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IMPACT OF MICRO-CREDIT FACILITIES ON POULTRY PRODUCTION IN YEWA DIVISION OF OGUN STATE, NIGERIA

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Abstract

The study examined the impact of micro-credit facilities on poultry production in Yewa Division, Ogun State, Nigeria. The study described the socio-economic characteristics of poultry farmers, identified the various micro-credit available to the farmers, analyzed the profitability level of the poultry business and the factors affecting amount of credit obtained. One hundred and twenty (120) respondents were randomly selected for the study. The methods of data analysis included descriptive statistics such as tables, mean and percentages. Budgeting technique, which yielded net farm income and regression models were used. The result from the study revealed that 50.8% of the poultry farmers were female who in terms of age, 95.8% of the respondents were aged 60 years and below while the study also revealed that 55.0% of the farmers were married as expected. The study also revealed 90.0% of the poultry farmers possessed some form of formal education, which is predominantly at the secondary and/or tertiary level. The result on profitability shows that poultry production in the study area is viable and profitable with an average net farm income of N63,519.57 and benefit cost ratio of 1.22% while return on investment was also 0.22% which implies that for every N10 invested in poultry farming there is an expected return on N22 to earn from the business. The determinants of credit obtained are age, family size, sex and interest on loan. For high production and profitability, it is recommended that effective agricultural policies and programmes should focus on how to improve farmers' access to credit and low interest rates on loans obtained so as to increase net farm income of the poultry farmers.

Key Words: Micro-credit, Micro-finance, Profitability, Poultry Production

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Introduction

It is interesting though disturbing to note that Sub Saharan Africa (SSA) with its very large population happens to be the poorest region in the world. The failure of growth over the long term has resulted in high levels of poverty in the region, such that in 2008, 47% of the population of SSA lived on \$1.25 a day or less (Gibson et al., 2017). The United Nations Food and Agriculture Organization (UN-FAO) estimates that 239 million people in SSA were hungry/undernourished in 2010. This implies that almost one in three people who live in SSA were hungry, far more than any other region of the world, with the exception of South Asia. Poverty has been reported as the principal cause of hunger.

In Nigeria, before and immediately after independence, agriculture was the main-stay of the economy (Akangbe *et al.*, 2012). However, its contribution to the economy has been declining since the oil boom of the 1970's. Toluwase and Akpata (2013) reported that agriculture in the post independent years was the main stay of the Nigeria economy but suffered neglect due to the oil boom of the 1970's. According to Zhang (2012) Agriculture continues to be the mainstay of developing economies and predominant source of livelihood for people in Nigeria in particular.

Livestock/poultry is one of the most important agricultural sectors serving as 'safety net' providing ready cash in emergency needs as well as an important source of protein for consumers. Its role in rural livelihoods and food security is enormous. Poultry meat and Eggs play a very useful role in bridging the protein gap in Nigeria. The poultry industry plays important roles in the development of Nigerian economy. It is a major source of eggs and meat which have a high

nutritional value particularly in the supply of protein. Eggs are also important in the preparation of confectionary and vaccines. The poultry industry also provides employment opportunities for the populace, thereby serving as a source of income to the people (Tibi and Adaigho, 2015).

Nigeria, like many other developing countries suffers from protein deficiency compounded as a result of rapid population growth, low productivity in the agricultural sector, rural urban migration, and decline in productivity of the livestock sub-sector (Girei et al., 2018). In same vein Gibson et al. (2017) also asserted that apart from Nigeria's agriculture not meeting up in its food production to meet the food requirement of the increasing population, its greatest problem is that of inadequate animal protein in the diet of a large proportion of the population especially in the rural areas which constitutes over 70% of the Nigeria population. Hence the significance of poultry and livestock in general for sustainable food production and fostering of widespread provision of animal protein cannot be over emphasized. It is therefore clear that much needs to be done to accelerate transformation the commercial poultry husbandry and sustain the interest of present and intending modem poultry farmers in Nigeria.

The role of poultry industry in terms of its contribution to the provision of animal proteins cannot be over-emphasized. As reported by Ojo, (2013) when compared to beef industry poultry enjoys a relative advantage of ease of management, higher turnover, quick returns to capital investment and wider acceptance of its product for human consumption. The poultry industry is very important to the Nigerian economy because it provides a

good source of animal protein in the form of meat and eggs. Proteins play important roles in the formation of a balanced human diet which is essential for the good health, vigour, and productive capacity of the people. The Poultry egg industry, apart from providing employment as a source of livelihood to thousands of people in Nigeria, the egg is a complete protein with excellent quality; one egg will give 6grams of protein.

Egg production in Nigeria has been affected by the unstable trends in the economy. The problems of the industry make it very difficult for expansion and new producers find it hard to join the business. Such problems include the high cost of feed, outbreaks of diseases, and marketing problems. This situation has forced many small-scale poultry farms to close down and those still managing to survive are producing at very high cost with serious input limitations (Girei et al., 2018). These problems could eradicated with the provision of credit to the poultry farmers.

Credit institutions can be categorized into three groups. The first one is regarded as formal, such as commercial banks, microfinance banks, Nigeria the Agricultural and Cooperative Rural Development Bank (NACRDB), and state government-owned credit institutions. The second is semiformal, such as nongovernmental organizations microfinance institutions (NGO-MFIs) and cooperative societies. The third is informal, such as money lenders, and Rotating Savings and Credit Associations (RoSCAs). Enhancing Financial Innovation and Access EFInA (2008) noted that 23% of the adult population in Nigeria has access to formal financial institutions, 24% to informal financial services, while 53% are financially excluded (Badiru, 2010). The rural financial market in Nigeria covers the formal banks, credit unions, non-governmental institutions, self-help groups and private lenders.

Micro-credit is helpful as it creates scope for further investment and helps the poor and lower income group to get funds for their business. Micro-credit or known micro-lending is defined as extremely small loan given to impoverished people to help them become self-employed. Micro-credit was given to the poor individuals for income generating activities that will improve the borrower's living standards. The loan characteristics are too small, short-term (a year or less), no collateral required, weekly repayment, poor borrowers and mostly those that are not qualified for a conventional bank loan (Nawai and Sharrif, 2010).

agricultural practice to meaningful, one of the enabling factors is addressed by availability of adequate credit to finance agricultural production. The agricultural lending market in any country is made up of the participating financial institutions and units that can effectively lend resources to facilitate the production and marketing of farm produce, crops and livestock (Adetiloye, 2012). The lack of bank accounts, collateral, and information regarding the procedure for accessing credits from banks limit rural people's access to credit from formal institutions. Loan default could limit access to credit and the complex mechanism of commercial banking is least understood by the smallscale farmers, and thus limits their access.

The limitations on imperfect and costly information problems encountered in the financial markets, credit rationing policy and banks' perception of agricultural credit as a highly risky venture; while high

interest rate and the short-term nature of loans with fixed repayment periods do not suit annual farm produce, and thus constitute a hindrance to credit access. The location of banks in urban centers is also a limiting factor. Financial lending Institutions in Nigeria often shy away from giving loans to farming households because of the high cost of administering such loans and the perceived high default rates among farming households (Badiru, 2010; Oladejo, 2015).

Over the years, there has been a clarion call to improve the nutritional status of developing countries, through protein intake especially animal protein. Production of poultry egg products in Nigeria has not been able to meet with the demand of her increasing population (Olaniyi et al., 2008). There are assertions that the poultry enterprise is locally not profitable. The costs incurred production may be too high and hence the

enterprises are not profitable. There is dearth of knowledge and hence, the basis for this study.

Objectives of the Study

The main objective of the study is to determine the effect of Micro-credit Facilities on Poultry Production in Yewa Division of Ogun State, Nigeria. The specific objectives of the study are to:

- i. describe the socio-economic characteristics of the Poultry farmers;
- ii. identify the various micro-credits available in the study area;
- iii. examine the profitability level of the poultry business in the study area;
- iv. determine the effect of credit available on the business performance of the poultry farmer; and
- v. elicit the factors affecting amount of credit obtained in the study area.

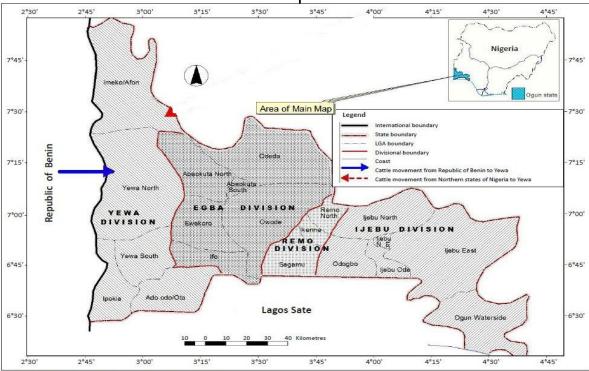


Fig. 1: Map of Ogun State showing the study area

Sources and Methods of Data Collection

Personal interview was used to elicit data from respondents using structured questionnaires as interview guide. Primary data were collected on socioeconomic characteristics of poultry (egg) farmers, poultry production data (such as resources used, costs, returns, prices, number of eggs harvested per day, feeding cost, vaccination, access to and use of credit among others and secondary data were obtained from journals statistical bulletins and reports.

Sample Size and Sampling Technique

The population for this study comprises poultry farmers in the Yewa Division of Ogun State. Multistage sampling method was used to select 120 sampled respondents from the study area for interviewing by randomly selecting two (2) (Yewa North and Yewa South) Local Government Areas. Secondly, five (5) towns were selected from each Local Government Area to make a total of ten (10) towns to be sampled, and lastly, twelve (12) poultry farmers were sampled from each community to make the total sample of 120 respondents for the study.

Methods of Data Analysis

Descriptive and inferential statistics were used in the analysis of data.

(i) Socio-economic characteristics of the Poultry farmers

Descriptive statistical tools such as frequency table, measures of central tendency and measures of dispersion were used to describe the socio-economic characteristics of the respondents

(ii) Various micro-credits available in the study area

Descriptive statistical tools such as frequency table, measures of central tendency and measures of dispersion were used to identify the various micro-credits available in the study area;

(iii) Profitability level of the poultry business

Budgetary analysis was used to examine the profitability level of the poultry business which is stated as:

NFI = TR - TC

TC = TFC + TVC

Where:

TR = Total revenue from the enterprise (Naira)

TVC = Total Variable Cost from enterprise (Naira)

TFC = Total Fixed Cost of enterprise (Naira)

TC = Total Cost of Enterprise (Naira)

NFI = Net Farm Income (Naira)

Profitability ratio such as Benefit-Cost Ratio, Return on investment were used to analyze profitability and viability of the poultry business.

BCR = TR/TC

Where:

BCR = Benefit Cost Ratio

TR = Total Revenue

TC = Total Cost

Return on Investment (ROI) =

Profit/Total Cost

(iv) Effect of credit available on the business performance of the poultry farmer

The effect of credit availability on the business performance of the poultry farmers was analyzed using exponential regression model. The implicit form of the model is expressed as follows:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, e).$$

While the explicit model is specified as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \varepsilon$$

Where:

lnY = Net Farm Income ()

 $X_1, X_2,...,X_9$ are independent variables.

 X_1 = Proportion of loan used by poultry farmers for expansion of business ($\frac{N}{2}$).

 X_2 = Family size (Number of person)

 X_3 = Poultry farming experience (years)

 $X_4 = Sex (1 = male; 0 otherwise)$

 X_5 = Loan repayment period (months)

 X_6 = Amount of loan obtain (\mathbb{N})

 X_7 = Years of formal education (years)

 X_8 = Interest on loan (%)

 X_9 = Number of workers/employees

 β_0 = Constant or intercept

 β_1 , $to\beta_{10}$ are coefficients attached to each of the independent variable.

(v) Factors affecting amount of credit obtained in the study area

Linear regression method was used to determine the factors affecting amount of credit obtained in the study area. The regression analysis is expatiated below:

$$Y = f(X_1, X_2, ..., X_8)$$

Where:

Y = Volume of credit (N)

 $X_1, X_2, ..., X_7$ are independent variables.

 $X_1 = Age (years)$

 X_2 = Family size (Number of person)

 X_3 = Poultry farming experience (years)

 $X_4 = Sex (1 = female; 0 = male)$

 X_5 = Interest on loan (%)

 X_6 = Years of formal education (years)

 X_7 = Loan repayment period (months)

 β_0 = Constant or intercept

 β_1 , $to\beta_8$ are coefficients attached to each of the independent variable.

Results and Discussion

Table 1: Socio-Economic Characteristics of Respondents

Variables	Frequency	Percentage	Average
Sex			
Male	59	49.2	
Female	61	50.8	
Age (years)			
≤ 30	15	12.5	42.92 years
31-40	45	37.5	
41-50	34	28.3	
51-60	21	17.5	
>60	5	4.2	
Marital Status			
Single	35	29.2	
Married	66	55.0	
Divorce	8	6.7	
Widow	11	9.1	
Educational Level			
No formal education	12	10.0	
Primary education	29	24.2	
Secondary education	31	25.8	
Tertiary education	48	40.0	
Households Size (person	ıs)		
1-3	26	21.7	5 persons
4-6	64	53.3	<u>-</u>
7-9	15	12.5	
10-12	15	12.5	
Poultry Farming			
Experience (years)			
1-5	72	60.0	7.07 years
6-10	27	22.5	•
11-15	7	5.8	
>15	9	11.7	
Cooperative Membershi	ip		
Yes	74	61.7	
No	46	38.3	
TOTAL	120	100	

Socio-Economic Characteristics of the Respondents

The general characteristics of the selected respondents were based on socio-economic aspects of the communities in the study area. The characteristics of the respondents included age, sex, education level, household size, farming experience and marital status all indicated in Table 1. These variables were conceptualized as

very important because they influence one's decision making and control over resources. Moreover they show relationships among gender groups, the level of understanding and commitment of resources into various economic activities.

Sex is one of the important components in the development process. The findings revealed that majority (50.8%) of the respondents involved in poultry

production were females while the percentage of male poultry farmers was (49.2%). This provides implication that the males in the study area did not consider poultry farming as an important activity whereas females considered poultry farming as an important source of income. According to ILO (2000), the majority of women in developing countries are neglected in resources ownership and poultry farming is still observed as an inferior source of income for most males.

The age of the farmers was broken down into ranges and the farmers were grouped according to their age range. The result of the analysis indicated that 95.8% of the farmers were below 60 years of age while the average age was 42.9 years. This implies that these farmers were within the active working age bracket. Again 30% of these farmers were 40 years old and below. These are particularly young people who could afford to venture into the poultry business which is known to be characterized by risks such as disease, fire outbreak and theft.

The result revealed the marital status of the respondents. This status distributed the respondents into groups of married, single and divorce. Findings further showed that most of the respondents (55.0%) were married, while few (29.2%) were single. This indicates that most of the women were in association with male counterparts which has socio- economic implication on their finances and as result they sought more income through poultry production so as to cater for their family.

Data in Table 1 presented the educational level distribution of the respondents as analyzed. The result revealed that about 10.0% of the poultry farmers had no formal education while 50.0% had up to secondary school

education on the whole, poultry farmers need to have good education on poultry keeping so that they are able to properly harness all available resource to the advantage of production process. With this, the level of production per poultry farm will increase. Knowledge about the latest research efforts in the affect and the prevention of communicable disease such as avian influenza is necessary for effective performance and increased productivity of the poultry industry.

Findings revealed that majority 87.5% of the poultry farmers had up to 9 members. household The average household member was however 5 persons. This implies that the poultry farm operators in the study area generally had a fairly large family size. The family might be exploited as cheap source of labour for the poultry farms. However, large family size might be a drain for business profit, as household expenditure, particularly on consumption, is high. This basically explains why most small-scale farms close down when they could no longer provide the required funds for their smooth operation.

result of poultry The farming experience of the respondents showed that about 82.5% of the poultry farm operators had up to 10 years poultry keeping experience while the average period of poultry keeping experience was 7 years. Expectedly, the more the numbers of years of experience in poultry keeping, the better the ability to manage the poultry business well. Case of disease attack, fire outbreaks, poor feed quality and pilferage should be better handled by experienced poultry farmers. With better handling of production resource in poultry, there should be a higher level of production in the poultry farmers.

The cooperative membership status of the poultry farmers was analysed and result indicated the most of the poultry farmers in the study area are members of cooperative societies. The result revealed that majority (61.7%) of the poultry farmers in the study area were members of cooperative societies. This implies that the poultry farmers will have access to cooperative credit which may help increase the level of productivity of the farmer. The essence of co-operative is to

help the members financially and educationally.

Various Micro-Credits Available in the Study Area

Data in Table 2 showed the sources of micro-credit available to the poultry farmers in the study area. The sources of micro-credit identified were analysed and grouped into formal and informal source. Majority (79.2%) of the farmers' sourced for micro-credit from formal credit institutions while 20.8% used informal sources.

Table 2: Micro-Credits Distribution of the Poultry Farmers

Constraints	Frequency (120)	Percentage (%)
Commercial bank	14	11.7
Micro finance bank	2	1.7
Cooperative association	75	62.5
Community bank	4	3.3
Formal source (Total)	95	79.2
Family and friends	16	13.3
Savings and revolving	9	7.5
Informal sources (Total)	25	20.8

Profitability Level of the Poultry Business

The profitability level of poultry farmer was analyzed and presented in Table 3. This showed that variable cost items summed to 95.22% of the cost and fixed cost accounted for 4.78% of the total cost of production. The mean total revenue was \$\text{\text{N}}\)344,768.33 while the total cost of production amounted to \$\text{\text{\text{N}}}\)281,248.76

making for an average net farm income of №63,519.57. Findings revealed the benefit cost ratio of poultry production in the study area which was 1.22% which means poultry farming is a viable business and return on investment was also 0.22% which implies that for every №100 invested in poultry farming there is an expected return on №22 to earn from the business.

Table 3: Profitability Level of Poultry Business

Items	Mean Amount (N)	Percentage
Variable Costs		
Chick mash	90,257.54	32.09
Grower mash	77,545.00	27.57
Layer mash	78,747.08	28.00
Feed addictive	4,683.50	1.67
Family labour	1,250.00	0.44
Hired labour	1,839.16	0.65
Transportation	2,329.16	0.83
Vet services	6,755.85	2.40
Water	1,558.50	0.55
Electricity	641.66	0.23
Chemical	2,209.15	0.79
Total Variable Cost	267,816.64	95.22
Fixed costs		
Water trough	1,562.54	0.56
Feed trough	1,752.74	0.62
Egg tray	2,123.64	0.76
Pens and cages	7,993.20	2.84
Total Fixed Cost	13,432.12	4.78
Total Cost (TVC+TFC)	28,1248.76	
Revenue		
Egg sales	26,148.33	
Bird sales	318,620.00	
Total revenue	344,768.33	
Net Income	63,519.57	
Benefit Cost Ratio (Tr/Tc)	1.22	
Return on Investment (Ni/Tc)	0.22	

These results agree with the findings of Emokaro *et al.* (2009), who reported that variable inputs accounted for most of the cost incurred in farming, although Ekunwe and Sorenigun (2007), in a separate study on poultry egg production, reported a slightly lower value of about 60% total variable cost.

Effect of Credit Available on the Business Performance of the Poultry Farmer

The exponential regression model was used to analyze the effect of credit available on business performance of poultry farmers. The result is presented in Table 4 and it showed the coefficient of determination (R²) was 0.552 implying

that about 55.2% variation in net farm income was influenced by the explanatory variables included in the model. The F-value was 6.632 and significant at 1% level, showing the joint effects of the explanatory variables on the dependent variable (Net farm income). The coefficient of amount of loan obtained had positive coefficient and significant at 1% level. This implies that the higher the amount of loan obtained, the higher the output of the poultry farmer which in turn increases the net farm income, because farmers used the fund to increase the flock size of their farms.

Similarly, educational level and number of workers employed have positive coefficient and significant at 10% and 5% level, respectively. It is expected that the higher level of education will contribute significantly to decision making of a farmer. Exposure to high level of education is an added advantage in terms of achieving huge output and profit, efficient marketing and sustainable poultry egg production (Esiobu et al., 2014). This finding supports Onubuogu et al. (2014) who higher level of education determines the quality of skills of farmers, their technical and allocative abilities. efficiency and how well they are informed of the innovations and technologies around them. Accordingly, the larger the number of workers, the more the output on the farm which in turn influence the net farm income. The result is in line with the finding of Amos (2006) and Adewuyi *et al.* (2009) who reported that socioeconomic characteristics have significant influence on the output in poultry enterprise. However, the coefficient of interest on loan had a negative impact on farm income and significant at 1% level. The implication is that an increase in the interest on the amount of loan obtained will bring about a decrease in net farm income of the poultry farmers in the study area.

Table 4: Regression Result on Effect of Credit on Business Performance

Variables	Coefficient	Standard error	T-value
(Constant)	10.962	0.508	21.589***
Proportion of loan used for expansion of business (X_1)	0.000	0.000	0.135
Family size (X_2)	0.054	0.063	0.862
Poultry farming experience (X_3)	0.037	0.026	1.402
$Sex(X_4)$	0.231	0.288	0.802
Loan repayment period (X ₅)	0.0000	0.000	-1.095
Amount of loan obtain (X_6)	20.000	0.000	4.920***
Years of formal education (X_7)	0.054	0.032	1.707*
Interest on loan (X_8)	-0.166	0.038	-4.382***
Number of workers employed (X ₉)	0.093	0.046	2.008**
R^2	0.552		
Adjusted R ²	0.499		
F-value	6.632		

^{***} Sig. 1% level, **Sig. 5% level, * Sig. 10% level

Factors Affecting Amount of Credit Obtained

The analysis of factors affecting amount of credit obtained by the poultry farmers in Table 5 showed that exponential function give the best fit with five variables being significant and a high coefficient of multiple determinations (R²) of 0.505. The R2 of 0.505 implies that

the explanatory variables explain or influence the criterion variable by 50.5%. The F-ratio was 16.341 which is significant at 1% level, implying that the joint effect of all the included variables were significant. The significance of the F- ratio implies that the regression equation gave a good fit to the data.

Table 5: Linear Regression	Result on Determinants of	Amount of Loan Obtained

Variables	Coefficient	Standard error	T-value
(Constant)	-15.410	130.594	-0.118
Age (X_1)	-4.384	2.643	-1.659*
Family size (X ₂)	18.342	11.084	1.655*
Poultry farming experience (X_3)	5.652	4.220	1.339
$Sex(X_4)$	83.800	45.108	1.858*
Interest on loan (X_5)	-38.624	4.329	-8.923***
Years of formal education (X_6)	2.935	5.445	0.539
Loan repayment period (X_7)	-2.990	3.583	-0.835
R^2 Square	0.505		
Adjusted R ²	0.474		
F-value	16.341		

^{***} Sig. 1% level, * Sig. 10% level

Further analysis of the linear regression model shows that the variables: Age, family size, sex and interest on loan were all significant determinants of amount of loan obtained. The signs of the coefficient age and interest on loan are negative and significant at 10% and 1% level. The coefficient of sex and family size were positive and both significant at 10% level. This is indicating that poultry farmers who are male obtained more credit amount than farmers who are female. The coefficient of family size was positive and significant implying that higher family size of the farmers gives the farmer the better opportunity to obtain reasonable amount of loan that will enable him increase his scope of operation. Increasing poultry farm labours through harnessing of family labour was the most desirable.

Conclusion

This study determined the effect of micro-credit facilities on poultry production in Yewa Division of Ogun State, Nigeria. A total of one hundred and twenty (120) respondents were randomly selected and interviewed through wellstructured questionnaire. The study described socio-economic the characteristics of poultry farmers,

identified the various micro-credits available to the farmers, analyzed the profitability level of the poultry business, examined the effect of credit available on the business performance and examined the factors affecting amount of credit obtained the study area. The conclusion derived from this study revealed that poultry farm enterprise is dominated by women farmers who are still in their economically active age with an average age of about 43 years old. Women farmers were educated with a form of formal education and are married with an average household size of 5 persons and belonged to cooperative societies and had an average poultry farming experience of about 7 years with the farmers sourcing micro credit from formal financial institutions in the study area. Poultry farming in the study area is viable and profitable with an average net farm income of N63,519.57 while coefficient of amount of loan obtained, educational level and number of workers employed had effect on business performance. Budgeting technique which yielded net farm income and regression models were used to determine the effect of micro credit on poultry production in the study area.

Recommendations

Based on the findings of this study, the following are recommended for high production and improved profitability level in the study area;

- Effective agricultural policies and programmes should focus on how to improve farmers' access to credit and interest rates on loans obtained for poultry keeping should be moderate and affordable as it was revealed from the study that the higher the interest rate the lower the net farm income of the poultry farmers.
- Improved veterinary services that are targeted at reducing incidence of disease in layer flock so as to reduce the cost of medication and lower the mortality rate which will in turn increase poultry output of the farmers as well as the net farm income.
- More youth should be advised to go into layers production since it has been proven to be profitable in the study areas. This will provide job opportunities for the teeming population that are unemployed.

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