

Full Length Research Paper

The study of entrepreneurial skills required by small scale poultry farmers in Orumba North and South Local Government Area of Anambra State, Nigeria

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The study investigated entrepreneurial skills required by small-scale poultry farmers in Orumba North and South Local Government Area of Anambra State. Four research questions were developed and hypothesis tested at 0.05 level of significance. Twenty nine (29) structured questionnaire items were developed and face validated by three experts. The reliability of the questionnaire was determined using Cronbach Alpha statistics and Alpha co-efficient of 0.78 was obtained. The questionnaire was administered on 86 respondents made up of 58 registered small scale poultry farmers and 28 extension agents. The entire 86 copies administered were retrieved and analyzed using simple percentages and frequencies. In addition, Chi-Square and One-Way Analysis of Variance (ANOVA) statistical tools were adopted to test the validity or otherwise of the null hypotheses against the alternative hypotheses. The findings of the study revealed that all the identified twenty nine (29) entrepreneurial skill items in poultry production were required by small-scale poultry farmers for increase productivity. It was therefore recommended that the identified skills be packaged and used to train all poultry farmers in the state for sustainable production of poultry products. Also effort should be made by government to establish and equip skill acquisition and training centers to enhance the effectiveness of small scale poultry farmers.

Key words: Entrepreneurship, skill, small-scale farmers, poultry production.

INTRODUCTION

Poultry refers to the birds which are domesticated to man for egg or meat production. It includes such birds like chicken, ducks, geese, turkeys, pigeon, guinea fowl, quail etc. The poultry sector constitute more than 57% of the total livestock production in Nigeria and many people have gone into poultry production either producing egg or meat or both (Anyanwu, 2005). Poultry production involves

the breeding, tending and/or raising of poultry to produce eggs and meat. A country's economic development is normally accompanied by improvement in its food supply and the gradual elimination of dietary deficiencies (WHO/FAO, 2003; Thornton, 2010). As in most developing countries, the main poultry production systems in Nigeria can generally be differentiated into two groups, namely,

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subsistent and commercial. The commercial system can be further classified into small, medium and large scale with modern technology. Small, medium and large scale vary in size from 10000-20,000, 20,001-50,000 and >50,000 birds, respectively. Under the subsistence production, birds are mostly of indigenous breeds that roam the homestead and scavenge for feed freely. In the commercial production system exotic and high producing birds are kept under care and given complete feeds (Obi, 2003). According to Shaner (1982), the term small scale refers to those operations in which the farmers frequently have difficulty obtaining sufficient inputs to allow use of the technology available to medium and large scale farmers.

An entrepreneur must possess the required entrepreneurship skills. Agomuo (2002) submitted that entrepreneurship is a process of bringing together creative and innovative ideas, combining them with management and organization skills in order to combine people, money, and resources to meet an identified need and thereby create wealth. Entrepreneurial skills is the ability of an individual to exploit an idea and create an enterprise not only for personal gain but also for social and developmental gain (Olagunju, 2004). Small-scale poultry farmers need a broad array of entrepreneurial skills to succeed in today's market. Based on this, they must possess essential entrepreneurial skills that will increase their efficiency and effectiveness in knowledge delivery and management of resources in the poultry farm environment. Entrepreneurial skills in poultry production are a powerful means of addressing relatively low production and enhance innovation in poultry enterprise (World Bank, 2007). It provides new inputs, expertise, and services needed for production; expands employment and entrepreneurial opportunities in rural and urban areas and can contribute to the growth of small-scale enterprises (OECD, 2007). They must possess basic skills necessary to enable them function effectively and thereby increase the quantity and quality of their products. Entrepreneurial skills in this study are the ability to manipulate input resources efficiently within particular enterprise to achieve the production goals.

There are a number of qualities and skills poultry farmers need to have. Mohammad and Fatholah (2011) in their study on analyzing farm management skills in poultry production enterprises in Iran identified management skills required by poultry operators to include accountancy and financial management skills, marketing skills, information skills, decision-making skills, risk oriented skills, communicative skills and technical skills. Also Tim-Ashama conducted a study on entrepreneurial skill required by farmers in broiler brood and sale identified management, feeding and medication, record keeping and marketing as necessary skills required by farmers in boiler brood and sale. In the context of this study breeding, feeding, accounting and disease management skills required by poultry farmers

will be discussed.

Poultry breeding is the skillful practice of improving poultry by proper mating and selection. It is the controlled propagation of poultry which involves the number of individuals in a population that are allowed to be involved in reproduction during that generation (Kekeocha, 2006). Developing skills in breeding techniques will increase the productivity of eggs and meat and reduce mortality of chicks and growers. Entrepreneurial skills in breeding, husbandry, and management are needed to increase the efficiency in poultry production, which will lead to lower production costs (Adene and Oguntade, 2006). However, the nutrition of poultry has to do with feeds and feeding which include all the processes whereby the feed nutrients and oxygen are presented to be utilized by the cells of the birds and the resulted waste product eliminated (Panda, 2002). A number of studies have shown that feed costs constitute one of the highest variable costs in the poultry production process (Esiobu, 2014; Nmadu, 2014; Ohajiana, 2013; Tijjani, 2012). Also poultry disease is the departure of the birds from the state of good health in which all the body physiological parameters are not performing in perfect normal condition (Kekeocha, 2006). Pest and parasites affect poultry adversely, they retard growth and affects feed efficiency and utilization, leaving the birds stunted and emaciated. The costs of medication and vaccination and of feed constitute substantial input costs in production (Esiobu, 2014). Accounting on its part is of great importance to the development of small and medium scale enterprises, especially in small scale poultry farming. It is the core academic discipline that aids the entrepreneurial drive given the popular opinion that it is the language of business. Supporting the above view, Fijio and Obi (2012), Akande (2011) assert that entrepreneurs with basic accounting knowledge and other entrepreneurial skills stand better chances of becoming self-reliant and attain business success. Business is cyclical, and surviving economic peaks and valleys depends on application of proper accounting skills and financial planning. He is in a better position to understand liquidity needs of his business, forecast, budget, reviews and above all knows his key performance indicators (KPIs).

It is the anticipation of the federal government of Nigeria and the society that farmers who are engaged in poultry production be able to demonstrate practical skills in animal production for sustainable production. From this requirement, the extension agents in the study area is believed to have thought to poultry farmers all the necessary skills required for a successful enterprise or firm. However, the researchers' observation and interaction with some of the poultry farmers revealed that most of the farmers who are successful in the enterprise do not possess the required skills that could make them entrepreneur in poultry production thereby incurring more losses as a result moves out of the business. It is the

researcher's view that if these skills in poultry production are identified and taught to the farmers by the extension agents it could encourage them to go into poultry production either as entrepreneurs or employed by other entrepreneurs in poultry production enterprise. Entrepreneurial skills in poultry production had not reach the development target, because of reasons such as low production productivity, weakness in management, inefficiency of enterprises and practicing of traditional production methods (Mirakzadeh et al., 2010). Good management practices are not currently in widespread use in poultry production (Nmadu, 2014; Ameji, 2012). In order for farm manager to act with the maximum efficiency to reach to an end, they need entrepreneurial skills. These skills help the farmers for access to income possible levels about what thing must be produce, in which part of farm, by what method, when and how much, take informed decision (AL-Rimawi, 2006). Unfortunately, many of our entrepreneurs fail to succeed because of neglect of entrepreneurial skills. Therefore it's paramount to improve the entrepreneurial skills of small-scale poultry farmers. Hence, the decision to undertake this study on "Entrepreneurial skills required by small scale poultry farmers in Orumba North and South Local Government Area of Anambra State Nigeria"

Objectives of the study

The purpose of this study was to determine the effect of entrepreneurial skill of small-scale poultry farmers on sustainable productivity in small scale poultry farming in Orumba North and South of Anambra State.

Specifically the study sought to determine the effect of:

- i. Breeding skills on enhancing sustainable productivity in small scale poultry farming.
- ii. Feeding skills on enhancing sustainable productivity in small scale poultry farming.
- iii. Accounting skills on enhancing sustainable productivity in small scale poultry farming.
- iv. Disease management skills on enhancing sustainable productivity in small scale poultry farming.

Statement of hypotheses

H₀₁: Breeding skills do not significantly enhance sustainable productivity in small scale poultry farming in Orumba North and South of Anambra State.

H₀₂: Feeding skills do not significantly enhance sustainable productivity in small scale poultry farming in Orumba North and South of Anambra State.

H₀₃: Accounting skill does not significantly enhance sustainable productivity in small scale poultry farming in Orumba North and South of Anambra State.

H₀₄: Disease management skills do not significantly

enhance sustainable productivity in small scale poultry farming in Orumba North and South of Anambra State.

METHODOLOGY

Four research questions were developed to guide the study. Survey research design was used for the study. Survey research design in the opinion of Olaitan et al. (2000) is the plan, structure and strategy that the investigator wants to adopt in order to obtain solution to research problems using questionnaire in collecting, analyzing and interpreting the data. It is a very valuable tool for assessing opinions and trends from representative group of the population. The study was carried out in Orumba North and South of Anambra state. The population for the study was 86 made up of 58 registered small scale poultry farmers and 28 extension agents. . The instrument used for data collection was a 29 questionnaire item. The questionnaire items had a 5-point response scale of very high extent (VHE), high extent (HE), indifferent (IND), low extent (LE) and very low extent (VLE) with a corresponding weight of 5, 4,3,2 and 1 respectively. The instrument was face validated by three university lecturers; two from department of Animal Science, one from department of Vocational Teacher Education, all from University of Nigeria Nsukka. The suggestions by the validators were used to improve the final draft of the questionnaire. The entire 86 copies administered were retrieved and analyzed using simple percentages and frequencies. In addition, chi-square and one-way analysis of variance (ANOVA) statistical tools was adopted to test the validity or otherwise of the null hypotheses against the alternative hypotheses. In addition, five percent (5%) level of significance shall be used in the research work at calculated degree of freedom.

Chi-Square is given by:

$$\chi^2 = \sum_{i=1}^n \left(\frac{(O - E)^2}{E} \right)$$

Where 'O' = observed frequency of any value; χ^2 = Chi-Square
 $\frac{\text{Total Row} \times \text{Total Column}}{\text{Grand Total}}$

'E' = Expected frequency given by:

Degree of freedom (df) is given by: (Row -1) x (Column - 1).

Decision Rule:

1. If calculated $\chi^2 >$ tabulated χ^2 at a calculated degree of freedom, reject H₀.
2. If calculated significant level <5%, reject H₀. Otherwise accept H₀.

RESULTS

Table 1 showed the socio-economic characteristics of the poultry farmers. The males and females constitute 70 and 30% of the small scale poultry farmers respectively. Further, 23.3, 58.1 and 18.6% of the poultry farmers possessed a maximum of primary, secondary and tertiary education respectively. Also 23.3, 40.7, 26.7 and 9.3% of the poultry farmers possessed various years of experience in poultry production. The socio-economic results showed a significant involvement of both sexes in the business. Also from the result, it can be inferred that few small scale poultry farmers had tertiary education

Table 1. Distribution of respondents by socio-economic characteristics (n = 86).

| Item | Frequency | Percentage (%) |
|------------------------------------|-----------|----------------|
| Gender | | |
| Male | 60 | 70 |
| Female | 26 | 30 |
| Total | 86 | 100 |
| Level of education | | |
| Primary | 20 | 23.3 |
| Secondary | 50 | 58.1 |
| Tertiary | 16 | 18.6 |
| Total | 86 | 100 |
| Years of farming experience | | |
| 1-5 years | 20 | 23.3 |
| 6-10 years | 35 | 40.7 |
| 11-20 years | 23 | 26.7 |
| 20 and above | 8 | 9.3 |
| Total | 86 | 100 |

Table 2. Summary of responses to questions 1, 2, and 3.

| Responses | Q1 | | Q2 | | Q3 | | Average | |
|-----------|-----|-----|-----|-----|-----|-----|---------|------|
| | No. | % | No. | % | No. | % | No. | % |
| VHE | 36 | 42 | 58 | 67 | 12 | 14 | 35 | 41.1 |
| HE | 32 | 37 | 12 | 14 | 47 | 55 | 30 | 35.3 |
| IND | 9 | 10 | 6 | 7 | 8 | 9 | 8 | 8.9 |
| LE | 5 | 6 | 8 | 9 | 11 | 13 | 8 | 9.3 |
| VLE | 4 | 5 | 2 | 2 | 8 | 9 | 5 | 5.4 |
| Total | 86 | 100 | 86 | 100 | 86 | 100 | 86 | 100 |

Source: Field Survey 2015.

and years of experience. Onyebinama (2004) and Esiobu (2014) opined that farmers with more years of farming experience are more efficient, have better knowledge of climatic conditions and the market situation, and are therefore able to run their enterprises more profitably.

Research question 1

To what extent does breeding skills enhance sustainable productivity in small scale poultry farming? To answer research question 1, responses to questions 1, 2, and 3 shall be used.

In response to questions 1, 2 and 3 (Table 2) an average of 35 (41.1%) respondents said 'very high extent' while 30 (35.3%) said 'high extent'. However, 8 (8.9%) made no opinion 'indifferent'. While 8 (9.3%) said 'low extent', 5 (5.4%) reported 'very low extent'. This

shows that over 75% of the respondents agreed that breeding skills, to very high/high extent enhances sustainable productivity in small scale poultry farming (Figure 1).

Research question 2

To what extent does feeding skill enhance sustainable productivity in small scale poultry farming?

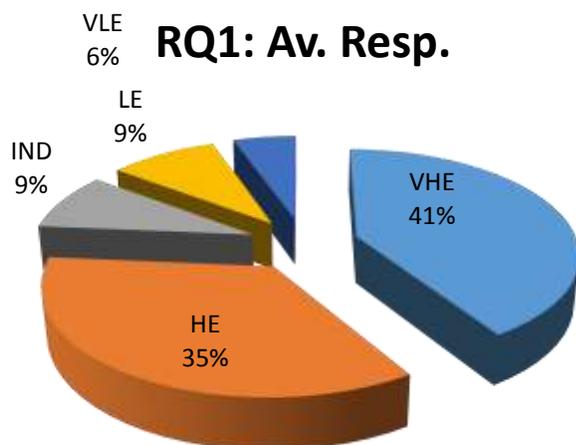
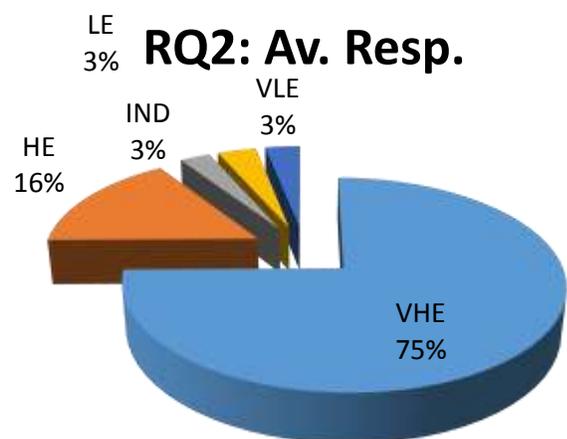
To answer research question 2, responses to questions 11, 15, and 16 shall be used.

Considering also responses to questions 11, 15 and 16 (Table 3) an average of 64 (74.8%) respondents said 'very high extent' while 14 (15.9%) said 'high extent'. However, 2 (2.7%) made no opinion 'indifferent'. While 3 (3.5%) said 'low extent', 3 (3.1%) reported 'very low extent'. This shows that over 90% of the respondents

Table 3. Summary of responses to questions 11, 15, and 16.

| Responses | Q11 | | Q15 | | Q16 | | Average | |
|-----------|-----|-------|-----|--------|-----|-------|---------|------|
| | No. | % | No. | % | No. | % | No. | % |
| VHE | 40 | 46.51 | 86 | 100.00 | 67 | 77.91 | 64 | 74.8 |
| HE | 28 | 32.56 | 0 | 0.00 | 13 | 15.12 | 14 | 15.9 |
| IND | 6 | 6.98 | 0 | 0.00 | 1 | 1.16 | 2 | 2.7 |
| LE | 4 | 4.65 | 0 | 0.00 | 5 | 5.81 | 3 | 3.5 |
| VLE | 8 | 9.30 | 0 | 0.00 | 0 | 0.00 | 3 | 3.1 |
| Total | 86 | 100 | 86 | 100 | 86 | 100 | 86 | 100 |

Source: Field Data.

**Figure 1.** Summary of responses to questions 1, 2, and 3.**Figure 2.** Summary of responses to questions 11, 15, and 16.

agreed that feeding skills, to very high/high extent enhances sustainable productivity in small scale poultry farming (Figure 2).

Research Question 3

To what extent does accounting skill enhance sustainable productivity in small scale poultry farming?

To answer research question 3, responses to questions 21, 22, 23, and 26 shall be used.

In the same vein, responses to questions 21, 22, 23 and 26 (Table 4) an average of 25 (29.36%) respondents said 'very high extent' while 31 (35.47%) said 'high extent'. However, 12 (13.66%) made no opinion 'indifferent'. While 12 (14.24%) said 'low extent', 6 (7.27%) reported 'very low extent'. This shows that over 63% of the respondents agreed that accounting skills, to very high/high extent enhances sustainable productivity in small scale poultry farming (Figure 3).

Research question 4

To what extent does proper disease management skill enhance sustainable productivity in small scale poultry farming?

To answer research question 3, responses to questions 21, 22, 23, and 26 shall be used.

Finally, responses to questions 33, 37 and 39 (Table 5) an average of 46 (53.9%) respondents said 'very high extent' while 25 (29.1%) said 'high extent'. However, 5 (5.4%) made no opinion 'indifferent'. While 9 (10.9%) said 'low extent', 1 (0.8%) reported 'very low extent'. This shows that over 80% of the respondents agreed that proper disease management skills, to very high/high extent enhances sustainable productivity in small scale poultry farming (Figure 4).

Test of hypotheses

In order to find empirical explanation for those hypotheses earlier formulated, the following tables are drawn and further calculations are made using the chi-square (χ^2)

Table 4. Summary of responses to questions 21, 22, 23 and 26.

| Responses | Q21 | | Q22 | | Q23 | | Average | | | |
|-----------|-----|-------|-----|-------|-----|-------|---------|-------|-----|-------|
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| VHE | 30 | 34.88 | 22 | 25.58 | 32 | 37.21 | 17 | 19.77 | 25 | 29.36 |
| HE | 49 | 56.98 | 33 | 38.37 | 24 | 27.91 | 16 | 18.60 | 31 | 35.47 |
| IND | 2 | 2.33 | 15 | 17.44 | 12 | 13.95 | 18 | 20.93 | 12 | 13.66 |
| LE | 5 | 5.81 | 10 | 11.63 | 10 | 11.63 | 24 | 27.91 | 12 | 14.24 |
| VLE | 0 | 0.00 | 6 | 6.98 | 8 | 9.30 | 11 | 12.79 | 6 | 7.27 |
| Total | 86 | 100 | 86 | 100 | 86 | 100 | 86 | 100 | 86 | 100 |

Source: Field Data.

Table 5. Summary of responses to questions 33, 37 and 39.

| Responses | Q33 | | Q37 | | Q39 | | Average | |
|-----------|-----|-------|-----|-------|-----|-------|---------|------|
| | No. | % | No. | % | No. | % | No. | % |
| VHE | 56 | 65.12 | 46 | 53.49 | 37 | 43.02 | 46 | 53.9 |
| HE | 30 | 34.88 | 20 | 23.26 | 25 | 29.07 | 25 | 29.1 |
| IND | 0 | 0.00 | 4 | 4.65 | 10 | 11.63 | 5 | 5.4 |
| LE | 0 | 0.00 | 16 | 18.60 | 12 | 13.95 | 9 | 10.9 |
| VLE | 0 | 0.00 | 0 | 0.00 | 2 | 2.33 | 1 | 0.8 |
| Total | 86 | 100 | 86 | 100 | 86 | 100 | 86 | 100 |

Source: Field Data.

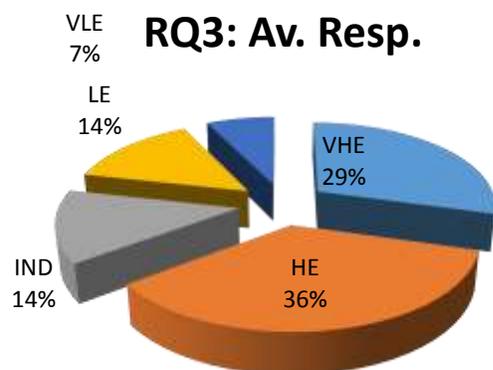


Figure 3. Summary of responses to questions 21, 22, 23 and 26.

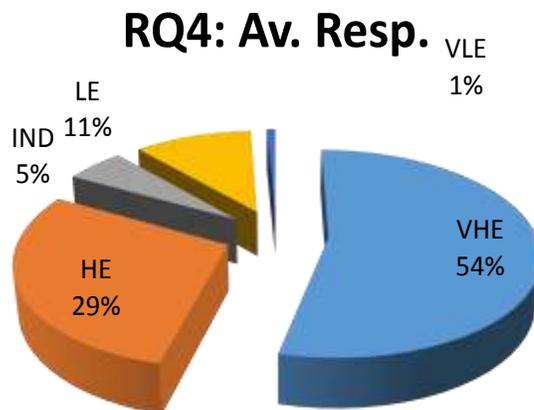


Figure 4. Summary of responses to questions 33, 37 and 39.

test and ANOVA test.

Analysis using Chi-square (χ^2) test

Hypothesis 1

H_{01} : Breeding skills do not significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State.

To analyze this hypothesis, the responses from

questions 1, 2 and 3 summarized in table 1 shall be used as observed frequency.

The minimum expected cell frequency is 21.5. Since the significance level $0.000 < 0.05$ we reject the null hypothesis and accept the alternative hypothesis thereby conclude that breeding skills significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State (Table 6a and b).

Table 6A. Chi-square result.

| | Observed | Expected | Residua |
|--------|----------|----------|---------|
| | N | N | I |
| VLE | 5 | 21.5 | -16.5 |
| IND/LE | 16 | 21.5 | -5.5 |
| HE | 30 | 21.5 | 8.5 |
| VHE | 35 | 21.5 | 13.5 |
| Total | 86 | | |

Table 6B. Test statistics.

| | FO |
|---------------|--------|
| Chi-Square(a) | 25.907 |
| Df | 3 |
| Asymp. Sig. | 0.000 |

a 0 cells (.0%) have expected frequencies less than 5.

Analysis using Anova test

From the ANOVA result in Table 6b, F-calculated (F_{cal}), =4.811; Significance = 0.020. Therefore since calculated significance level (0.020) is less than 0.05 we reject the null hypothesis and accept the alternative. We therefore conclude that breeding skills significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State (Table 7a and b).

Hypothesis 2

H_{02} : Feeding skills do not significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State.

To analyze this hypothesis, the responses from questions 11, 15 and 16 summarized in Table 2 shall be used as observed frequency.

The minimum expected cell frequency is 21.5. The significance level $0.000 < 0.05$ we reject the null hypothesis and accept the alternative hypothesis thereby conclude that feeding skills significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State (Table 8a and b).

Analysis using ANOVA test

In the same vein, from the ANOVA result in Table 8b, F-

Table 7A. Weighted Responses to questions 1, 2 and 3.

| | Q1 | Q2 | Q3 | Weight | WQ1 | WQ2 | WQ3 |
|--------|-----|-----|----|--------|-----|-----|-----|
| Q1 | 36 | 32 | 9 | 5 | 4 | | |
| Q2 | 58 | 12 | 6 | 8 | 2 | | |
| Q3 | 12 | 47 | 8 | 11 | 8 | | |
| Weight | 5 | 4 | 3 | 2 | 1 | | |
| WQ1 | 180 | 128 | 27 | 10 | 4 | | |
| WQ2 | 290 | 48 | 18 | 16 | 2 | | |
| WQ3 | 60 | 188 | 24 | 22 | 8 | | |

Source: Researcher's calculation.

calculated (F_{cal}), = 17.084; Significance = 0.000. Therefore since calculated significance level (0.000) is less than 0.05 we reject the null hypothesis and accept the alternative. We therefore conclude that feeding skills significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State (Table 9a and b).

Hypothesis 3

H_{03} : Accounting skill does not significantly enhance sustainable productivity in small scale poultry farming in Orumba North and South of Anambra State.

To analyze this hypothesis, the responses from questions 21, 22, 23 and 26 summarized in Table 3 shall be used as observed frequency.

The minimum expected cell frequency is 21.5. The result shows that the significance level is $0.001 < 0.05$ we therefore reject the null hypothesis and conclude that accounting skills significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State (Table 10a and b).

Analysis using ANOVA test

Also, the ANOVA result in Table 10b shows that: F-calculated (F_{cal}), = 12.573; Significance = 0.000. Since calculated significance level (0.000) is less than 0.05 we reject the null hypothesis and accept the alternative. We therefore conclude that accounting skills significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State (Table 11 a and b).

Hypothesis 4

H_{04} : Disease management skills do not significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State.

Table 7B. ANOVA responses.

| | Sum of squares | Df | Mean square | F | Sig. |
|----------------|----------------|----|-------------|-------|-------|
| Between Groups | 70177.333 | 4 | 17544.333 | 4.811 | 0.020 |
| Within Groups | 36466.000 | 10 | 3646.600 | | |
| Total | 106643.333 | 14 | | | |

Source: Computer printout.

Table 8A. Chi-square result.

| | Observed N | Expected N | Residual |
|--------|------------|------------|----------|
| IND | 2 | 21.5 | -19.5 |
| LE/VLE | 6 | 21.5 | -15.5 |
| HE | 14 | 21.5 | -7.5 |
| VHE | 64 | 21.5 | 42.5 |
| Total | 86 | | |

Table 8B. Test statistics.

| | FO |
|---------------|---------|
| Chi-Square(a) | 115.488 |
| Df | 3 |
| Asymp. Sig. | 0.000 |

a. 0 cells (.0%) have expected frequencies less than 5.

Table 9A. Weighted responses to questions 11, 15 and 16.

| | | | | | |
|--------|-----|-----|----|----|---|
| Q11 | 40 | 28 | 6 | 4 | 8 |
| Q15 | 86 | 0 | 0 | 0 | 0 |
| Q16 | 67 | 13 | 1 | 5 | 0 |
| Weight | 5 | 4 | 3 | 2 | 1 |
| WQ11 | 200 | 112 | 18 | 8 | 8 |
| WQ15 | 430 | 0 | 0 | 0 | 0 |
| WQ16 | 335 | 52 | 3 | 10 | 0 |

Source: Researcher's Calculation.

Table 9B. ANOVA responses.

| | Sum of squares | Df | Mean square | F | Sig. |
|----------------|----------------|----|-------------|--------|------|
| Between Groups | 227451.600 | 4 | 56862.900 | 17.084 | .000 |
| Within Groups | 33284.000 | 10 | 3328.400 | | |
| Total | 260735.600 | 14 | | | |

Source: Computer printout.

To analyze this hypothesis, the responses from questions 33, 37 and 39 summarized in Table 4 shall be used as observed frequency.

The minimum expected cell frequency is 17.2. Since the significance level $0.000 < 0.05$ we reject the null hypothesis and accept the alternative hypothesis thereby

Table 10A. Chi-square result.

| | Observed N | Expected N | Residua I |
|--------|---------------|---------------|--------------|
| VLE | 6 | 21.5 | -15.5 |
| IND/LE | 24 | 21.5 | 2.5 |
| VHE | 25 | 21.5 | 3.5 |
| HE | 31 | 21.5 | 9.5 |
| Total | 86 | | |

Table 10B. Test statistics.

| | Responses |
|---------------|-----------|
| Chi-Square(a) | 16.233 |
| df | 3 |
| Asymp. Sig. | 0.001 |

a 0 cells (0.0%) have expected frequencies less than 5.

Table 11A. Weighted Responses to questions 21, 22, 23 and 26.

| Q21 | 30 | 49 | 2 | 5 | 0 |
|--------|-----|-----|----|----|----|
| Q22 | 22 | 33 | 15 | 10 | 6 |
| Q23 | 32 | 24 | 12 | 10 | 8 |
| Q26 | 17 | 16 | 18 | 24 | 11 |
| weight | 5 | 4 | 3 | 2 | 1 |
| WQ21 | 150 | 196 | 6 | 10 | 0 |
| WQ22 | 110 | 132 | 45 | 20 | 6 |
| WQ23 | 160 | 96 | 36 | 20 | 8 |
| WQ26 | 85 | 64 | 54 | 48 | 11 |

Source: Researcher's Calculation.

Table 11B. ANOVA responses.

| | Sum of squares | Df | Mean square | F | Sig. |
|----------------|-------------------|----|----------------|--------|-------|
| Between Groups | 51817.300 | 4 | 12954.325 | 12.573 | 0.000 |
| Within Groups | 15455.250 | 15 | 1030.350 | | |
| Total | 67272.550 | 19 | | | |

Source: Computer Printout.

concluding that disease management skills significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State (Table 12 a and b).

Analysis using ANOVA test

Finally, the ANOVA result in Table 12b shows that: F-

Table 12A. Chi-square result.

| | Observed N | Expected N | Residua I |
|-------|---------------|---------------|--------------|
| VLE | 1 | 17.2 | -16.2 |
| IND | 5 | 17.2 | -12.2 |
| LE | 9 | 17.2 | -8.2 |
| HE | 25 | 17.2 | 7.8 |
| VHE | 46 | 17.2 | 28.8 |
| Total | 86 | | |

Table 12B. Test statistics.

| | FO |
|---------------|--------|
| Chi-Square(a) | 79.581 |
| Df | 4 |
| Asymp. Sig. | .000 |

a 0 cells (.0%) have expected frequencies less than 5.

Table 13A. Weighted responses to questions 33, 37 and 39.

| Q33 | 56 | 30 | 0 | 0 | 0 |
|--------|-----|-----|----|----|---|
| Q37 | 46 | 20 | 4 | 16 | 0 |
| Q39 | 37 | 25 | 10 | 12 | 2 |
| Weight | 5 | 4 | 3 | 2 | 1 |
| WQ33 | 280 | 120 | 0 | 0 | 0 |
| WQ37 | 230 | 80 | 12 | 32 | 0 |
| WQ39 | 185 | 100 | 30 | 24 | 2 |

Source: Researcher's Calculation.

calculated (F_{cal}), = 44.513; Significance = 0.000. Since calculated significance level (0.000) is less than 0.05 we reject the null hypothesis and accept the alternative. We therefore conclude that disease management skills significantly enhance sustainable productivity in Small Scale Poultry Farming in Orumba North and South of Anambra State (Table 13 a and b).

DISCUSSION

The findings of this study indicate that entrepreneurship has the ability to make farmers more functional with necessary skills required in poultry production. The data generated and analyzed from the research question and hypotheses from farmers and extension agents confirmed that breeding, feeding, accounting and disease management skills are required by small-scale poultry

Table 13B. ANOVA responses.

| | Sum of squares | Df | Mean Square | F | Sig. |
|----------------|----------------|----|-------------|--------|-------|
| Between Groups | 112708.000 | 4 | 28177.000 | 44.513 | 0.000 |
| Within Groups | 6330.000 | 10 | 633.000 | | |
| Total | 119038.000 | 14 | | | |

farmers in Orumba North and South Local Government of Anambra State for increase in productivity. The findings of this study were in conformity with the view of Kekeocha (1998) who noted that poultry production training programmes must be integrated with the application of the principles of poultry rearing and management; feeds and feeding; breeding; health and disease management; records and record keeping etc.

The findings on breeding in this study is in line with the submission of Oslon (1997) who noted that breeders use inbreeding to concentrate on good and bad genes which are eliminated while good genes are conserved and consolidated. The findings were also in consonance with the opinion of Mba (2007), that in stud-mating hens are released to the cock in the open as desired and reputable cocks are selected to improve breeding. Out breeding is necessary as it is a means whereby desired characteristics from another breeding is introduced to a breeding stock.

On feeding skills, the findings are in line with the view of Obioma (1992) who noted that, feed production requires scientific knowledge of different feedstuff and the proportion of essential nutrients to be combined to formulate the feed, procure feedstuffs, additives and store in warehouse for factory use. The author went further to list feeding skills activities as follows: measure known quantities of feed stuff and transfer into grinder, mix grind known quantities of feed stuff to formulate difference types of feed/ration, and record the number of bags or tonnage produced. Obiyai et al. (2011) in their study on Development of Entrepreneurship Skill Training Module for Farmers in Fish Feed Production and Marketing Occupation identify feeding skills in fish feeding production as procure feedstuffs, additives and store in warehouse for factory use, crush, grind known quantities of feed stuff and additives produce standard feeds and record the different grades mix grind known quantities of feed stuff to formulate difference types of feed/ration

On accounting skills, the findings agreed with the views of Mohammad et al. (2011) who listed accountancy and financial management skills to include ability to record conducted production in poultry production enterprise, ability to record consumed inputs in poultry production enterprise, ability to record and calculation of profit and loss in poultry production enterprise, following-up continuing education to improve financial management

skills, ability to effectively use of financial and credit from various sources, ability to purchase needed inputs, ability to create a good and effective financial accounting system, ability to record and calculate the amount of initial capital in poultry production enterprise

Also the findings on disease management skills are in line with the study of Tim-Ashama (2012) on entrepreneurial skills required by farmer in broiler brood and sale enterprise identified disease management skills such as provide foot bath containing disinfectant, take strict sanitation measures, isolate the brooder house, give Newcastle vaccination during the first week. Nmadu (2014) and Amejil (2012) noted that good management practices are not currently in widespread use in poultry production, farmers are not generally knowledgeable about disease prevention, modern husbandry practices, such as adequate feeding, housing and stocking to avoid overcrowding, proper disposal of wastes, cleaning, and disinfection.

The views, opinions, advice and statements of the authors above helped to validate the findings of the study on the entrepreneurial skills required by small scale poultry farmers for increase in productivity and sustainable agricultural development in Orumba North and South Local Government of Anambra State, Nigeria. To the best of our knowledge, there is hardly any literature so far that examines the entrepreneurial skills required by small scale poultry farmers in Orumba North and South Local Government of Anambra State for increase in poultry productivity. Therefore, it is the aim of the present paper to contribute to the closing of this research gap. To this end, we describe breeding, feeding, accounting and disease management skill taking into account the relative importance of poultry production.

Implications of the study

Although the present study was confined to some selected entrepreneurial skills, it may be appropriate to state briefly the implications arising from the findings of the study. In this context, the following policy actions may be considered worthwhile. Courses on entrepreneurship may be introduced in the Curricula of secondary and higher institutions in Nigeria so that school/college dropouts are exposed to entrepreneurial skills required in poultry production. Further, the youngsters, on

completion of school/college education may emerge as a job- creator instead of job seekers. In Nigeria, profitable investment avenues are available in various fields like poultry farming involving simple technology, small capital and low gestation period. Further, operators of agricultural banks officials need to be simplified, so that prospective poultry entrepreneurs can avail themselves of credit facilities offered by concerned agencies. Training facilities for poultry entrepreneurs have become an essential factor at the moment that local resources, technology and existing problems may be considered in designing training courses for entrepreneurs like poultry farmers. Supportive and sustaining services may be offered by the governmental and promotional agencies to the entrepreneurs in order to develop entrepreneurship in study areas.

Limitations of the study

The study is limited to breeding, feeding, accounting and disease management skills. Other skills like planning, housing etc will be for further research.

Conclusion

Finding of this study showed that all the identified skills in breeding, feeding, accounting and disease management in this study were required by small-scale poultry farmers for economic success in poultry production. Hence, there is need for poultry farmers to be properly educated and trained in this area of poultry enterprise so that they could be able to make a living in poultry business. This could assist in reducing poverty and contribute to the socio-economic well-being of their individual families and sustainability of agricultural productivity. Contact with extension agents could help farmer's access technological information and improve production and productivity through the efficient use of available resources and improved technology.

Recommendations

1. The government of Nigeria should organize programs at the national, state, and community level to train farmers on improved rearing and production methods.
2. Also effort should be made by government to establish and equip skill acquisition and training centers to enhance the effectiveness of small scale poultry farmers.
3. Government should provide financial assistance to small-scale poultry farmers in form of soft loans. This will help prevent the decline of the sector as a result of unprofitable operations or increase in the prices of its products.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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