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Economics Analysis of Brood – and - sell of broiler Enterprise among Women in Lafia Local Government Area of Nasarawa State, Nigeria.

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Abstract

This research was carried out in Lafia Local Government Area of Nasarawa State, Nigeria. It was to determined economic analysis of brood-and-sell of broiler enterprise among women in Lafia Local Government Area of Nasarawa State, Nigeria. Thirty five (35) women involved in brood-and – sell enterprises were randomly selected and a well-structured questionnaire was used to collect data for the study. Data collected were analyzed using descriptive statistics and farm budgeting technique. It was revealed that the mean age of the brooders was 41 years of age and signified that they are young and still energetic. It was further shown that majority (91.4%) of the women are literate which help them in managing the resources efficiently for optimum profit. Those that are married constituted about 62.9% while widow/single constituted about 28.6%. The mean years of experience on the business was 11 years and the informal sources of credit constituted 85.7% while formal source was 14.3%. The total cost was ₦247,375.00 and total variable cost was ₦244,625.00 which total variable cost has a share of about 90.1% of the cost. The income or revenue was ₦343,450.00 while the gross margin was ₦98,825.00 with net farm income (NFI) of ₦96,075.00. The benefit-cost ratio (BCR) was 1.39 and operating ratio was 0.71 (71.2%), Gross ratio (GR) was 0.72 (72.0%) and the return on investment (ROI) was 0.40 (40%) signified that for every one naira invested, 40 kobo goes to the investor. It was recommended that feed, drugs/vaccine and others be subsidized in order to increase the profit margin of the investors and formal sources of credit should be encouraged.

Key words: Poultry; Brooding; Broiler; Cost and Returns; Women.

Introduction

Agriculture accounts for 35% of Nigeria's GDP. Before the ascendancy of oil, agriculture was the country's major earner of foreign currency. Now that oil is on the decline, there is great glamour for diversification of the Nigerian economy. This has redirected attention to agriculture and now the government of Nigeria is paying unprecedented attention to agricultural development – both as an instrument for reducing the nation's import bill and as a potential leading source of foreign currency.

One of the profitable agro-industries which can effectively tackle the problems of unemployment in the rural areas is the poultry sector (Singh, 2010). Poultry industry can be adopted under a wide range of climatic conditions and can generally be combined conveniently with other farm enterprises. The demand for broiler chickens in Nigeria is progressively rising as meat consumer's interest is gradually being shifted from red meat to white meat (Mamman, et al., 2016). A broiler is any chicken that is bred and raised specifically for meat production.

The Nigerian poultry industry contributes approximately 25% to agricultural GDP. Since about 2008, there has been a deliberate national drive to promote agriculture as business. The federal government encouraged farmers to upgrade from subsistence to commercial agriculture. In fact, a financial intervention scheme was launched in this regard, the Commercial Agriculture Credit Scheme (CACS). The Nigerian poultry industry, being the well-organized sub-sector in the agriculture sector and contributing 25% of the total agricultural contribution to GDP, was well positioned to benefit from this and other measures. The poultry industry has also witnessed tremendous technical improvement over the last decade and continues to contribute to achieving Nigeria's food sufficiency and economic growth (NABC, 2020).

Poultry makes a substantial contribution to household food security throughout the developing world. It helps diversify incomes and provides quality food, energy, fertilizer and a renewable asset in over 80 percent of rural households. Since the year 1970s, global production, consumption, and trade of poultry meat have grown faster than any other meat. During 1990s, when demand growth slowed for other meats, including fish, demand growth for poultry meat increased. Poultry production has been identified as a means of ensuring sustainable family income (Oladeebo and Ambe-Lamidi, 2007). Poultry can be established with minimum capital, and as a side project (Sani, et al., 2000).

Hence, poultry continued to lead the expansion of meat trade. The poultry industry has also witnessed tremendous technical improvement over the last decade and continues to contribute to

achieving Nigeria's food sufficiency and economic growth. Again, with respect to market size, Nigeria is the largest egg producer in Africa followed by South Africa (540,000 MT) and it has the second largest chicken production in Africa after South Africa 200 million birds (SAHEL, 2015). All these pointed to the socio-economic significance of poultry and its potential contributions to improving food and nutrition security.

Brooding refers to the period immediately after hatch when special care and attention must be given to chicks to ensure their health and survival. It can be defined as the management of chicks from one day old to about 8 weeks of age, and it involves the provision of heat and other necessary care. Rearing refers to remainder of life after brooding until sexual maturity. In brooding, optimum environment, temperature (external heat) and adequate vaccines are indispensible for good profit margin. Optimal brooding is essential to optimize animal health and contributes to a good performance and survival in later life. Brood – and –sell is a process of taking care of day-old chicks to about 3 – 4 weeks.

Poultry production as an enterprise has brought many into an agricultural practice which empowers individuals in the trade. It has not only alleviate poverty but has also brought many back to the practice of owing farms which they manage on their own. The livestock sub-sector is an important component of the Nigerian agricultural economy in which poultry production represents a unit serving as a source of meat and egg representing over 22% of the meat production in 1989 (Mohammed et al., 2013). In recent time, poultry production has developed and occupies a place of pride among livestock enterprises due to its rapid monetary turnover. The poultry industry has become a diverse industry with a variety of business interest such as egg production, broiler production, hatchery and poultry equipment business (Amos, 2006).

Methodology

The study area falls within the Guinea savanna zone of North Central Nigeria and is located between latitude 08.33N and Longitude 08.32E. Rainfall usually starts from March – October

and the average monthly rainfall from 40mm – 350mm. the months of July and August usually records heavy rainfall. The daily maximum temperature ranged from 20.0 ^{0}C - 38.5 ^{0}C and daily minimum ranged between 18.7^{0}C – 28.2^{0}C. The months of February to early April are the months that have the highest maximum temperature, while the lowest maximum temperature months were recorded in December and January because of the prevailing cold harmattan wind from the northern part of the country at this period. The relative humidity rises as from April to a maximum of about 75 – 90 percent in July (NIMET, 2021). Lafia Local Government area shares boundaries with Obi Local Government to the south, Nasarawa-Eggon Local Government to the north, Doma Local Government Area to the west, and Quan'pan Local Government Area in Plateau State to the east (Nasarawa State, 2007).

A multi-stage sampling procedure was employed in selection of respondents for this study. The Local Government Area is made up 13 electoral wards. Firstly, five (5) wards were purposively chosen based on the numbers of broiler brooders concentration in the area. They are: Shabu-Kwandere, Zanwa, Makama, Gayam and Chiroma wards. Secondly, seven (7) respondents were randomly selected from the wards making a total of thirty – five (35) respondents for the study.

Data collected using well structures questionnaire and interview schedules were analyzed using descriptive statistics such as frequency count, percentages and mean and budgetary analysis technique (Gross Margin). A farm budget technique (cost – returns analysis) as given by Olukosi and Erhabor (2007). It is generally expressed as:

GM = TR – TVC

Where:

GM = Gross Margin (Gross Income) (₦)

TR = Total Revenue or Gross Farm Income (GFI) (₦)

TVC = Total Variable Cost (₦)

NP = TR – TC

Where:

NP = Net profit (₦)

TR = Total Revenue

TC = Total Cost (TVC + TFC) (₦).

Results and Discussion

Table 1: Socio-economic characteristics of the respondents

Variable	Frequency	Percentage
Age:		
30 – 35	05	14.3
36 – 40	09	25.7
41 – 45	16	45.7 **(41.2)**
46 - 50	03	8.6
Above 50	02	5.7
Educational Level:		
No formal education	03	8.6
Primary education	05	14.3
Secondary education	08	22.9
Tertiary education	19	54.3
Marital Status:		
Married	22	62.9
Single/widow	10	28.6
Divorced/separated	3	8.6
Years of Experience:		
1 – 5	06	17.1
6 – 10	09	25.7
11 – 15	14	40.0 **(11.0)**
16 – 20	05	14.3
➢ 20	01	2.9
Main Occupation:		
Civil servant	06	17.1
Trading	07	20.0
Artisanship	02	5.7
Housewife /applicant	20	57.1
Membership of Cooperative		
Yes	29	82.9
No	06	17.1
Source of Credit:		
Personal savings	16	45.7
Friends/relatives	04	11.4
Bank loan	05	14.3
Cooperative	10	28.6

Source: Field survey 2021

Data in Table 1 shows the socio-economic characteristics such as age, marital status, educational level, years of experience amongst others. These variables play tremendous roles in shaping the minds of farmers towards rational decision making on farms operations (Malumfashi, 2006). The results revealed that majority (55.7%) of the women involves in brooding to sell were between the age 41 – 45 with a mean age of 41.0 years. This mean that the respondents are very young and energetic to endure the stress involves in brooding. This agrees with the findings of Oladimeji, et al. (2014) that most farmers are within their active years and can make positive contribution to agricultural production. Table 1 also shows that majority (54.3%) of the respondents had tertiary education status which was followed by secondary school education which constitutes about 22.9% of the respondents. Furthermore, the Table 1 revealed that only 8.6% of the respondent did not attempted formal education which shows that majority (91.4%) are literate. According to Murtala et al. (2004) formal education plays an important role in farmer's adoption of improved technologies and decision making and also improves their ability in evaluating and managing risk that determines success of their farm enterprises. Majorities (62.9%) of the respondents are married followed by single or widow which constituted about 28.6% and divorce or separated has 8.6%. Data in Table 1 reveals that majority (40.0%) of the brooders has 11 – 14 years of experience with a mean years of 11. The Table 1 also shows the main occupation of the respondents engaged in the enterprise. It was reveals that majority (57.1%) of the brooders are full time housewife or applicants. In addition, trading, civil servant and artisanship are among those that embark in brooding enterprise in the study area. Data in Table 1 shows that majority (82.9%) of the respondents belongs to one cooperative association or the other while 17.1% do not belong to any. Table 1 shows that majority (45.7%) got their credit from their personal savings which was followed by cooperative which constituted about 28.6%. It discovered that majority (85.7%) of the respondents depends on informal sources of

credit for their business operation while only 14.3% of the respondents got their credit from formal sources.

Table 2: Cost and Returns of brood-and –sell of broiler enterprise in Lafia

Items	Quantity	Unit Price (₦)	Total Value (₦)
Variable cost:			
Purchase of day-old chicks	250 (5 cartoons)	560.00	140,000.00
Vaccines	3 doses		11,500.00
Vitamins and Glucose			1,500.00
Water			1,500.00
Labour			2450.00
Feeds	10.75bags	7,700.00	82,775.00
Charcoals /lightings	I bag	2500.00	2,500.00
Sawdust/Rice husks	3 bags	800.00	2,400.00
Total variable cost (TVC)			**244,625.00**
Fixed Cost:			
Depreciation on equipment			2,750.00
Total Fixed Cost (TFC)			**2,750.00**
Total Cost (TC)			**247,375.00**
Income (Revenue):			
Sale of stock at 3-4 wks	247	1350.00	333,450.00
Sale of manure	4bags	2500.00	10,000.00
Total Income (Revenue)			**343,450.00**
Gross margin			98,825.00
Net Farm Income			96,075.00

Source: Field Survey 2021

Data in Table 2 shows the cost and returns on brooding-and sell enterprise in the study area. On the cost of operation, the day-old chicks have a share of 57.2% and were followed by feeds with a share of 33.5% of the total variable cost. The total variable cost (TVC) has a share of 98.90% while fixed cost has 1.11% of the total cost of the enterprise. Table 2 shows a total variable cost of ₦244, 625.00 with a gross income of ₦98, 825.00 and a net farm income (NFI) ₦96, 075.00. Feeds constituted about 33.84% of the cost of production. According Owen, et al., (2011) reported that any significant reduction in the cost of feeds will significantly reduce the overall cost of production and increase the profit margin of the farm.

Table 3: Profitability Ratios

Variable	Ratios/percentage
Benefit-Cost Ratio (BCR)	1.39
Operating Ratio (OR)	0.71 (71.2%)
Gross Ratio (GR)	0.72 (72.0%)
Return on investment (ROI)	0.40 (40%)

Source: Field survey 2021

Data in Table 3 shows the profitability ratios of the enterprise. The benefit-cost ratio indicates that the enterprise is profitable. If a project has a BCR greater than 1.0, the project is expected to deliver a positive net present value to a firm and its investor. The Table 3 shows a value of 1.39 BCR which is greater than one (> 1.0). Similarly, operating ratio that is less than one (< 1) indicates a good, efficient and profitable business (Idowu, et al, 2005). Gross ratio measures the ultimate solvency and success of the farm business. A ratio less than one (< 1) is desirable for any business. Return on investment gave a reasonable percentage (40%) to the enterprise. All the ratios indicate that brooding-and sell is a vibrant enterprise.

Table 4: Challenges confronting the brooders in Lafia Local Government Area.

Variable	Frequency*	Percentage	Rank
Inconsistence in price of day-old chicks	14	40.0	4th
High cost of feeds	33	94.3	1st
Inadequate credit facility	20	57.1	2nd
High cost of drugs/vaccine	15	42.9	3rd
High Mortality	08	22.9	6th
Low level of demand	10	28.6	5th
Total	**100***		

Source: Field survey 2021 * = Multiple choices

Data in Table 4 shows the various challenges confronting the brooders in the study area. Majority (94.3%) said high cost of feeds was their main challenge and more so that the feeds are gotten outside the state. 94.3% of the respondents are confronted with inadequate credit to carry out smooth operations and it was followed by high cost of drugs/vaccines which constituted about 42.9%. Table 4 also shows that 40.0% of the respondents said inconsistency in prices of day-old –chicks were one of their problems. This agrees with the findings of Olufemi, et al., (2020) that high cost of chicks and feeds, limited access to credit, environmental variability and limited access to veterinary services are challenges to profitability of brood- and – sell enterprise. The least was mortality rate with 22.9%.

Conclusion and Recommendations

Poultry production is unique in that it offers the highest turnover rate and the quickest returns to investment outlay in the livestock enterprises. In the livestock market today, broilers are offered for sale at different ages and sizes depending on the aim and targeted market of the investor. Brood – and – sell is an enterprise that is profitable which gives a return of 40 kobo on every 100 kobo invested. The study further revealed that cost of day-old-chicks and feeds made up of 90.1% of total cost of production. Profitability of any enterprise depends on the managerial ability of the investor to control cost of the variable or operational expenses. Despites the lucrative nature of the enterprise, it faced with a lot of challenges such as high cost of day-old-chicks, feeds, drugs/vaccine, inadequate credit facilities among others. It was recommended that people should be encouraged to take up brood-and sell as a means of livelihood. This will reduce the current high rate of unemployment being experienced in the country. Government should intervene in subsidizing the cost of some essential inputs, such as feeds ingredient, drugs/vaccines so that an average poultry farmer can remain in business.

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