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## Effects of Loan on Poultry Egg Production in Ado Odo Local Government Area of Ogun State, Nigeria

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### Abstract

*The study assessed effect of loan on poultry egg production in Ado-Odo Local Government Area, Ogun State, Nigeria. Simple random sampling technique was used for the study. An informal enquiry conducted in the area priori to this formal research revealed that the dominant poultry farmers' association in the study area is Poultry Association of Ogun State (PANOG). Data were collected through structural questionnaires and eighty (80) of respondents were randomly selected for the study. The data were analyzed using descriptive statistics and inferential statistics. It was revealed that majority of the respondents (82.5%) were male while (17.5%) were female, and majority of the poultry farmers in the area were formally educated to the tertiary level which gives the impression that they are well educated thereby, making them to have high level of skill acquisition for the success of their business. Logit regression model was employed to estimate the level of accessibility to loan by the poultry farmers. Analysis of the factors determining the level of loan accessibility result revealed that the coefficients of the Logit regression analysis are positive and significant at 1% except for the coefficients of household size, educational attainment, loan received and interest paid which were not significant. An analysis of the problems revealed that all (100.0%) of the sampled poultry farmers claimed that they face the problem of inadequate fund and capital, pilferage and theft, diseases, unbearable cost of feeding, unstable power supply while the majority (48.8%) claimed that they experience the problem of inadequate fund and capital. This implies all the aforementioned problem (inadequate fund and capital, pilferage and theft, diseases, unbearable cost of feeding, unstable power supply) constitute problems militating against poultry farming in the study area. Arising from the findings of the study, it is concluded that, majority of the poultry farmers were engaged in farming activities as their main occupation and had less than 6 years experience in poultry farming. Cooperative societies top the list of non- personal source of finance being used in funding the poultry farming business. The study therefore recommended that Government should provide equitable loan facilities to all the poultry farmers and this will enhance the growth and development of the poultry farms, and will also increase their means of livelihood,*

**Keyword:** Loan, Poultry, Business, Farming, Income

### INTRODUCTION

Poultry industry plays an important role in the development of Nigerian economy. It is a major source of egg and meat which have high nutritional value particularly in the supply of protein. Eggs are also important in the preparation of confectionary and vaccines. Eggs out-rank chicken, beef and pulses in terms

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of protein quality, and egg-white protein has a biological value of 100 (Layman and Rodriguez 2009), the highest biological value of any single protein. In addition to providing high quality nutritious food, poultry egg production generates income and supports rural livelihood. In light of increasing human population, educational level, awareness on human nutrition, and purchasing power of communities, there is a growing demand for eggs.

The importance of poultry to the national economy cannot be over emphasized, as it has become popular industry for small holders that have great contribution to the economy of the country. Poultry eggs plays an important role in bridging the protein gap in Nigeria and are rich in iron, vitamin B12 and E, and contains readymade vitamin D3 (Atteh, 2004). Egg as an important poultry product is known to be acceptable to all the people of all races, and the most widely demanded poultry product. Poultry is one of the main sectors where over 60% of animal protein is being derived. However, the increased growth rate experienced in the industry does not commensurate with the fast rate of growing population.

The production of eggs has been the factor of the greatest economic importance in poultry production, thus the marketing of this product cannot be over emphasized. The poultry industry has become a diverse industry with variety of business interests such as egg production, broiler production, hatchery, and poultry equipment business (Amos, 2006). The Egg industry is one that has changed over the years from many small producers to one that is highly centralized and more specialized.

In Nigeria, poultry enterprise is among the agribusiness subsectors that require additional financing apart from the farmer's owned investment fund. Modern poultry production requires the application of modern technology in the management of the poultry business. Poultry sub sector today, is unarguable one of the most attractive investment options in the agricultural industry in Nigeria.

The agriculture sub sector is resource driven and requires the farmers to be in control of the housing or environmental, nutritional and health needs for optimal productivity (Omonona, Lawal and Olulana, 2010). Previously, Nigeria's government had encouraged the development of modern poultry enterprises through the establishment of research institutes, hatcheries and training programmes on modern poultry management. Also, private partnership has been stimulated through the policy of privatization and commercialization of the federal government. These incentives have resulted in the sudden rush of people of diverse backgrounds into the industry. (Okoli, *et. al.* (2004) currently, commercial poultry production in the midst of modern technologies is attractive because birds are able to adapt easily, have high economic value, high rate of productivity and high demand for the products.

Oboth (2003) observed that about 88.9 percent of the poultry farms were funded to the tune of 2.5 million per annum while the average annual funding rate was 1.701 million. This thus indicated the poor funding status of small scale poultry farms in South Western Nigeria. It was also reported that only 4.21 percent of the poultry farms had between ₦3.1 – ₦3.5 million funding rate per year. As the majority of these farms operated below fund secure level, there were limited loan facilities to procure necessary items such as high quality and abundant feeds, drugs and vaccines, cages and feeding troughs, hybrid chicks and so on. Funds were also required for settling workers salaries, constructing feed mills and rendering various marketing services. The low level of loan supply to the poultry farms therefore limits productivity and expansion in the sub sector. To enhance performance in commercial poultry farms, therefore, adequate and timely release of funds that will see the farm beyond the fund insecure zone is essential. This could be made possible through joint efforts of the private investors, government agencies and co-operative societies.

An increase in the level of loan of the poultry industry, better management practices, leading to good nutritional egg and meat production, are required to supply the essential protein for the population (Oboth, 2003). Again, poultry production is considered a high risk investment by most financial institutions due to high rate of poultry mortality, low productivity in many cases and low levels of loan repayments. This situation has led to skepticism on the part of financiers when considering financial requests for poultry egg production. At present, a large proportion of the operators in small scale poultry industry in South Western Nigeria are in poverty due to poor financial standing and high risk which reduces the level of accruable profit ( Oludimu, *et. al.* 2004).

Agricultural loan is considered essential to the process of improving agriculture and transformation of the rural economy. According to Mahmood *et al.*, (2009), the introduction of easy and cheap loan is the quickest way for boosting agricultural production. The argument is that the agricultural sector depends more

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on loan than any other sector of the economy because of the seasonal variations in the farmers' returns and loan requirement in the transformation of subsistence to commercial farming.

Loan provides the opportunity for them to earn more money and improve on their standard living (Mahmood, *et al.*, (2009). There is thus a growing concern for lack of loan to poultry farmers even though there are loan policies on the ground. For instance, in the year 2000, a total of N5 million was provided by the federal government through the Nigerian Agriculture Cooperative and Rural Development Bank as an investment revolving fund in each local government area in the country, (Federal Republic of Nigeria (FRN), 2000). The importance of the availability of agricultural loan is evident by the fact that the mean input expenditures per hectare were found to be significantly higher for farmers with loan irrespective of their wealth status. Higher input expenditures were linked with higher productivity growth.

Apart from the owned source, major sources include credit existing for Nigeria poultry farmers are: informal sources, formal sources. The informal credit sources include lending and gifts from relatives, merchants, friends, local money lenders, daily contribution (Ajo), rotating savings and loan association, and donor agencies. In line with above examples of informal credit loan sources, informal sources are usually non- governmental (NGOs). The formal institution sources of farm credit in Nigeria include: Agricultural credit Guarantee Scheme (ACGS), The Nigeria Agricultural and Co-operative Bank (NACB), The Commercial and Merchant Bank, Agriculture and Multipurpose Loan Agency (OSAMCA). The formal sources are those established by law and which can be influenced by government policies. There is concern for lack of credit for the agricultural sector most especially for poultry farmers. Therefore, focus is on the impact of access to credit on the productivity of poultry farmers.

Access to loan is very crucial to small scale farmers especially in less developed nations of the world, this is because it increases farmer's production and improves their total productivity. Loan can be in form of money, cash, bank, overdraft or kinds as a form of input purchased and supplied to the farmers. Moreover, animal scientist, economist and policy makers are of the opinion that the development of livestock industry is the only option for bridging the generally low protein deficiency gap in a Nigerian's diets (Odiase-Alegimhen, 2004). Poultry eggs and meats contribution of the livestock share of the Gross Domestic Product (GDP) increased from 26% to 27% in 2004 (CBN 2004).

This significant improvement in poultry production was been sustained by availability and use of improved vaccines which curtailed mortality rate in birds, reduction in the tariffs on imported day old chicks and parent stock (CBN 2004).

Commercial banks generally do not serve the needs of the rural poor because of the perceived high risk and the high transaction costs associated with loans and savings deposits. To fill the void, many governments by setting up special agricultural banks or directing commercial banks to loan to rural borrowers. Succinctly, microfinance consist money (credit or loan facilities) made available to entrepreneurs for executing certain developmental projects. It has been argued that if only sufficient agricultural finance was made available, the decline in the production and supply of poultry product in Nigeria would improve (Oludimu and Fabiyi 1983).

For industrial poultry birds in Ado-Odo Local Government, Area to express their full genetic potential, certain basic requirement must be provided. These include environment, good management, balanced rations and adequate housing utilization of existing resources and well built housing system. These facilities can be provided through adequate capital base, which is lacking in Nigeria.

Based on the capital intensive nature of the business and high poverty rate among farmers in Nigeria increase poultry production cannot be achieved on its own without exogenous stimulus such as loan. Unfortunately, several factors are thought to limit farmers' access and demand for loan in Nigeria. Identification and understanding of these factors among poultry farmers will better inform the policy makers on how to tackle the problem of loan deficiency in the sub-sector.

## **OBJECTIVES OF THE STUDY**

The broad objective of the study is to examine the effect of loan on poultry egg production in Ado- Odo Local Government Area, Ogun State. The specific objectives are to:

- describe the socio- economic characteristics of the poultry egg producers in the study area.

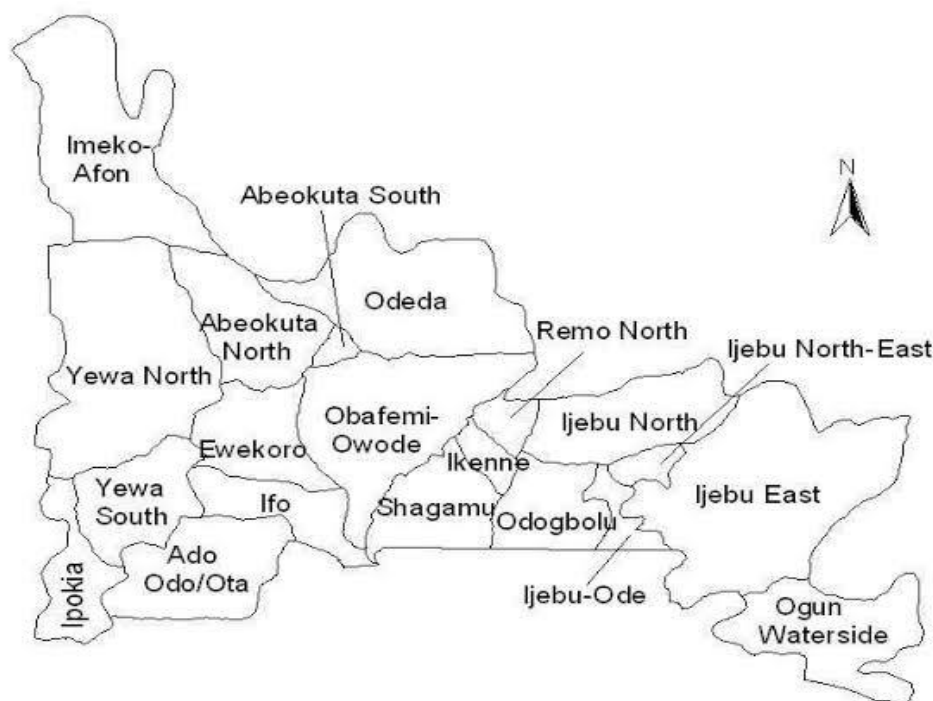
- identify the level of accessibility to loan facilities among poultry egg producers
- determine the effect of loan on poultry egg production output.

## RESEARCH METHODOLOGY

### The Study Area

The study area for this research work is Ado – Odo Local Government Area, Ogun State, Nigeria, which is a veritable industrial Local Government Area in Ogun State with its headquarters at Ota, came into existence in May 19, 1989 with its local development council area that was recently created in May 2016 following demands for more Local Government Area in the State. It is a product of the merger of the former Ifo/Ota Local Government Area. It is a grade A Local Government Area and third largest in Ogun State. It has a land mass of 878 square kilometers and a population of 526,565 people at the 2006 census Ado-Odo is bounded in the East and South by Lagos State ( the nation's main sea port and individual centre), in the North by Yewa South and Ifo local governments, in the West by Ipokia Local Government, Area.

Ado Odo dwellers are mainly farmers who basically specialized on cultivation of food and cash crops such as cocoa, kolanut, palm oil, coffee, cassava, timber, maize, and vegetables. This Local Government Area is also endowed with mineral resources such as kaolin, silica sand, gypsum, and glass sand among others.



**Figure 1: Map of the Study Area**

### Sources of Data Collection

Primary and secondary sources of data were used for the study. Primary data were collected using well-structured questionnaires. The structured questionnaire was administered to the poultry egg producers to gather information from them. The secondary data on the other hand was sourced for through relevant journals, textbooks, newspapers, internet, magazines, literatures and other statistical bulletin both published and unpublished records.

### Sampling Techniques and Sample Size

A simple random sampling technique was used for the study. An informal enquiry conducted in the area prior to this formal research revealed that the dominant poultry farmers association in the study area is the Poultry Association of Ogun State (PANOG). Therefore, list of practicing poultry farmers was obtained and formed the basis of the sampling. Eighty (80) of them were selected randomly for the study.

### Methods of Data Analysis

Data were analyzed using descriptive statistics, Logit regression model, Ordinary Least Square (OLS), and multiple regressions.

**(i) Socio-Economic Characteristics of the Poultry Egg Producers**

Descriptive statistics such as frequency and percentage was used to describe the socio-economic characteristics (i.e. age, marital status, education, family size, religion etc) of the poultry egg producers in the study area.

**(ii) Level of Accessibility to Loan Facilities among Poultry Egg Producers**

Logit regression model was used to identify the level of access to loan facilities by the poultry egg producers and it is expressed thus:

$$Y_i = \log \frac{PI}{1-PI} = \beta_0 + \beta_i X_i + \epsilon \tag{1}$$

$Y_1$  = Credit use decision of ith poultry egg producer (1= if acquired credit, 0= if other wise)

$X_1$  = Age (years)

$X_2$  = Gender (1 = male, 0 = female)

$X_3$  = Household size (Number)

$X_4$  = Educational attainment (Years)

$X_5$  = Amount of credit (Naira)

$X_6$  = Amount received (Naira)

$X_7$  = Relative amount repaid (Naira)

$X_8$  = Interest paid (Naira)

$X_9$  = Member of association (1 = yes, 0 = No)

$X_{10}$  = Experience (Years)

$U_i$  = Error term

**(iii) Effect of Loan on Poultry Egg Production.**

Ordinary Least Square (OLS) model was used to determine the level of access to loan on poultry egg production in the study area.

The implicit form of the OLS regression model fitted to the data is given as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, U) \tag{3.1}$$

Where

$Y$  = total egg output (per create)

$X_1$  = Gender of the farmer (male = 1, female = 0)

$X_2$  = Age of the farmer (years)

$X_3$  = Education of farmer (i.e years spent in school)

$X_4$  = Size of land (hectare)

$X_5$  = Amount of loan obtained (naira)

$X_6$  = Interest paid (naira)

$X_7$  = Total price of birds (naira)

$X_8$  = Member of association (1 = yes, 0 = otherwise)

$X_9$  = Quantity of birds (number)

$X_{10}$  = Extension agent (1 = yes, 0 = otherwise)

$X_{11}$  = Labour input (hours)

$X_{12}$  = Type of labour used (manday)

$X_{13}$  = Price per create (naira)

$U$  = Error term.

**RESULTS AND DISCUSSION**

**Table 1: Socio-Economic Characteristics of the Respondents**

Variables	Frequency	Percentage	Cumulative Percentage
<b>Gender</b>			
Male	66	82.5	82.5
Female	14	17.5	100.0

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<b>Age Group (years)</b>			
20 – 30	3	3.8	3.8
31 – 40	29	36.3	40.0
41 – 50	36	45.0	85.0
51 – 60	12	15.0	100.0
<b>Religion</b>			
Christian	61	76.3	76.3
Muslim	19	23.8	100.0
<b>Marital Status</b>			
Single	11	13.8	13.8
Married	68	85.0	98.8
Divorced	1	1.3	100.0
<b>Educational Level</b>			
Primary	13	16.3	16.3
Secondary	24	30.0	46.3
Tertiary	32	40.0	86.3
No formal education	11	13.8	100.0
<b>Household Size (person)</b>			
1 – 3	22	27.5	27.5
4 – 6	50	62.5	90.0
7 – 9	8	10.0	100.0
<b>Main Occupation</b>			
Farming	34	57.6	57.6
Non-farming	46	42.5	100.0
<b>Other Occupation</b>			
Trading	43	53.75	53.75
Artisanship	11	13.75	67.50
Civil servant	26	32.50	100.0
<b>Experience (years)</b>			
1 -5	53	66.3	66.3
6 – 10	27	33.8	100.0
<b>Farm Size (hectares)</b>			
0.03	54	67.5	67.5
0.06	26	32.5	100.0
<b>Loan Applied For (₦)</b>			
0 – 50,000	53	66.2	66.2
55,000 – 100,000	1	1.3	67.5
105,000 – 200,000	25	31.2	98.7
205,000 – 300,000	1	1.3	100.0
<b>Loan Received</b>			
0 – 50,000	53	66.2	66.2
55,000 – 100,000	1	1.3	67.5
105,000 – 200,000	25	31.2	98.7
205,000 – 300,000	1	1.3	100.0
<b>Loan Repaid (₦)</b>			
0 – 50,000	53	66.2	66.2
55,000 – 100,000	1	1.3	67.5
105,000 – 200,000	25	31.2	98.7
205,000 – 300,000	1	1.3	100.0
<b>Interest Paid (₦)</b>			
0 – 20,000	56	70.0	70.0
25,000 – 30,000	1	1.3	71.3
35,000 – 40,000	13	16.3	87.6
45,000 – 50,000	9	11.3	98.7
55,000 above	1	1.3	100.0
<b>Membership of Association</b>			
Yes	71	88.8	88.8
No	9	11.3	100.0
<b>Total</b>	<b>80</b>	<b>100.0</b>	

Source: Field Survey, 2020

## 1. Socio-Economic Characteristics of the Respondents

Gender is the division of people into various categories such as male and female which may determine the ability to perform some physical work. It is a popular belief that men make good use of time or energy in farming than women. Perhaps, this is because they can handle more tedious work than their female counterparts this is in fact the basis for analyzing the gender of the poultry farmers. Table 1 revealed that majority of the poultry farmers in the study area were male representing 82.5% of the respondents while the female were the minority poultry farmers representing 17.5%. The study implies that men venture more in poultry farming than women.

Age is an important determinant of productivity. The ability of the respondents to take advantage of emerging opportunities that could change their live for better may have negative relationship with age baring education and experience. It could be seen that the poultry farmers are in their active years (i.e. 31 – 50 years). This implies that majority poultry farmers were adults and can make meaningful impact in income generation when adequately motivated with needed loan facilities.

Religion is a particular system of faith and worship or any practice to which someone or some group of people are seriously devoted. The finding revealed that Christian worshippers have 76.3% and Muslim worshippers have 23.8%. This implies that the most practice religion in the study area is Christianity.

Marital status of the respondent may determine the household size of the respondents and it may have effect on the family labour, income, consumption and savings pattern. The presentation of the distribution of respondents by marital status shows that most poultry farmers in the study area are married. Married poultry farmers are accounted to be 85%, while other categories shared 15.1% respectively. This implies that most of the poultry egg producers in the study area are married and have social and family responsibilities which make them to crave for more income through poultry-egg production.

Education can indirectly determine the decision of household heads as regards consumptions and savings because education is of great importance in making decision. The results revealed that most of the respondents have formal education; even 40% of the respondents had education up to tertiary level, while only 13.8% had no formal education respectively. This implies that knowledge acquired would be used to improve the level of production and ultimately increase their income generation through it.

Household size is the number of people eating from the same pot. Household size of farmers especially in rural settings may determine the family labour at the household arrangement. Household size is often believed to have a positive influence base on availability of family labour. Majority 62.5% of the poultry farmers had between 4 – 6 persons as household members and 7 – 9 persons had 10.0% as household size member respectively. This implies that the more the household size increases, the more the need for more income to cater for the needs of the family through egg production.

The study revealed that the main occupation of poultry farmers in the study area is farming with 57.6%. This implies that the respondents (poultry farmer) predominantly engaged themselves in farming activities as main occupation while non-farming has 42.5%. This implies that 57.6% are fully into poultry farming business.

Farming experience is an important determination of efficiency in poultry production. The result indicates that poultry farmers with 66.3% had 1 – 5 years experience while 33.8% of the poultry farmers had 6 – 10 years experience respectively. This implies that increase in poultry farming experience will increase the egg production output. Size of land, if well utilized, also enhances the production of the poultry farmers. Majority of the respondents (67.5%) have 0.03 hectare of land for poultry house.

Loan provides the opportunity for farmers to earn more money and improve on their standard of living. The result in Table 1 revealed that 66.2% of the poultry farmers applied for 0 – 50,000 Naira, while 1.3% applied for 55,000 – 100,000 Naira, 31.2% applied for 105,000 – 200,000 Naira and 1.3% applied for 205,000 – 300,000 Naira. This implies that 0 – 50,000 Naira has the largest percentage which the poultry farmers applied for. Since loan is considered essential to the process of improving agricultural transformation of the rural economy. The introduction of easy and cheap loan is the quickest way for boosting poultry production.

Loan repaid by the poultry farmers ranges by different percentage base on the amount of money collected. The percentage of 0 – 50,000 Naira is 66.2%, while 55,000 – 100,000 Naira has the percentage of

1.3%, 105,000 – 200,000 Naira has 31.2%, and the percentage of 205,000 – 300,000 Naira is 1.3% respectively. This implies that the poultry egg producers were able to repay the amount they received.

The interest paid by the poultry farmers differ based on the amount each of them collected and the duration each of them are given to pay back. The result showed that 0 – 20,000 Naira has the percentage of 70.0%, the percentage of 25,000 – 30,000 Naira has 1.3%, 35,000 – 40,000 Naira has 16.3%, while 45,000 – 50,000 Naira has 11.3% and 55,000 Naira above has 1.3% respectively. This implies 0-20,000 is the highest interest rate of the money received.

An association is a group of people coming together for a common purpose. Being a member of association also is one of the criteria if one will be granted loan or not. The findings revealed that 88.8% belong to an association while 11.3% does not belong to an association. This implies that most of the poultry farmers belong to an association while few do not belong to any association, which will hinder them from having access to agricultural loan for their production.

## 2. Level of Accessibility to Loan Facilities among Poultry Egg Producers.

Logit regression analysis was used to examine the factors that determine the level of accessibility to loan by the poultry egg producers.

**[X<sub>1</sub>] Age of the respondents:** The age co-efficient of the output function was a negative variable though significant. The negative value shows direct relationship with output. The implication of the findings is that increase or decrease in age does not necessarily means accessibility to loan facilities.

**[X<sub>2</sub>] Gender of the respondents:** The gender co-efficient of the output function was a negative variable though significant. The negative value shows the direct output, the implication of the findings is that either male or female everyone has access to loan.

**[X<sub>3</sub>] Household size:** The household size co-efficient of the output function was a negative variable though not significant. The negative value shows the direct relationship with output and the implication of the findings is that household size does not determine access to loan facilities; but increase in it can increase curiosity for more loan for family survival.

**[X<sub>4</sub>] Educational attainment:** The educational attainment co-efficient of the output function was negative variable though not significant. The implication of this is that educational attainment does not really determine the access to loan facilities because some uneducated farmers have other means of getting the loan.

**[X<sub>5</sub>] Loan applied:** The loan applied co-efficient of the output function was a negative variable though significant at 1%. The negative variable implies that loan may be applied for and not yet granted.

**[X<sub>6</sub>] Loan received:** The loan received co-efficient of the output function was a positive variable and statistically significant at 1%. Hence, consistent with a priori expectations. It implies that as more funds are expended on the farmers, so does it increase in egg production.

**[X<sub>7</sub>] Loan repaid:** The loan repaid co-efficient of the output function was a positive variable and statistically significant at 1%, hence consistent with a priori expectations. It implies that the more the interest paid by the farmers, shows there is an increase in the income of the egg producers.

**[X<sub>8</sub>] Interest paid:** The interest paid co-efficient of the output function was a negative variable though not significant. This implies that interest paid does not determine access to loan facilities by the egg producers and interest can only be paid after the loan has been collected.

**[X<sub>9</sub>] Member of Association:** The member of association co-efficient of the output function was a positive variable and significant at 1%. This implies that every egg producer must belong to an association before they can have access to loan facilities and it also helps such individual to access the loan quicker and easier.

**[X<sub>10</sub>] Years of experience:** The years of experience co-efficient of the output function was a positive variable and statistically significant hence, consistent with a priori expectations. It implies that as more years of experience in poultry egg production, the more the chances of increase in egg production which may lead to increase in standard of living.

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**Table 2: Shows The Level of Accessibility to Loan Facilities by the Poultry Farmers.**

Variable code	Variable name	Co-efficient	Standard error	P[ Z >Z
Constant	-	0.7628547563 (2.844)	0.26827871	0.0045
X <sub>1</sub>	Age	-0.1797632123E-02 (-0.207)	0.86678281E-02	0.8357 ***
X <sub>2</sub>	Gender	-0.1221339995 (- 1.648)	0.74119978E-01	0.994***
X <sub>3</sub>	Household size	-0.1627834702E-01 (-0.735)	0.22150462E-01	0.4624
X <sub>4</sub>	Educational attainment	-0.7936976005E-01 (-2.597)	0.30563726E-01	0.0094
X <sub>5</sub>	Loan applied	-0.6683371268E-06 (-0.248)	0.2149651571E-04 (4.124)	0.8039***
X <sub>6</sub>	Loan received	0.4678406702E-04 (0.417)	0.26911382E-05	
X <sub>7</sub>	Loan repaid	-0.7856043646E-04 (-4.540)	0.52127030E-05	0.0000
X <sub>8</sub>	Interest paid	0.4883283417 (5.586)	0.11216349E-06	0.6766 ***
X <sub>9</sub>	Member of association	0.3367519503E-02 (0.289)	0.17303329E-04	0.0000
X <sub>10</sub>	Years of experience		0.87413505E-01	0.999***
			0.11665106E-01	0.7728***

\*\*\* Significant at 1%, \*\* Significant at 5%, \* Significant at 10%,

Figures in parenthesis are |b/St.Er, Chi – squared (56.27368), Degree of freedom (10), Log likelihood - .1360689E-11; Restricted log likelihood – 28.13684, Dependent variable Y<sub>1</sub> credit use decision of ith poultry egg producers .Source: Field Survey, 2020

### 3. Effect of Loan on Poultry Egg Production

The summary of the parameter estimates for the factors of effect of loan on poultry egg production is presented in Table 3.

**[X<sub>1</sub>] Gender:** The result shows that gender has a positive coefficient though not significant. It indicated by the coefficient 0.572. This shows that there is a positive relationship between loan received and its effect on poultry egg production. This implies that although gender is important in the production of poultry eggs because male have the capacity to produce more due to their masculine nature than female.

**[X<sub>2</sub>] Age of the Farmer:** From the result, age of the respondents is negative but has significant effect of loan on poultry egg production. It indicated by the coefficient -0.062 though significant at 10%. This shows that there is a negative relationship between age of the farmer and the effect of loan on poultry egg production. this implies that farmers in their active age have the ability to produce more.

**[X<sub>3</sub>] Educational Attainment:** Educational attainment has a positive coefficient and it statistically significant at 1%. It indicated by the coefficient 0.142. This implies that there is a positive relationship between educational attainment and effect of loan on egg production. This result satisfied the prior expectation. Increase in the educational attainment of the poultry farmers will lead to increase in the production of eggs due to exposure to modern management technique.

**[X<sub>4</sub>] Size of Land:** Size of land has a negative coefficient and significant. It indicated by the coefficient - 0.021 though significant at 5%. This implies that there is a negative relationship between size of land and effect of loan on poultry egg production.

**[X<sub>5</sub>] Loan Received:** From the findings of loan received on effect of loan on poultry egg production is positive and significant, and it is significant at 10%, related to loan received as shown by the coefficient of

0.116. This implies that there is a positive relationship between loan received and its effect on poultry egg production. This result satisfied the priori expectations because the more the loan received the more the expansion in production of egg.

**[X<sub>6</sub>] Interest Paid:** From the result, it reveals that interest paid has a positive coefficient though not significant. It indicated by the coefficient 0.186. This implies that there is a positive relationship between interest paid and effect of loan on poultry egg production. This result satisfied the prior expectations because the more the egg produced the more the poultry farmers are able to pay back with interest.

**[X<sub>7</sub>] Member of Association:** Member of association has a positive coefficient and statistically significant. It indicated by the coefficient 0.085 and significant at 10%. This implies that there is a positive relationship between member of association and effect of loan on poultry egg production. This result satisfied the prior expectation every farmer must belong to an association before loan is granted.

**[X<sub>8</sub>] Quantity of Birds:** The quantity of birds coefficient is positive and statistically significant. It has a coefficient of 0.060 though significant at 10%. It implies that quantity of birds has a positive relationship with egg production. The results satisfy prior expectation the more the birds the more the eggs available for sales.

**[X<sub>9</sub>] Extension Agent:** The extension agent coefficient is positive and statistically significant. It has a coefficient of 0.008 though significant at 1%. It implies that extension agent has a positive relationship with effect of loan on poultry egg production. It implies that extension agent impact more knowledge on the farmers especially on how to utilize the loan given which may enhance increase in egg production.

**[X<sub>10</sub>] Price of each Bird:** From the findings of price of each bird on effect of loan on poultry egg production is positive though not significant. related to price of each bird as shown by the coefficient of 0.225. This implies that the loan giving determines the amount of birds bought for egg production, the more the birds bought the increase in egg production.

**[X<sub>11</sub>] Labour Input:** From the result revealed, the labour input on effect loan on poultry egg production is positive though not significant, related to labour input as shown by the coefficient of 0.205. This implies that increase in labour input leads to increase in egg production.

**[X<sub>12</sub>] Labour used in Production:** From the findings, the labour used in production on effect of loan on poultry production is positive though statistically significant, labour used in production has coefficient of 0.105 it is significant at 10%. This implies that type of labour used in production has a positive relationship with egg production by the poultry farmers.

**[X<sub>13</sub>] Price per create:** The price per create coefficient has a positive coefficient, and statistically significant. It has a coefficient of 0.027 and significant at 5%. this implies that price per create has a positive relationship with effect of loan on poultry egg production which means the loan granted to the farmer has impact on egg production which determine the price per create of egg.

**Table 3: Effect of Loan on Poultry Egg Production in the Study Area**

Variable code	Variable name	Co-efficient	Standard error
Constant	-	-	4.874
X <sub>1</sub>	Gender	(-0.823) 0.572 (0.798)	0.000
X <sub>2</sub>	Age of the farmer	-0.062* (-0.877)	0.073
X <sub>3</sub>	Educational attainment	0.142***	1.389
X <sub>4</sub>	Size of land	(3.189) -0.021**	33.153
X <sub>5</sub>	Loan received	(-0.302) 0.116*	1.158
X <sub>6</sub>	Interest paid	(1.771) 0.186	0.000
X <sub>7</sub>	Member of association	(0.259) 0.085*	0.544
X <sub>8</sub>	Quantity of birds	(1.147) 0.060*	0.000
	Extension agent	(0.862)	

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X <sub>9</sub>	Price of each bird purchased	0.008*** (0.102)	0.268
X <sub>10</sub>	Labour input	0.225 (1.778)	0.001
X <sub>11</sub>	Labour used in production	0.205 (3.118)	0.466
X <sub>12</sub>	Price per create	0.105* (1.485)	0.965
X <sub>13</sub>	R-squared	0.027 (0.270)	0.002
	R-squared adjusted	0.786	
	F – ratio	0.740 17.091	

\*\*\*Significant at 1%, \*\* Significant at 5%, \* Significant at 10%, Figures in parenthesis are t-value, R-squared 0.786, R-squared adjusted 0.740, F-ratio 17.091. Source: Field Survey, 2020

### Problems Encountered During Production

From the Table 4, the result revealed that 48.8% of the respondents faced the problem of inadequate fund and capital, 1.3% of the poultry farmer faced the problem of pilferage and theft, 15.0% face the problem of diseases, 33.8% faced the problem of unbearable cost of feeding, while 1.3% faced the problem of unstable power supply adequately. This shows that poultry farmers faced the problem of inadequate fund and capital mostly in the study area which affect the farmers and causes low income of the farmers.

**Table 4: Problems Encountered by the Poultry Farmers**

Problem Encountered	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Inadequate fund and capital	39	48.8	41	51.3
Pilferage and Theft	1	1.3	79	98.8
Diseases	12	15.0	68	85.0
Unbearable cost of feeding	27	33.8	53	66.3
Unstable power supply	1	1.3	79	98.8
Total	80	100.0	80	100.0

Source: Field Survey 2020

### CONCLUSION

Arising from the findings of the study, it is concluded that loan obtained by poultry egg producers affect significantly their egg production output. Majority of the poultry farmers were male, married, had their age less than 51 years, possessed one form formal education or the other, had 4 – 6 person as household size, engaged in farming activities as their main occupation and had less than 6 years experience in poultry farming. Cooperative societies top the list of non- personal source of finance being used in funding the poultry farming business. Gender, interest paid, , member of association, extension agent, labour used in production, price of each birds are positive but do not significantly influence egg production of poultry farmers in the study area.

The poultry farmers in the study area predominantly engaged in trading as other occupation, Experience of the farmers is positive and significant at 5%, the more the experience of the farmers would increase the income in poultry egg production. Sizes of eggs is significant and it is positively significant at 1% the more the bigger the size of eggs produced, the more attractive it becomes to the consumer and it would lead to increase in the income of the farmer. Quantity of egg sold is positively significant at 5%, the more the egg sold, the more the income earned by the farmers

### RECOMMENDATIONS

Recommendations arising from the conclusions of the study are given below;

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- (i) Government should provide equitable loan facilities to all the poultry farmers and this will enhance the growth and development of the poultry farms and will also increase their rural livelihood.
- (ii) Government should address the problem of unstable power supply which has almost crippled the real sector (including poultry farming) of the economy and become national embarrassment.
- (iii) Government and local leaders could reduce the problem of pilferage and theft by providing effective security.
- (iv) Stock birds should be purchased in well known reputable farm where their birds are resistance to diseases. Farmers should maintain proper daily and routine practices on their farm; this tends to reduce disease outbreak and increase production and income to farmers.
- (v) Proper vaccine programme administration will help the poultry farmers in the study area to increase egg production.

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