, and had a primary education. Most respondents had 11 years of experience in poultry farming. The majority (62.00%) belonged to cooperatives, and the majority (60.00%) had access to credit facilities. Poultry farming was largely (58.00%) commercial, with a mean household size of 7 persons. An average contact with an extension agent occurred 7 times per annum, and an average of 118 birds were stocked. An average monthly income of ₦147,848.00 was realized. A greater proportion (34.00%) of cockerels were the most commonly raised birds, and a greater proportion (30.00%) of free-range systems were used in the study area. Key benefits identified included improved diets, meat and egg production, livelihood support, manure generation, and income enhancement. However, serious constraints such as high feed and labour costs, fluctuating market prices, and pest and disease outbreaks were reported. Proposed solutions centred on stabilizing market prices and improving feed quality. The study concludes that poultry farming plays a vital role in rural livelihoods and food security. It recommends government intervention through feed subsidies, market regulation, and enhanced veterinary services to mitigate the impact of pests and diseases.

Keywords

Challenges, Small-Scale, Poultry Farmers, Idemili North Local Government Area, Anambra State, Nigeria

1. Introduction

Nigeria's poultry industry has its roots in the initiative of regional governments from the 1960s, when the Western Regional Government entered into joint pilot poultry production schemes with some foreign partners, notably the Israeli government [1]. The entry of private investors into poultry production in the late 1960s to early 1970s marked the onset of the indigenous commercial poultry industry. It then spread from the west to the eastern region and parts of the northern region, with the west experiencing particularly rapid growth [1].

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The two commonest types of birds raised in Nigeria, either for meat or egg production, are broilers and layers, and they can be raised for self-consumption or business purposes. The act of raising is known as poultry farming. It is the raising of birds for both meat and egg production. Broilers are chickens raised for meat, and their production is the process of rearing broiler birds for meat. Another bird that can be raised is the layer, popularly known as old layers. Layers are chickens raised for egg production.

The meat and egg from poultry are a good source of animal protein, which is essential in the maintenance of body growth and the repair of worn-out tissues, thus making poultry and its products an important dietary food. Chicken meat and eggs provide not only high-quality protein but also important vitamins and minerals.

According to [2], Nigeria's poultry resources consist of about 104,247,960 birds, representing about 48.72 percent of the total livestock production in the country, which indicates the place of the poultry subsector in the livestock industry.

The rearing of birds can be done as an intensive small-scale (dip litter system), large-scale (battery cage system), or extensively in any part of Nigeria. A study by [3] shows that about 14% of the Nigerian population is engaged in poultry production, mostly on subsistence and small or medium-sized farms. However, despite the commerciality of poultry production, the subsistence and the small-scale units are still prevalent all over suburban areas, rural places, and especially in the villages. Although the commercially oriented poultry pens are abundant all over Nigeria with varying modern scientific approaches to the production of poultry, output continues to be inadequate, and prices are increasing beyond the reach of the common man.

Despite the acknowledged importance of poultry production, the industry is still characterized by low production levels due to limited finances for the procurement of basic poultry equipment and materials [1].

A good number of the poultry production in Nigeria under commercial production for meat and eggs is raised under the intensive and semi-intensive systems [4]. Despite this shift, [5] maintained that the output level remains low compared to the input committed, and the poultry products are grossly inadequate because the supply is lower than the demand. The challenges of poultry in Nigeria cannot be overemphasized; these challenges have slowed down the rate of production in the industry. A high rate of disease and pest attack as a major challenge in poultry production was reported by [6]. A lack of technical knowledge was also reported by [6]. [7] reported that most farmers do not have an idea of the farms that hatch the chicks they buy, as they buy from roadside hawkers. [8] report that inadequate poultry extension services are one of the major challenges poultry farmers face. Insufficient access to high-cost veterinary services, hence the maintenance of records helps the farmer to determine the progressive nature of the farm. Besides, it helps in planning and programming future projects in the poultry industry. Most farmers, either due to illiteracy, training, or another reason, cannot keep records. The result is that most extension officers are unable to help them out of their problems due to a lack of information.

However, these farmers face numerous challenges that hinder their productivity and profitability. Common obstacles include high feed costs, inadequate access to veterinary services, limited technical knowledge, and poor infrastructure. Diseases, pest attacks, and fluctuating market prices further exacerbate their struggles. Understanding and addressing these challenges is crucial for enhancing the sustainability and growth of small-scale poultry farming in the region, ultimately improving the livelihoods of those who depend on it. However, few studies have critically examined the challenges faced by small-scale poultry farmers in Anambra State, Nigeria. It is against this backdrop that this study seeks to fill the gap in examining the challenges faced by small-scale poultry farmers in Idemili North Local Government Area of Anambra State, Nigeria.

The broad objective of the study was to assess the challenges faced by small-scale poultry farmers in Idemili North Local Government Area of Anambra State, Nigeria. The specific objectives of the study were to describe the socio-economic characteristics of the respondents in the study area, identify the perceived benefits of poultry farming, identify the constraints militating against poultry farming, and identify the possible solutions to the challenges faced by the respondents in the study area.

2. The Study Area

The study was carried out in the Idemili North Local Government Area of Anambra State, Nigeria. Idemili North Local Government Area is one of the 21 Local Government Areas in Anambra State, Nigeria. Located in the Anambra Central senatorial district, the Local Government headquarters is situated in Ogidi and has ten communities: Abacha, Abatete, Eziowelle, Ideani, Nkpor, Obosi, Ogidi, Oraukwu, Uke, and Umuoji. It has a population of 430,783 people [9]. Idemili North L. G. A. is a centre for trade, and it is home to several markets, including the Uke market and the building materials market. With crops including yams, cassava, cocoyams, and vegetables growing in the region, farming is another significant economic aspect of Idemili North L. G. A. The residents of Idemili North L. G. A. also work in the fields of fishing, blacksmithing, and handicrafts [10].

3. Methodology

The population of the study comprised all the poultry farmers in the Idemili North Local Government Area of Anambra State, Nigeria. A multistage sampling procedure involving simple random sampling techniques was used to select 50 poultry farmers. Table 1 below shows the stages of

sample size selection.

Stage I involved the selection of Idemili North Local Government Area of Anambra State as a case study. Stage II involved the simple random selection of two (2) communities or towns, each from the Local Government Area.

Stage III involved a simple random selection of two (2) villages each from the selected communities or towns to give four (4) villages.

Stage IV involved a simple random selection of 10 to 15 poultry farmers from each of the selected villages, to give a total of 50 respondents for the study.

Table 1. Distribution of sample size according to communities.

LGA	Communities / Towns	Villages	Sampled stratum
Idemili North	Umuoji	Ekwulu	15
	Uke	Urueze	10
		Ogbu	15
		Odida	10
Total			50

Source: Research sample frame
LGA: Local Government Area

3.1. Data Collection

The data for the study were collected from primary sources through the use of a structured interview schedule to elicit information from the respondents. The structured interview schedule was validated by 2 lecturers in the Department of Agricultural Economics and Extension of Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. 2 enumerators were properly trained for the job. The interview schedule was divided into 4 sections. Section 1 was designed to describe the socioeconomic characteristics of the respondents; Section 2 was designed to identify the perceived benefits of poultry farming in the study area; Section 3 was designed to identify the constraints militating against poultry farming, and finally, Section 4 was designed to identify the possible solutions to the challenges faced by the respondents.

3.2. Measurement of Variables

Socio-economic characteristics of the respondents include:

Age: Farmers were asked to give their age in years.

Sex: Farmers were asked to indicate whether they are male or female using a dummy (0=female, 1=male).

Educational level: Farmers were asked to indicate the number of years spent in school and their educational level.

Marital status: Farmers were asked to indicate whether they are single or married using a dummy (0=single, 1=married).

Household size: Farmers were asked to indicate the total number of persons living together under one roof and feeding from the same pot.

Years of poultry farming: Farmers were required to specify the actual number of years they have spent in poultry farming.

Extension Visit: Farmers were asked to indicate how many times extension agents visited.

Membership of Cooperative: Farmers were asked to indicate if they belong to a cooperative using a dummy (0=no, 1=yes).

Sources of credit: Farmers were asked to indicate if they had access to credit facilities using a dummy (0=no, 1=yes).

Number of birds: Farmers were asked to indicate the number of birds in their poultry farm.

Farmers' income: Farmers were asked to indicate how much they make in poultry farming.

Purpose of rearing birds: Farmers were asked to indicate their purpose of rearing birds.

Breed of birds (Cockerels, Broilers, Layers, all of the above): Farmers were asked to indicate the breeds of birds reared.

System of management (Deep litter, Battery cage, Free range, all of the above)*:* Farmers were asked to indicate the system they use.

To identify the perceived benefits of poultry farming in the study area, the respondents were asked to tick yes or no from the list provided: enhanced income, employment creation, improvement of diets, food security, poverty alleviation, source of manure, egg production, meat production, feathers, and source of livelihood. Ranking was used to ascertain the most relevant benefits.

To identify the constraints militating against poultry farming, possible challenges were listed, such as High cost of feed, High cost of vaccines /medications, High cost of day-old chicks, High mortality rate, fluctuating market price, High

cost of labour, Poor access to credit facilities, Inadequate capital, and Pests & Diseases. The respondents were asked to tick. These constraints were measured on a 5-point Likert scale using very great extent (5), great extent (4), some extent (3), not a problem (2), and seriously not a problem (1). These were summed to get a total of 15 and later divided by 5 to get a midpoint of 3.0. This implied that variables with a mean score of < 3.0 were regarded as not serious constraints, while variables with a mean score of ≥ 3.0 were regarded as serious constraints to poultry farming.

To identify the possible solutions to the challenges in poultry farming, the respondents were asked to tick from the listed possible solution: Easy access to credit/loan procurement, Stable market price for sale of egg or broiler, Provision of adequate land/space for poultry production, Provision of adequate training in handling poultry, and Provide quality feed ingredients, using a 5-point Likert scale of strongly agree (5), agree (4), not sure (3), Disagree (2) and strongly disagree (1). A mean threshold of ≥3.0 was regarded as agree, while a mean threshold of < 3.0 was regarded as disagree.

3.3. Data Analysis

The data collected were analyzed using descriptive statistics. Version 23.0 IBM-SPSS analytical tools were used for all the data analysis. Descriptive statistics like frequency, percentage, mean, and standard deviation were used in objectives i, ii, iii, and iv as adopted by [11].

$$the\ \bar{X} = \sum \frac{FX}{n}$$

Where:
$\bar{X}$ = mean
X = variable
n = sample size
F= frequency

4. Results

4.1. Socioeconomic Characteristics of Poultry Farmers

The following socio-economic characteristics were examined: age, sex, level of education, marital status, household size, years of poultry farming, extension visits, cooperative membership, sources of credit, number of birds, farmers' income, purpose of rearing birds, breeds of birds, and system of management.

4.1.1. Age of the Respondents

Findings in Figure 1 show that a greater proportion (32.00%) of respondents' age fell within the age bracket of 30-39 years, 30.00% fell within the age bracket of 20-29 years, and 40-49 years respectively, 6.00% had age of 50 years and above while the remaining 2.00% had age of less than 20 years. The mean age was approximately 36 years.

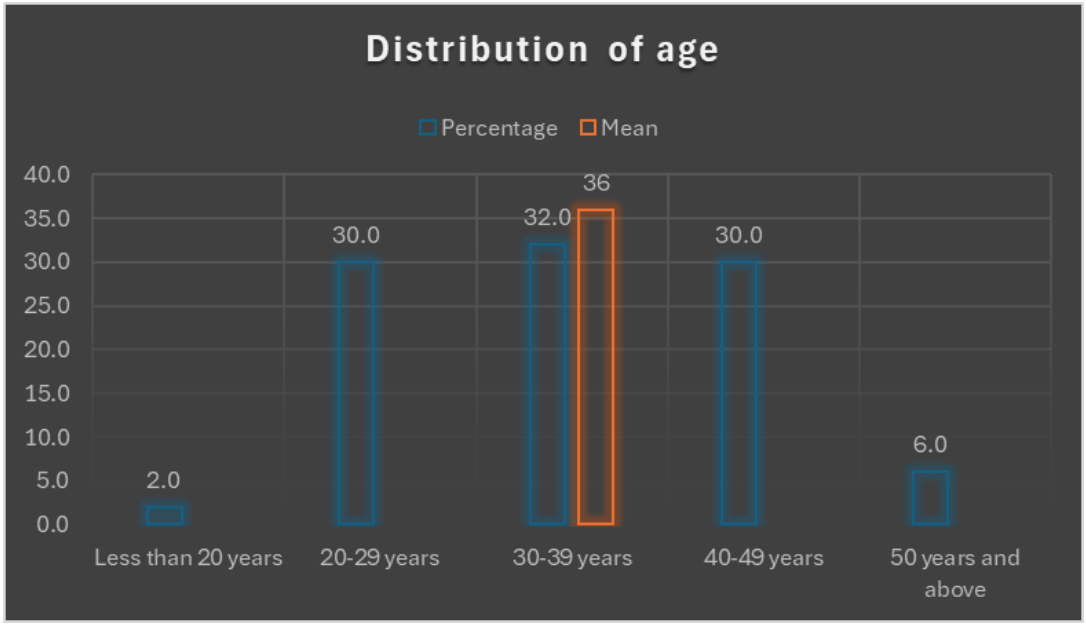

Figure 1. *Distribution of age.*

4.1.2. Sex of the Respondents

The study in Figure 2 shows that the majority (54.00%) of the poultry farmers in the study area were female, while the remaining 46.00% were male.

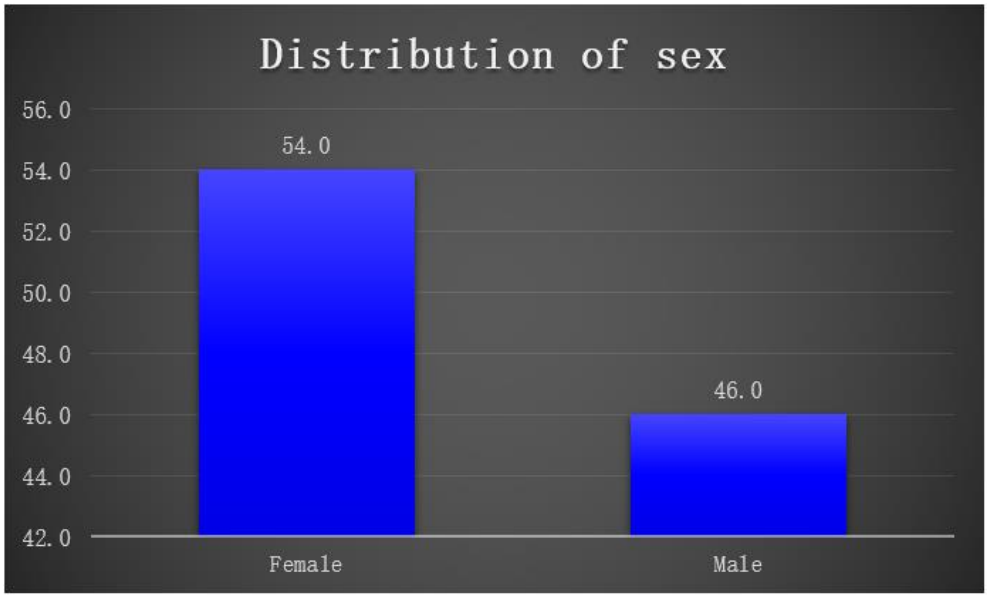

Figure 2. Distribution of sex.

4.1.3. Respondents' Level of Education

Information in Figure 3 shows that the majority (54.00%) of the poultry farmers in the study area had primary education, 42.00% had secondary education, while the remaining 4.00% had tertiary education. The mean score reveals that the respondents had a primary education.

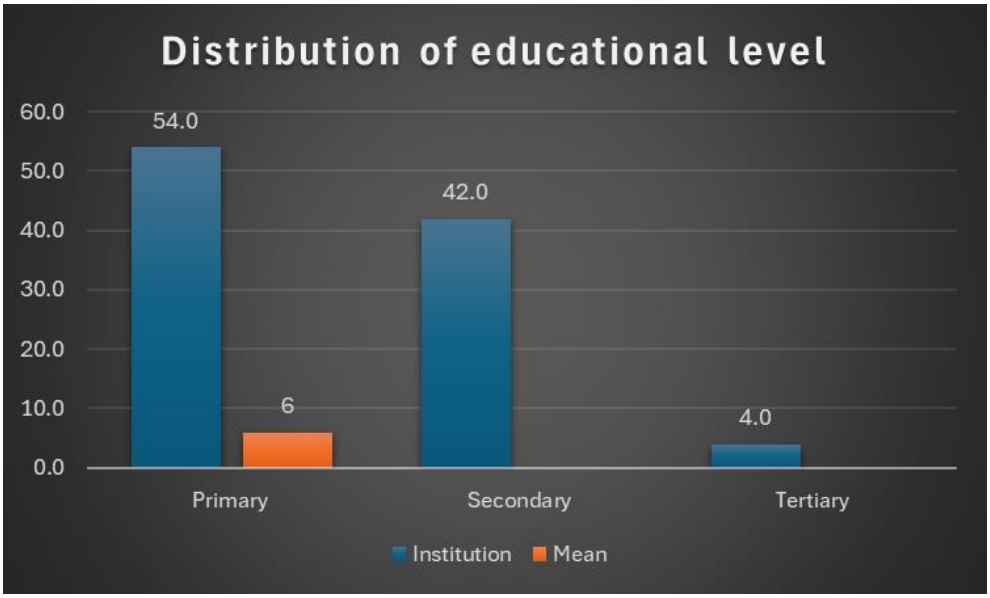

Figure 3. Distribution of educational level.

4.1.4. Marital Status of the Respondents

The study in Figure 4 shows that a majority (58.00%) of the respondents were married, while the remaining (42.00%) were single.

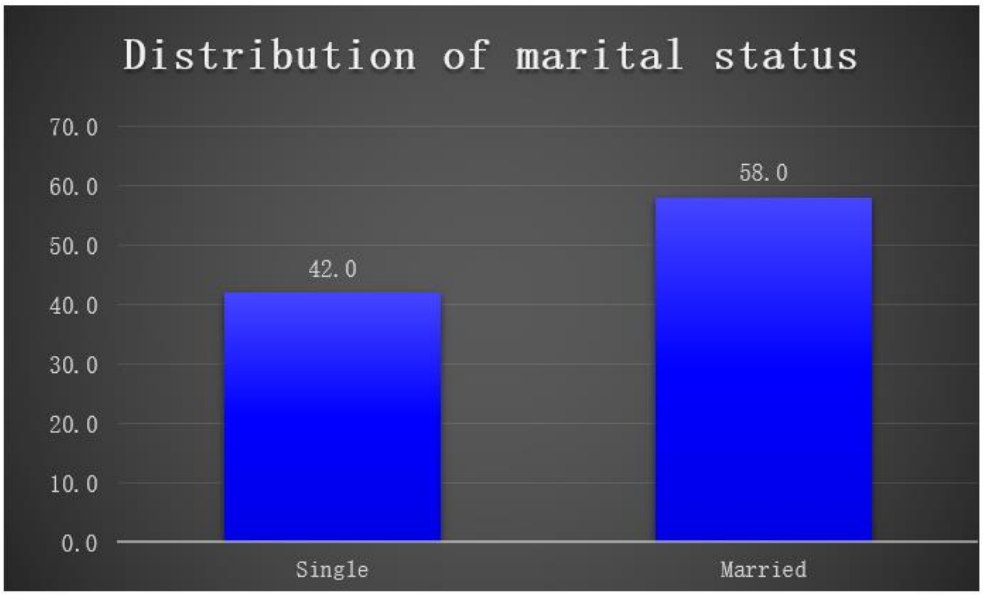

Figure 4. *Distribution of marital status.*

4.1.5. Household Size of the Respondents

Entries in Figure 5 show that a majority (66.00%) of the poultry farmers had a household size of 6-9 persons, 18.00% had a household size of more than 10 persons, while the remaining 16.00% had a household size of less than or equal to 5 persons. The mean score was 7.

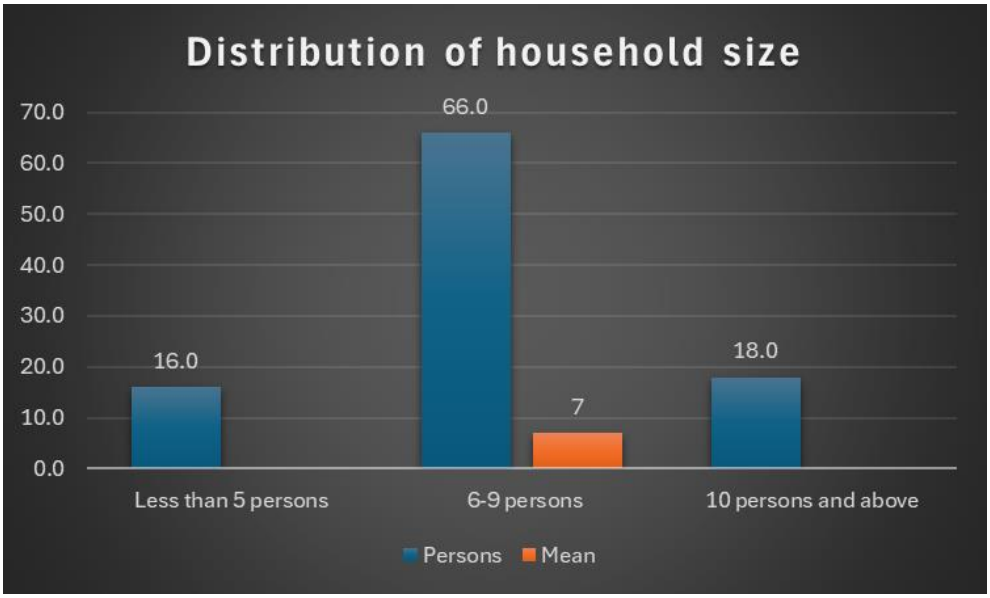

Figure 5. *Distribution of household size.*

4.1.6. Respondents' Years in Poultry Farming

Results in Figure 6 show that a greater proportion (38.00%) of the respondents had 5-9 years, and 10 years or more, respectively, in poultry farming, while the remaining 24.00% had less than 5 years of poultry farming experience. The mean score was 11 years.

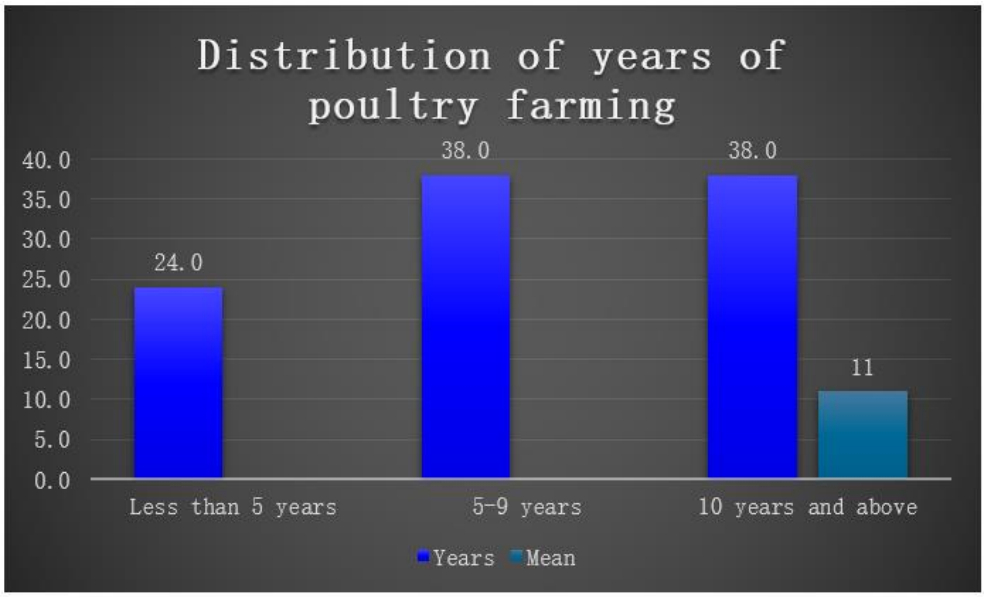

Figure 6. Distribution of years in poultry farming.

4.1.7. Respondents' Number of Extension Visits

Entries in Figure 7 show that a greater proportion (48.00%) of the respondents had 7 times or more contacts per annum with extension agents, 28.00% had 4 times or fewer contacts per annum with extension agents, while 24.00% had between 5-6 times contacts per annum with extension agents. The average contacts per annum with extension agents was 7 times.

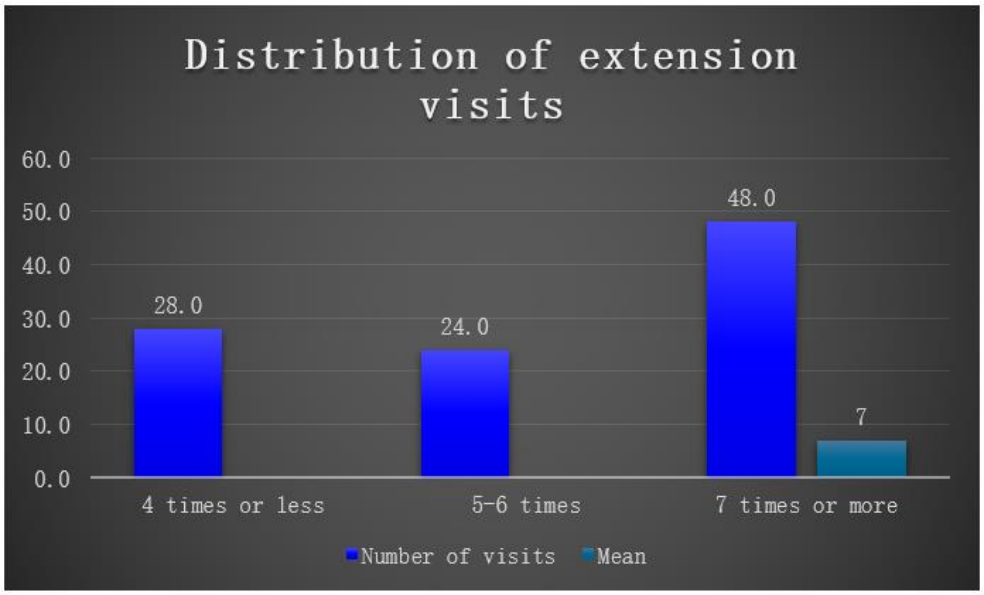

Figure 7. Distribution of the number of extension visits.

4.1.8. Cooperative Membership

The results in Figure 8 show that the majority (62.00%) of the poultry farmers belong to a cooperative society, while the remaining 38.00% do not belong to any cooperative.

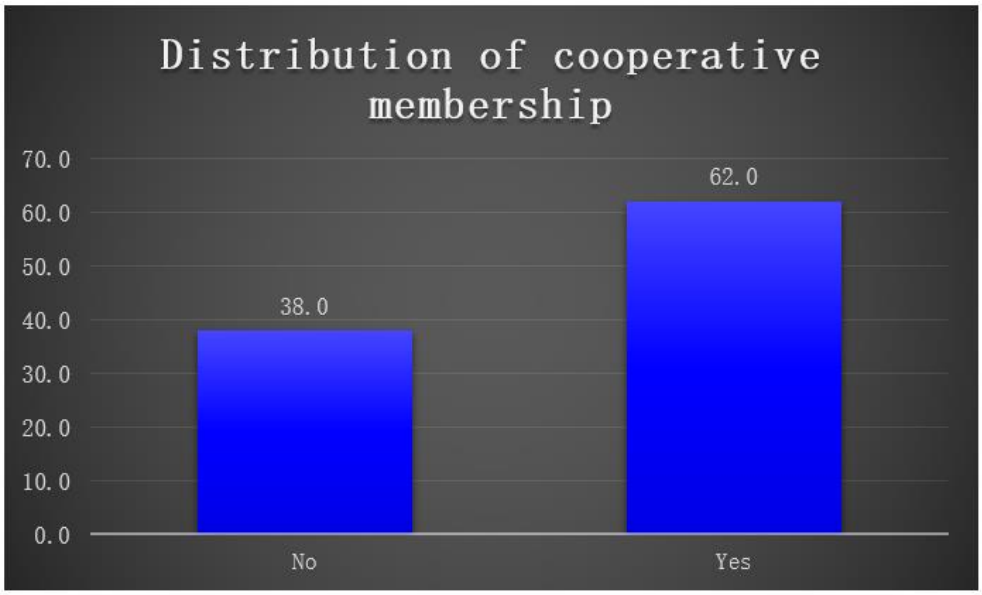

Figure 8. Distribution of cooperative membership.

4.1.9. Respondents' Sources of Credit

Entries in Figure 9 show that the majority (60.00%) of the respondents had access to credit, while the remaining 40.00% had no access to credit facilities.

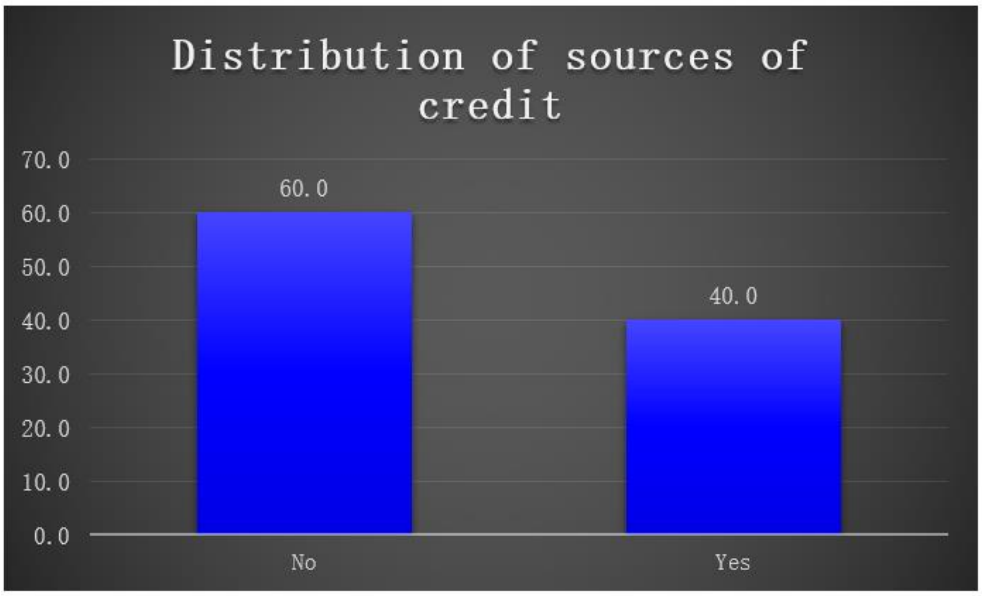

Figure 9. Distribution of sources of credit.

4.1.10. Number of Birds

The study in Figure 10 shows that a majority (96.00%) of the respondents had between 51-199 birds. While the remaining 2.00% had 50 and 200 or more birds. The mean score was 118 birds.

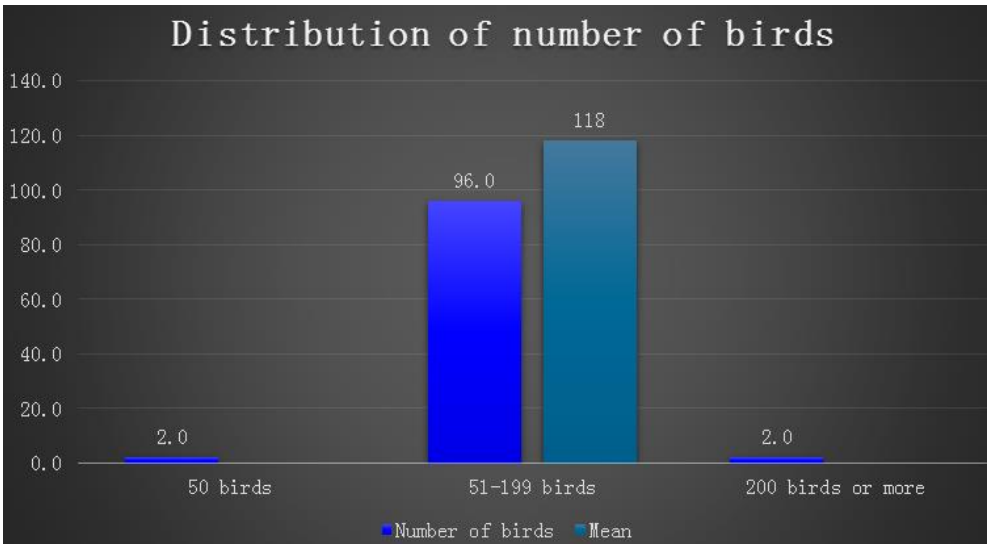

Figure 10. *Distribution of the number of birds.*

(i). Respondents' Farming Income

Entries in Figure 11 show that the majority (58.00%) of the respondents had a monthly income between ₦150,000.00 - ₦199,000.00, 34.00% had a monthly income of more than ₦200,000.00, while the remaining 8.00% had a monthly income between ₦100,000.00 - ₦149,000.00. The average monthly income was ₦147,848.00.

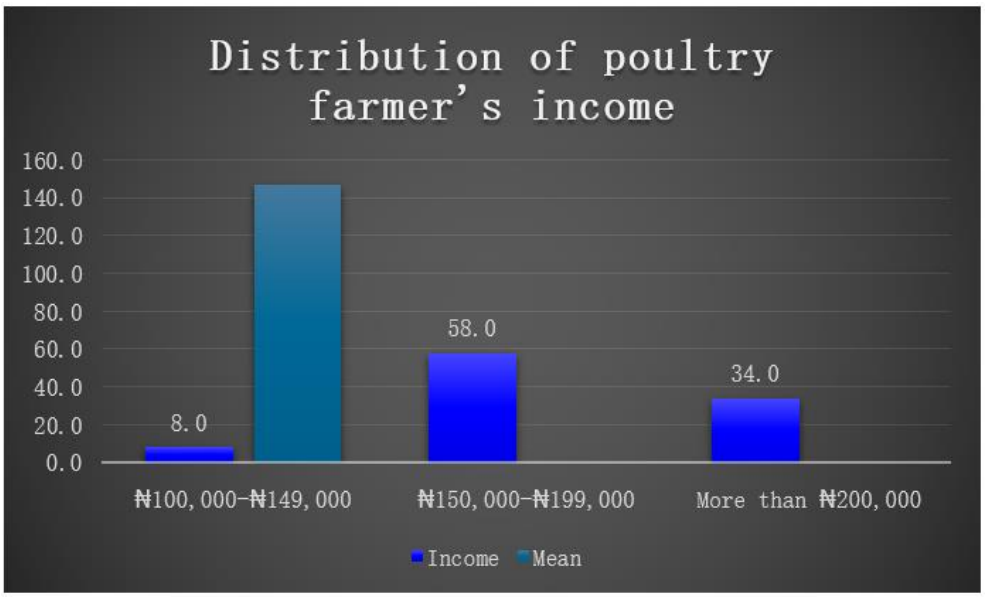

Figure 11. *Distribution of poultry farmers' income.*

(ii). Purpose of Rearing Birds

The results in Figure 12 show that the majority (58.00%) of the respondents reared birds for commercial purposes, 24.00% reared birds for both subsistence and commercial purposes, while the remaining 18.00% reared birds for subsistence purposes.

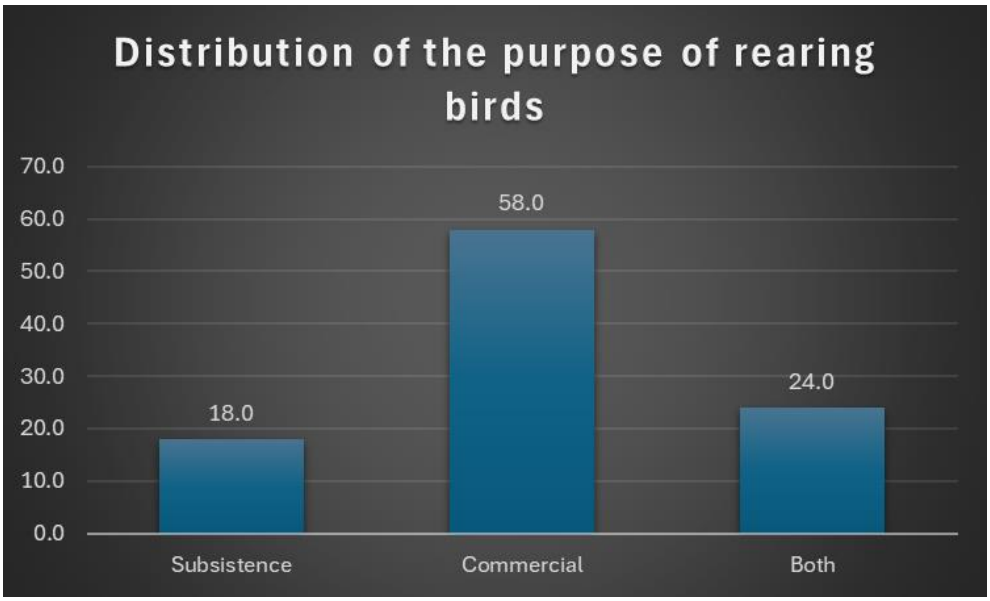

Figure 12. Distribution of the purpose of rearing birds.

(iii). Breeds of Birds

The study in Figure 13 shows that a greater proportion (34.00%) of the poultry farmers reared Cockerels, 30.00% reared all the breeds, while the remaining 18.0% reared Broiler and Layers respectively.

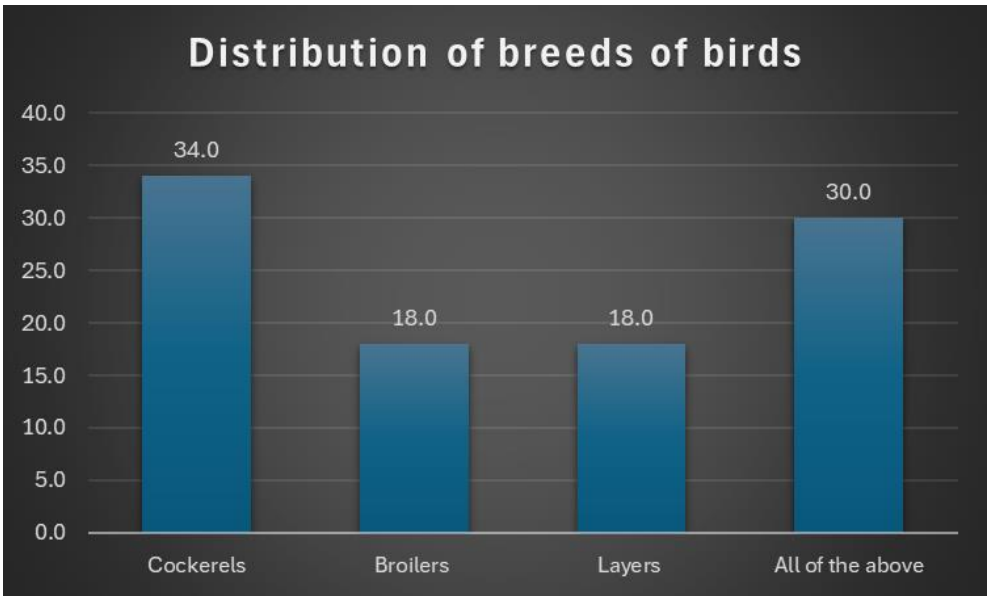

Figure 13. Distribution of breeds of birds.

(iv). Systems of Management

Entries in Figure 14 show that a greater proportion (30.00%) used the free range and all other systems, respectively, 22.00% used the battery cage system, while the remaining 18.00% used the deep litter system.

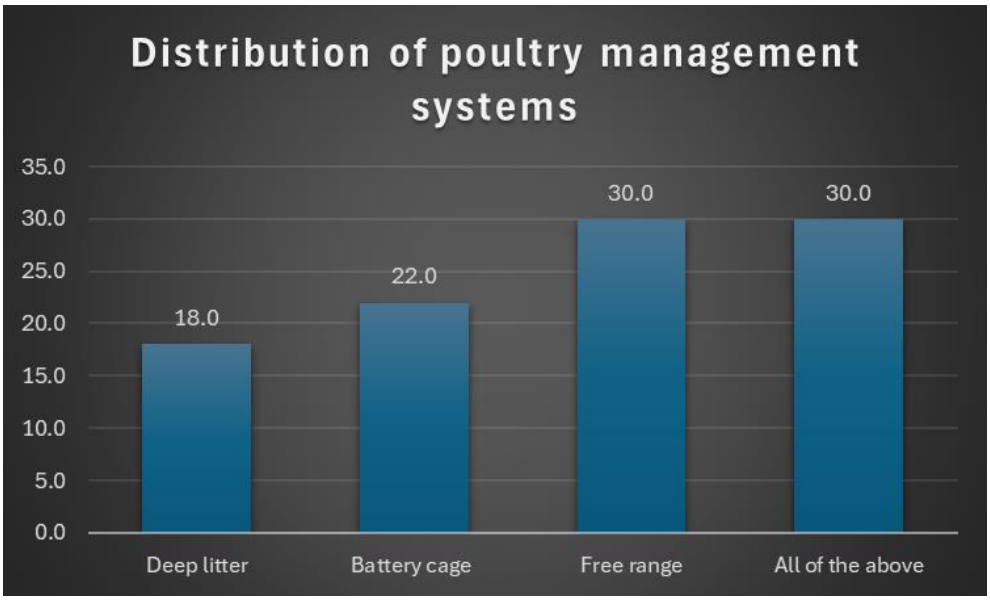

Figure 14. *Distribution of poultry management systems.*

4.2. Perceived Benefits of Poultry Farming

The study in Figure 15 shows the perceived benefits of poultry farming. The findings revealed that the first six benefits were improved diets (66.00%), meat production (62.00%), source of livelihood (54.00%), source of manure (50.00%), egg production (46.00%), and enhanced income (46.00%).

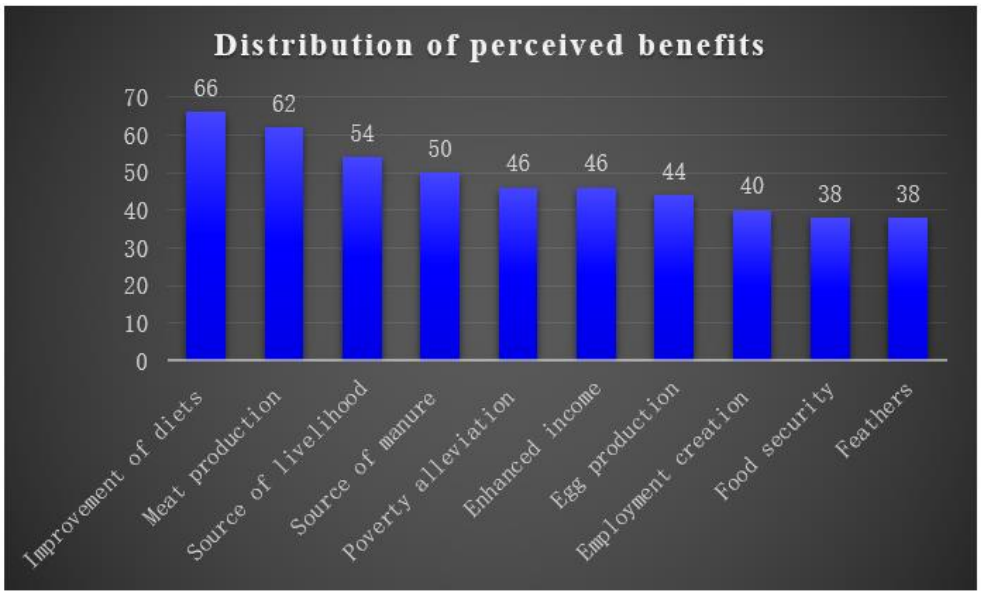

Figure 15. *Distribution of perceived benefits of poultry farming.*

4.3. Constraints to Poultry Farming

Entries in Figure 16 show the constraints to poultry farming. The findings revealed that the high cost of feed, with a mean score ($\bar{x}$ = 3.34), fluctuating market price with a mean score ($\bar{x}$ = 3.08), high cost of labour with a mean score ($\bar{x}$ = 3.28), and pests and diseases with a mean score ($\bar{x}$ = 3.32) were serious problems constraining poultry farming in the study area.

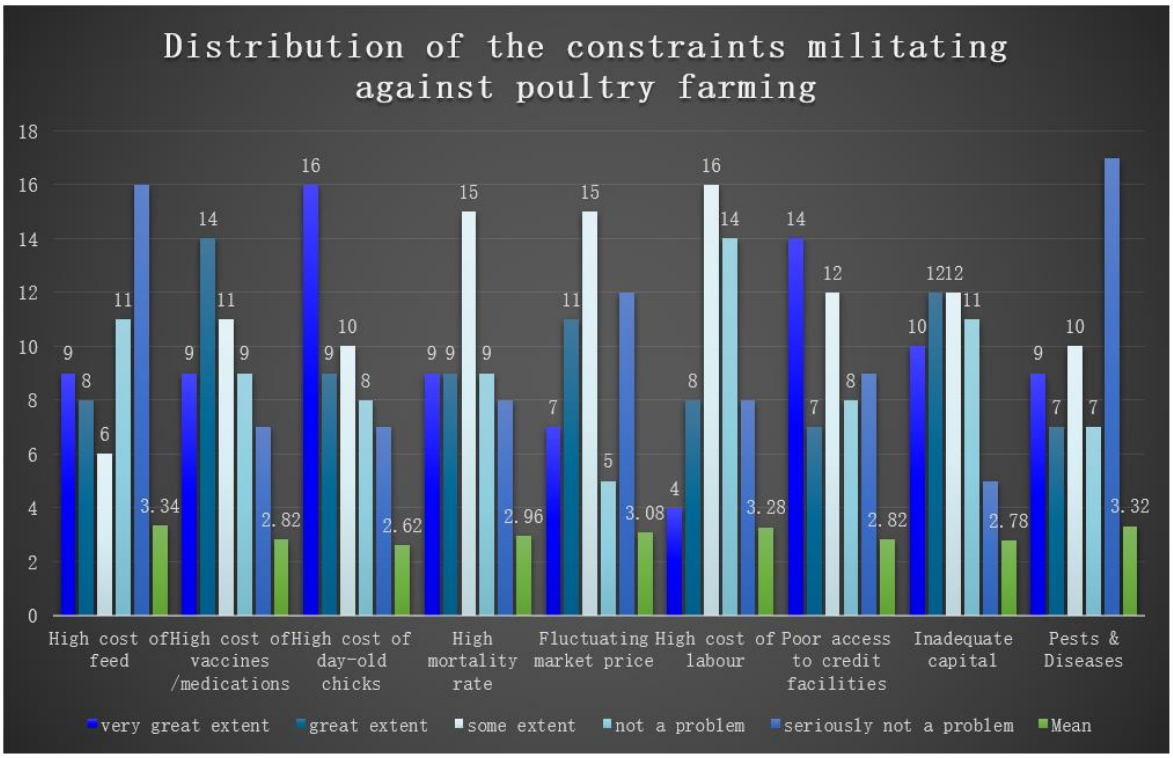

Figure 16. Distribution of the constraints militating against poultry farming.

4.4. Possible Solutions to the Constraints in Poultry Farming

The study in Figure 17 shows the possible solutions to the constraints in poultry farming. The result revealed that the respondents agreed that a stable market price for the sale of eggs or broilers, with a mean score ($\bar{x}$ = 3.16) and quality feed ingredients with a mean score ($\bar{x}$ = 3.22) were the possible solutions to the constraints militating against poultry farming.

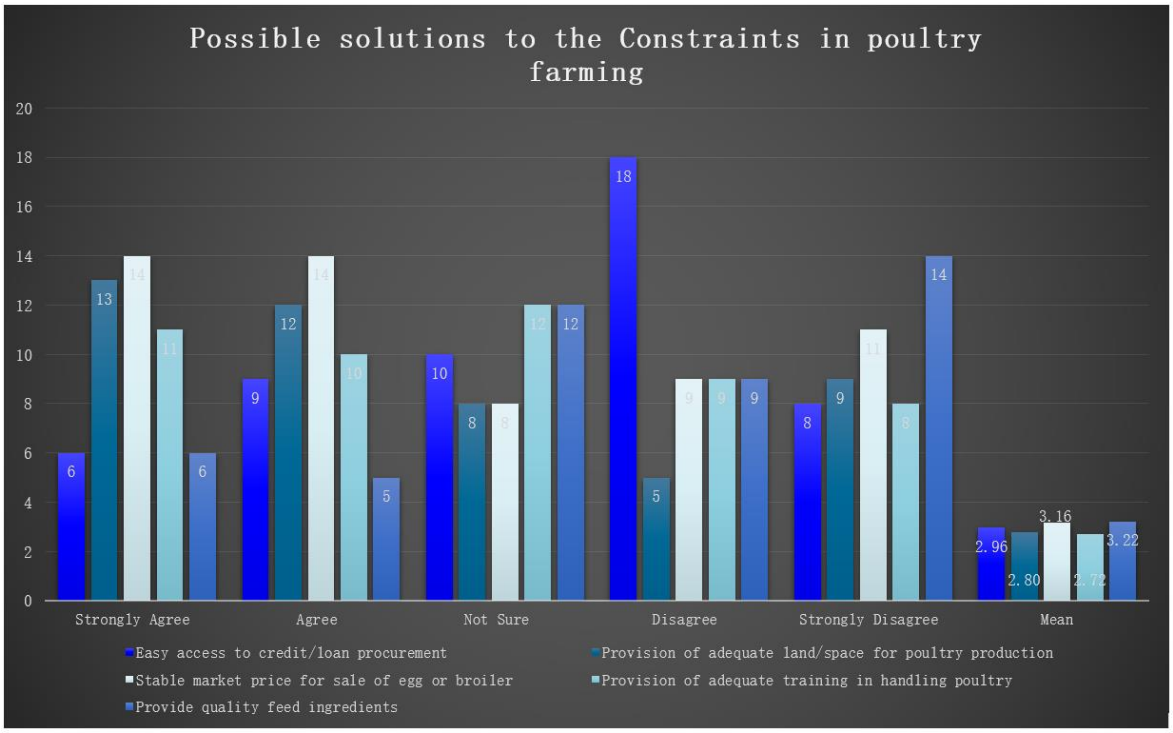

Figure 17. Possible solutions to the constraints in poultry farming.

5. Discussion

5.1. Respondents' Age

The mean age was approximately 36 years. This means that most of the poultry farmers in the study area are at their active age. This corroborates [12] that most (62.5%) of the respondents are younger farmers, unlike those who are above 60 years, who represent 1.7% of the respondents in this study.

5.1.1. Sex of Respondents'

The majority (54.00%) of the poultry farmers in the study area were female. These findings disagree with the study of [1], which found that 73.80% of the respondents were male, while 26.20% were female, meaning that poultry production in the study area was dominated by men.

5.1.2. Educational Level of the Respondents'

The mean score for educational level reveals that the respondents had a primary education. This implies that the poultry farmers had a formal education and are not illiterate. These findings are in line with the study of [13] that most (77.5%) of the respondents had higher education, which could probably have encouraged them to choose poultry farming, regardless of the technicality involved in it.

5.1.3. Marital Status of the Respondents'

A majority (58.00%) of the respondents were married. This implies that the respondents in the study area were married. The findings agree with those of [13] that the majority (63.3%) of poultry farmers in the study area were married.

5.1.4. Household Size of the Respondents'

The mean score of 7 persons implies that the respondents had adequate manpower needed in the poultry farming. These findings align with those of [13] that respondents with a family size above 2 people would have more hands to work in their poultry.

5.1.5. Years of Poultry Farming

The mean score of 11 years in poultry farming indicates that the respondents had adequate years of experience in poultry farming. This disagrees with the study of [14], which states that a majority, 65% of the respondents, had less than 5 years' experience.

5.1.6. Extension Visits

The average contacts per annum with extension agents were 7 times, which is an adequate visit. This corroborates [15], who noted that the majority (52.11%) of the respondents were visited by extension personnel.

5.1.7. Cooperative Membership

The majority (62.00%) of the poultry farmers belong to a cooperative society. The indication is that the respondents engaged themselves with the activities of cooperative societies to enhance their poultry farming. These findings agree with the findings of [15] that (57.89%) of the respondents belong to associations and cooperative societies.

5.1.8. Access to Credit

The majority (60.00%) of the respondents had access to credit. This enabled poultry farming in the study area to be well-financed. This study disagrees with the study of [14], who noted that most small-scale poultry farmers have limited finances to raise a larger number of flocks.

5.1.9. Numbers of Birds

The mean score of 118 birds implies that the poultry farmers had a reasonable number of birds for poultry farming. The findings agree with those of [15] that a greater proportion (47.90%) of the respondents have flock sizes ranging from 100-300.

(i). Monthly Income of the Respondents'

The average monthly income of ₦147,848.00 implies that poultry farmers made a reasonable monthly income. The findings are in line with the findings of [1] that the respondents had the maximum income benefit. These findings disagree with the findings of [16], who noted that only 2.5 percent of the respondents generate above 60,000 naira per month from their poultry business.

(ii). Purpose of Poultry Farming

The majority (58.00%) of the respondents reared birds for commercial purposes. This corroborates [17], who noted that most birds were raised mostly for sale (44.6%).

(iii). Breeds of Birds

A greater proportion (34.00%) of the poultry farmers reared Cockerels. The implication is that most of the respondents reared Cockerels because of their nature and characteristics, which enable them to be easily raised. This finding contradicts the findings of [17], who noted that most of the poultry farmers reared a mixture of broilers, cockerels, and layers.

(iv). Systems of Management

A greater proportion (30.00%) used the free range, and all other systems, respectively. This implies that the birds were allowed to move freely around the premises of the farm. This study agrees with that of [17], who noted that a greater proportion (41.3%) of the respondents used the free range to raise or rear their chickens in the study area.

5.2. Perceived Benefits of Poultry Farming

The first six benefits were improved diets (66.00%), meat production (62.00%), source of livelihood (54.00%), source of manure (50.00%), egg production (46.00%), and enhanced income (46.00%). This implies that most of the respondents recorded improved diets as the main benefits derived from poultry farming. This findings is consistent with that of [12], that majority (50.0%) of the respondents strongly agree that an increase in number of layers increases profit/income, 38.3% strongly agree that an increase in number of layers increases egg production, 19.2% strongly agree that poultry meat production increases with the increased number of layers reared, 21.7% strongly agree that there is more supply of poultry droppings for manure with the increased number of layers reared which can boost organic agriculture, 17.5% strongly agree that well-being of the farmer and his family improves when the number of layers increases, 10.8% strongly agreed that an increase in the number of layers reared will improve the protein consumption rate in the economy.

5.3. Constraints to Poultry Farming

High cost of feed, with a mean score ($\bar{x}$ = 3.34), fluctuating market price with a mean score ($\bar{x}$ = 3.08), high cost of labour with a mean score ($\bar{x}$ = 3.28), and pests and diseases with a mean score ($\bar{x}$ = 3.32) were serious problems constraining poultry farming in the study area. These findings agree with the findings of [18] that poor marketing outlets ($\bar{x}$ = 2.68), fluctuating market price ($\bar{x}$ = 2.67), high cost of labour ($\bar{x}$ = 2.65), and poor access to credit ($\bar{x}$ = 2.50) are the challenges faced by farmers. Additionally, the study aligns with [19], who note that broiler production is faced with a myriad of problems.

5.4. Possible Solutions to the Constraints in Poultry Farming

The respondents agreed that a stable market price for the sale of eggs or broiler, with a mean score ($\bar{x}$ = 3.16), and quality feed ingredients with a mean score ($\bar{x}$ = 3.22) were the possible solutions to the constraints militating against poultry farming. The findings align with [12], who listed possible solutions to the constraints in poultry farming as a provision of easy access to loan procurement, adequate capital and resources to expand the scale of operations, stable market price for the sale of eggs, and provision of adequate land and space for poultry farming. Furthermore, adequate training should be provided to educate and enlighten farmers, and the provision of quality ingredients for poultry feed will offer solutions to the constraints faced by farmers. So, if there is more supply of the quality ingredient for formulation and compounding, then the constraint of the high cost of feed may be reduced, and the respondents will be able to buy either more of the ingredient for feed compounding or buy more feed to nourish their birds.

6. Conclusion

This study provides a comprehensive insight into the prospects of poultry farming, constraints that militate against poultry farming, and possible mitigations.

Abbreviations

LGA Local Government Area

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Author Contributions

Paul Chidubem Okoye: Conceptualization, Data curation, Methodology, Writing – original draft

Victor Uzochukwu Uchemba: Formal Analysis, Investigation, Resources, Supervision, Validation, Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

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