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Analysis of Factors Influencing Profitability of Poultry (Broiler) Production Among Credit And Non-Credit Users in Abia State

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ABSTRACT
Insufficient funding of poultry farming has limited the spate of development of poultry industry in Abia state, Nigeria. This has often caused low level of production output in the industry. In this study therefore, the factors influencing profitability of poultry production in Abia state was analyzed. The study was based on primary data obtained using a multistage random sampling technique, 80 respondents were chosen for the study The data was analyzed using descriptive statistics and multiple regression. The study shows that majority of the farmers were still in their active age though 55.6% and 55.9% non-credit and credit users respectively were male. 67% of the farmers had secondary education and above. Majority of the famers 55.6% (non-credit users) and 52.9% (credit users) have between 6-10 family members. 71.1% and 65.7% non-credit and credit users respectively had farming as their main occupation. High cost of feed and lack of finance has been found to be the most influencing factors of poultry production. Famers are however, advised to be involve in mixed farming so as to make available feed materials and reduce the amount of feed they purchase from feed industries, which will at the same time increase their level of income.
Keywords: Profitability, Poultry Production, Farmers, Credit

INTRODUCTION

The poultry industry in Nigeria has undergone a significant transformation since the early fifties, from a backyard, peasant and primitive household-oriented husbandry to modern and large-scale poultry which can be found in the countryside and urban centers today. Though the value of livestock resources has grown in absolute terms in recent years, its overall contribution to agricultural output remains dismally low (CBN, 2006). In Nigeria, animal protein, especially meat is expensive, in short supply and is out of reach to the majority of the population. The effect of inadequate animal intake is felt more by a large proportion of the population especially in rural areas, whose inhabitants constitute over 70% of the Nigeria population and who constitute over 85% of the extreme poor in the country (Chukwuji *et al*., 2006; Isaac, 2009). Due to this reason and

because there will be increase in population and demand for animal protein, different sources, one of which is poultry production (broiler in particular) are exploited towards meeting these needs. Studies have shown that animal protein, apart from its profitability in terms of income to the farmers, is essential for normal physical and mental development of man (Ugwu, 1990; Abdulahi and Aubert, 2004; Amao, 2013). The growth of the poultry industry in Nigeria was very impressive from the 1960's to the 1980's. In 1986 Nigeria had the largest poultry population in black Africa. Poultry keeping provides a method by which rapid transformation in animal protein consumption can be achieved.

Increases in the cost of inputs especially that of feeds and drugs are among the constraints in commercial broiler production. Feed and medication cost rose above the reach of most farmers. This drastically reduced the profit margin of poultry farmers. Given the above, poultry farmers would be faced with the problem of deciding which of broiler or layer enterprises to embark on. The farmers' concerns in this regard could be on the cost implications and returns from their choice of enterprise. The specific objectives of this study are therefore to examine the socioeconomic characteristics of broiler farmers in the study area, to analyse the factors that affect profitability of credit and non-credit users in broiler production and to identify the problems limiting poultry production in the study area.

METHODOLOGY

The study area was Abia State. Abia state is located in South Eastern part of Nigeria. The state covers an area of about 5,243.7sq.km which is approximately 5.8 percent of the total land area of Nigeria with its capital in Umuahia, it has seventeen LGAs. The population density is about 364 persons/km2 with 63% in agricultural production. This largely informed the choice of the state for the study. The average household size is about six persons per family (FOS, 1999). Abia state comprises 17 Local Government Areas (L.G.As) divided into three agricultural zones namely, Aba, Ohafia, Umuahia. Abia state offers an interesting scenario in the study of agricultural commercialization. The state being mainly agrarian with expanding population shows evidence of migration of the youths from the rural sector in search of white-collar jobs and trading. The state produces many food crops and cash crops like cocoa, oil palm, cashew, rubber etc.
Modern poultry has been introduced and is practiced by a good number of people, hence there is adequate supply of eggs and other poultry products in the state.

Farmers who are involved in both commercial and small-scale poultry (broiler) farming were the target population for this study. A multistage random sampling technique was adopted in selecting the respondents for the study. In the first stage, two (2) Agricultural zones were selected from the three Agricultural zones in Abia state. The selection was done based on the number of commercial poultry producers and marketers, availability of credit institution, availability of data and researcher limited resource and time. The zones that were selected for the study are Abia south (Aba) and Abia central (Umuahia).

The second stage involved the purposive selection of two (2) Local Government from each of the agricultural zones selected. The Local Government chosen were Aba North and Aba South in Abia south. In Abia central; Umuahia North and Umuahia South. The Local Government areas were selected based on the availability of poultry farmers, and availability of data. The third stage involved the random selection of five (5) communities from each of the Local Government to give a total of 20 communities.

In the last stage, four (4) poultry farmers were randomly selected from each of the selected communities, 35 credit users and 45 non- credit users altogether 80 respondents.
Relevant data were collected from users and non -users of credit in poultry broiler production. Primary and secondary source were used for the purpose of this study.

Analytical Technique

Descriptive statistical tools such as means, frequencies, and percentages were employed in analysing the socioeconomic characteristics of the poultry farmers and to identify the problems limiting poultry production. Multiple regression was be used to analyse the factors that affect the profitability of poultry production in Abia state. The multiple regression model used is stated as follows;

$$\text{Implicit; } Y = f(X_1, X_2, X_3, X_4 \ldots, X_n, U_1) \quad (1)$$

Where,

Y= profit of poultry

X_1 = Gender (1 =male, 0 =female)

X_2 = Age (years)

X_3 = Marital status

X_4 = Household size (number)

X_5 = Level of education

X_6 = Main occupation (1= farming, 0 = otherwise)

X_7 = Source of credit

X_8 = Credit use experience (years)

X_9 = Annual farm income

X_{10} = Extension agent visit (number of visit)

X_{11} = quantity of feed (kg)

U_1 = Error term.

RESULTS AND DISCUSSION

Socio - economic characteristics of poultry broiler famers

Table 1 above shows the distribution of the age, sex, household size, level of education, and main occupation of the poultry broiler producers in the study area. Most of the broiler farmers fall between the ages of 41-50years.The physical ability of a man obeys the law of diminishing returns. In this wise, the productivity of man increases with age to a peak level after which it declines as the farmer advances in age. Therefore, the older the farmer becomes, the higher the risk averse tendency because the famer's goal tends to shift from productivity to security. This implies that these farmers were within the active working age bracket. These farmers were particularly young people who could afford to venture into the poultry business which is known to be characterized by risk such as disease, fire outbreak and theft and they are matured to take credit decision that can sustain their poultry production. This finding agrees with the findings of Folawole *et al* (2014) who reported that the highest poultry egg farmers in Ogun state Nigeria falls between the age of 41-50 and Olagunju and Babatunde (2011) who reported that the average age of poultry farmers in south- western Nigeria was 46. Also Otunaiya et.,al (2014) who reported that the age of poultry farmers in Oyo state Nigeria falls between 41-50. Analysis of gender of poultry farmers in the study area as shown in Table 1 shows that the male (55.6% and 55.9% for non-credit and credit users respectively) who engage in poultry broiler production in the study area is more than the female (44.4% and 44.1% for non-credit and credit users respectively).

Table 1: socioeconomic characteristics of the sampled poultry broiler famers in the study area

Variables	non-credit users		credit users	
	Frequency	percentage	frequency	percentage
Age				
21-30	13	29.7	11	32.4
31-40	10	22.1	10	29.4
41-50	20	44.1	13	38.2
>50	2	4.1	0	0
Total	45	100	35	100
Sex				
Male	25	55.6	20	55.9
Female	20	44.4	15	44.1
Total	45	100	35	100
Household size				
1-5	12	26.1	10	29.4
6-10	25	55.6	18	52.9
>10	8	17.8	6	17.6
Total	45	100	35	100
Education				
No formal	5	11.1	5	14.7
Primary	10	22.2	10	29.4
Secondary	14	31.5	12	35.3
Tertiary	16	35.5	7	20.6
Total	45	100	35	100
Occupation				
Farming	32	71.1	23	65.7
Civil servant	4	8.9	6	17.1
Trading	6	13.3	5	14.3
Others	3	6.7	1	2.9
Total	45	100	35	100
Farming experience				
1-5	8	17.7	13	37.1
6-10	26	57.8	17	48.6
11-15	6	13.3	3	8.6
16-20	4	8.9	2	5.7
>20	1	2.2		
Total	45	100	35	100

Source: Field survey, 2019

The study also shows that majority of the poultry famers in the study area has a household size that falls within 6-10. This implies that the poultry farm operator in the study area has a large family size. The family might be exploited as cheap source of labour for the poultry farms. However, large family sizes 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 required fund for their farm operation. Olagunju and Babatunde (2011) also reported that the average household size of poultry farmers in south-western Nigeria is 7 which shows large family size.

Education is one of the major socioeconomic characteristics that have great impact on the productivity and farmer's use of credit. Farmers with formal education are privileged to have early contact with innovations and improved technologies which are designed to improve output and productivity. In poultry industry, formal education affords farmers especially, those that have training in agriculture, the opportunity to understand proper management of resources in poultry production. The study reveals that majority of the farmers have formal education while few have

no formal education (11.1% non-credit users and 14.7%credit users) The result indicate that majority of the poultry farmers are highly educated, thus, expected to enhance management of poultry farms in the study area. This finding agrees with the findings of Olagunju and Babatunde (2011) who reported that majority of the poultry farmers (60%) at south-western Nigeria had formal education. The occupation of the farmers in the study area shows that 71.1% of non-credit users and 65.7% credit users participate in farming as their main occupation.

The number of years in which the farm owners or managers have been involved in poultry production could be used to measure the farmers experience in poultry farming. Experience is expected to have a significant positive impact on the managerial ability of the farmer or farm manager. Therefore, the more experienced a poultry farmer is, ceteris paribus, the more efficient he would be in farm management because the acquired experience over the years would be brought to bear on the production activities. Table 1 shows that poultry farmers having 6-10years of farming experience constitute majority (57.8% for non-credit users, 48.6% for credit users) and 24.4% and 14.3% of non-credit and credit users respectively have above 10 years of experience. This implies that majority of the poultry farmers have fairly long years of farming experience.

Profitability of broiler production by credit and non-credit users

Table2: cost and returns of poultry broiler farmers in the study area

Cost item	Non-credit users		Credit users	
	Average cost(N)	Percentage	Average cost(N)	Percentage
Total VC	**910063.70**	**97.64**	**8645874.71**	**97.86**
Total FC	**21985.94**	**2.36**	**341607.61**	**2.14**
Total cost	**932049.6**	**100**	**8987482.32**	**100**
Revenue				
Sales from broiler	1915054.35	100	21236000	100
Gross Margin	**1004990.65**		**12590125.3**	
Net Revenue	**983004.4**		**12248517.7**	

Source: Field survey, 2019

From Table 2 above, the gross margin for non -credit users of poultry broiler farmers was ₦1004990.65 while that of the credit users was ₦12590125.3. The non- credit users made a net profit of ₦983004.4 while the credit users made a net profit of ₦12248517.7. This result implies that the non- credit users are more of small-scale poultry farmers which employ less capital and make lower average net profit than the credit users which employ more capital and variable inputs to generate more farm income. This reflected in the higher net profit and gross margin showing that broiler production is profitable.

Factors that affect the profitability of poultry broiler production by non-credit users

Multiple regression result on analysis of the factors that affect the profitability of poultry production for non- credit users was summarized and presented in Table 3. The double log functional form was chosen as the lead equation based on the value of R^2 (coefficient of multiple determination), F-ratio and the conformity of sign of regression coefficients with *a priori* expectation. The coefficient of multiple determination is 0.976 which implies that 97.6% of the variation in the farmers output was explained by the explanatory variable similarly, the F- statistic indicates that the analysis is statistically significant at 1% level of significance. Gender, household size, annual farm income and size of feed were significant.

The coefficient of Gender was significant at 10% and inversely related to the profit. This implies that gender significantly affect profitability of non- credit user. Also House hold was significant at 5% and negatively related to the profit, this implies the value of profit increases household size decreases vice versa. This is desirable, consistence and of great importance in farm production as rural household may rely more on their household members than hired workers for labour on their

farms. This is so if members are not made up of the aged and very young people, otherwise scarce capital resources that should have been employed for farm production would be channelled for upkeep of these dependent members which will in turn decreased their profitability level. This corroborate the findings of Nwaru (2004).

Table 3: multiple regression result on the factors that affect the profitability of poultry broiler production by non -credit users

Variables	**Linear**	**Exponential**	**Double Log^{+}**	**Semi Log**
Constant	-1948.931	11.546	7.201	-1400875.958
	(-0.035)	(52.037)***	(11.331)* **	(-4.744)***
Gender (x_1)	-0.023	0.039	-0.088	0.069
	(-0.368)	(0.507)	(-1.781)*	(0.937)
Age (x_2)	0.011	0.060	0.052	0.012
	(0.164)	(0.712)	(0.922)	(0.142)
Household size (x_3)	-0.076	0.001	-0.108	-0.163
	(-1.138)	(0.010)	(-2.071)**	(-2.104)**
Level of education (x_4)	0.051	-0.015	-0.058	0.061
	(0.588)	(-0.144)	(-0.843)	(0.593)
Main occupation (x_5)	0.068	-0.024	0.055	-0.026
	(0.794)	(-0.225)	(0.737)	(0.234)
Source of credit (x_6)	0.058	0.080	0.053	0.000
	(0.776)	(0.875)	(0.867)	(-0.003)
Credit use experience (x_7)	0.047	-0.073	-0.004	0.187
	(0.660)	(-0.840)	(-0.061)	(1.958)*
Annual farm income (x_8)	0.000	0.000	0.281	0.321
	(0.000)	(0.000)	(5.509)***	(4.227)***
Extension agent (x_9)	0.120	0.060	0.019	0.114
	(1.444)	(0.592)	(0.253)	(1.041)
Quantity of feed (x_{10})	0.912	0.908	0.854	0.726
	(12.690)***	(10.344)***	(12.806)***	(7.323)***
R^2	0.930	0.896	0.976	0.947
R^{-2}	0.901	0.852	0.959	0.909
F- ratio	31.215***	20.175***	56.718***	24.867***

*Source: Field survey, 2019. +lead equation. *** Significant at 1%, ** significant at 5%, * significant at 10%*

Annual farm income was significant at 1% positively related to profitability, this means that as farmers income increase, the profit level also increases and vice versa. Furthermore, feed size was significant at 1% and positively related to profit. This implies that as the volume of feed used by the poultry farmer increases, their profit level also increases. This could be because the poultry were provided with sufficient feed which therefore leads to increase in their sizes. The sizes of the poultry however determine the price of sell which in turn determines the profitability level.

Factors that affect the profitability of poultry broiler production by credit users

Multiple regression result on analysis of the factors that affect the profitability of poultry production for credit users were summarized and presented in Table 4 above. The Linear functional form was chosen as the lead equation based on the value of R^2 (coefficient of multiple determination), F-ratio and the conformity of sign of regression coefficients with a priori expectation. The coefficient of multiple determinations is 0.979 which implies that 97.9% of the variation in the farmers output was explained by the explanatory variable similarly, the F- statistic indicates that the analysis is statistically significant at 1% level of significance. Gender, level of education, credit use experience and quantity of feed were significant

Table 4: multiple regression result on the factors that affect the profitability of poultry broiler production by credit users

Variables	Linear+	Exponential	Double Log	Semi Log
Constant	-22903.276	7.664	8.676	-325795.443
	(-475)	(8.848)***	(2.268)**	(-0.509)
Gender (x_1)	-0.073	-0.080	0.000	0.000
	(-2.042)*	(-1.065)	(0.000)	(0.000)
Age (x_2)	0.022	0.050	0.036	0.001
	(0.676)	(0.721)	(0.362)	(0.006)
Household size (x_3)	0.011	0.075	-0.164	0.008
	(0.280)	(0.933)	(-1.145)	(0.035)
Level of education (x_4)	0.032	0.145	0.290	-0.128
	(4.943)**	(2.012)**	(-1.576)	(-0.462)
Main occupation (x_5)	0.006	0.129	0.000	0.000
	(0.145)	(1.602)	(0.000)	(0.000)
Source of credit (x_6)	-0.042	0.000	0.200	-0.056
	(-1.251)	(-0.002)	(1.729)	(-0.323)
Credit use experience (x_7)	0.089	0.187	-0.099	-0.036
	(2.692)***	(2.681)***	(-1.215)	(-0.294)
Annual farm income (x_8)	0.021	0.063	-0.345	0.454
	(0.526)	(0.761)	(-1.289)	(1.126)
Extension agent (x_9)	0.007	0.083	-0.018	-0.009
	(0.196)	(1.148)	(-0.116)	(-0.037)
Quantity of feed (x_{10})	0.960	0.896	1.314	0.538
	(22.437)***	(9.971)***	(6.211)**	(1.690)*
R^2	0.979	0.907	0.968	0.963
R^2	0.970	0.868	0.958	0.904
F- ratio	110.828***	23.272***	37.904***	16.361

Source: Field survey, 2019. +lead equation. *** significant at 1%, ** significant at 5%, * significant at 10%

The coefficient of Gender was significant at 5% and inversely related to the profit. Gender refers to social identities attributed to women and men. Gender is rooted in social institutions and results in the patterns within society that structure the relationships between women and men and that give them differing positions of advantages and disadvantages within institution (Anderson, 2001). Gender based agricultural production is about promoting farming activities that respond equally to men and women. However, because women experienced farming differently, meeting women's needs become critical to promoting sustainable and equitable agricultural productivity.

Level of education was significant at 5% and positively related to profit. This implies that, the level of a farmer's educational attainment increases profitability; that is an increase educational level raises human knowledge and skill to adapt to new agricultural technologies which enhance profitability. This conforms to the a priori expectation and corroborates with the findings of *Onyeweaku et al (2005) and Udoh (2005).* An educated farmer has the capacity to understand and adopt improved technology that would increase his/her profit level. Credit use experience was significant at 5% and positively related to profitability, this implies that as the level of farmers experience in credit use increases their profitability increases. The more experienced a farmer is, the greater their productivity level which in turn generate larger profit. Also feed quantity was significant at 1% and positively related to profit. This implies that as the volume of feed used by the poultry farmer increases their profit level also increases.

Table 5. Problems limiting poultry production

Problems	Frequency	Percentage
Lack of finance		
Affected	49	61.3
Not affected	31	38.8
Total	80	100
High cost of feed		
Affected	61	76.3
Not affected	19	23.8
Total	80	100
Lack of technical knowhow		
Affected	27	33.8
Not affected	53	66.2
Total	80	100
Theft and burglary		
Affected	9	11.2
Not affected	71	88.8
Total	80	100
High incidence of diseases		
Affected	6	7.5
Not affected	74	92.5
Total	80	100
Lack of Veterinary care		
Affected	7	8.8
Not affected	73	91.2
Total	80	100

Source: Field Survey, 2019

Table 5 shows that 38.8% of the poultry farmers are not affected by lack of finance while 61.3% of poultry farmers in the study area are affected by lack of finance this could be as a result of low income of the famers. The findings showed that 23.8% are not affected by high cost of feed while 76.3% of poultry farmers are affected by high cost of feed while this implies that poultry feed in the study area is very costly which could be as a result of competition between man and animals for feed materials use in production of poultry feed for instance maize. The findings also showed that 62.2% are not affected by lack of technical knowhow while 33.8% are affected. This could be because of the inability of some of the poultry farmers to obtain formal education. Farmers with formal education are privileged to have early contact with new innovations and improved technologies which are designed to improve output and productivity. 91.3% of the poultry farmers were not affected by lack of Veterinary care to their poultry while 8.8% were affected. This result could be because those who were not affected had formal education which however exposed them to the needs of Veterinary care to their poultry. The findings also showed that 92.5% of the poultry famers were not affected by high incidence of disease while 7.5% were affected. This could be as a result of the poultry farmers who make use of Veterinary services therefore reducing high incidence of diseases to their poultry.

CONCLUSION

Insufficient funding of poultry farming has limited the spate of development of poultry industry in Abia state, Nigeria. This has often caused low level of production output in the industry. In this study therefore, the factors influencing profitability of poultry production in Abia state was analysed. High cost of feed, gender disparity, level of education, household size and lack of finance have been found to be the most influencing factors of poultry production. Famers are however, advised to involve in mixed farming so as to make available feed materials and reduce the quantity of feed they purchase from feed industries, as this will at the same increase their level of income.

REFERENCES

Abdulahi, A. and Aubert, D. (2004), Non-parametric and Parametric analysis of Calorie Consumption in Tanzania. Food Policy. 29:113-129.

Amao, J. O. (2013). Determinants of Protein Consumption among Households in ILA Local Government Area of Osun State, Nigeria. *Middle East Journal of Scientific Research*. 15(10):1401-1410.

Folawole, O.O, Adewuyi, S.A. Phillip, B. and E. O. Fakoya (2014) Production Efficiency of Credit and Non-credit Users of Poultry Egg Farmers in Ogun State, Nigeria: A Data Envelopment Analysis (DEA) Approach. *Journal of Agriculture and Veterinary Services.* 3(4):73-78

Isaac, O. Akinyele (2009). Ensuring Food and Nutrition Security in Rural Nigeria: An assessment of the Challenges, Information needs and Analytical Capacity, Nigeria Strategy Support Program (NSSP). Background Paper Number. NSSP 007.

Nwaru J. C. (2004) Rural Credit Market and Arable Crop Production In Imo State of Nigeria. Unpublished Phd Dissertation, Michael Okpara University of Agriculture Umudike.

Olagunju F. I.1 and Babatunde R. O.2 (2011). "Impact of credit on poultry productivity in south-western Nigeria". *Journal of Agricultural and Biological Science*. 6(10):58

Oludimu O. L, A. A. Awojobi and K. A. Akanni. (2004). "Analysis of Poultry Insurance and Risk Management in Ogun State, Nigeria" *Journal of Agricultural Management and Rural Development (JAMARD*). 1: 64-84.

Onyenweaku, C.E. and Nwaru J.C (2005), "Application of a Stochastic frontier Production t,o the Measurement of Technical Efficiency in Food Production in Imo State Nigeria, Niger" *Agricultural Journal* Vol36 No 1-12

Onyenweaku, C.E. And L. Tanko (2005), "Optimum Combination of Enterprises and Resource Allocation By Arable Crop Farmers In Kebbi State". *Journal of Sustainable Tropical Agricultural Research*, 14: 81-88

Otunaiya, A.O., O.A.C Ologbon and E.O. Akerele (2014), Analysis of Agricultural Loan Use Decision among Poultry Farmers in Oyo State, Nigeria