Effects of Micro Credit on Productivity of Small Scale Poultry Farmers in Kaduna Central Agricultural Zone, Kaduna State, Nigeria

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ABSTRACT

The purpose of this paper is to examine the effect of micro credit on the productivity of small scale poultry production in the central Agricultural zone of Kaduna state Nigeria. This study adopts public opinion survey making use of Primary data with the aid of structured questionnaire from small scale commercial poultry farmers in four selected local Governments. The items were both open and closed ended questions, the purpose of which was to give freely and direction to the responses. The study involved both quantitative and qualitative analysis. The result of the analysis reveals that the average revenue from sales of the output of users of micro credit was found to be higher than that of non-users. It also reveals that input variables of value of feeds and water were significant at 1%. The study also reveals that the inefficiency model shows five out of eight variables were statistically significant in production. The result also indicated that the mean technical efficiency estimates of poultry farmers in the study area is 89%. This study could not cover the entire Local Government Areas of the state where poultry production is prevalent; also, it could not assess the impact of such loan on the livelihood of the farmers through the production because of data limitation. Policy thrust needs to have more rural outlets with well-designed prudent loan utilization training to go along with loan disbursement. This study provides an analysis of the effect of micro credit on the productivity of small scale poultry farmers in central Agricultural zone, a major poultry production region in Kaduna state Nigeria.

Keywords: Poultry productivity, Kaduna Central Agricultural zone, Small scale poultry farmers, Micro Credit.

INTRODUCTION

The agricultural sector in Nigeria is the most important non-oil economic activity; it is also the single largest employer of labor, employing about 70 percent of its workforce (National Bureau for Statistics, 2014, United State Department of Agriculture, 2013) and contributed 40.07% and 22% (pre and post rebasing respectively) of Gross Domestic Products (GDP) in 2010 and 2014 respectively (National Bureau for Statistics, 2014). Nigeria relies so much on agriculture to achieve economic growth. Over 80% of the country's population living in the rural areas is directly or indirectly dependent on agriculture for its livelihood (National Bureau of Statistics, 2014).

The poultry industry in Nigeria, as well as other developing countries of Africa, is continually characterized by low production levels (Okoli, 1991). In Nigeria, particularly in Kaduna, despite growth in the poultry production industry since 2000, demand of poultry product (egg and meat) has not been matched by local supply. In 2011 for example, the Nigerian egg production stood at 636,000 metric tons (United State Department of Agriculture, 2013).With population of about 165 million in 2011 (National Bureau for Statistics, 2014), a huge demand-supply gap was created given the one egg per day advocacy.

The business of rearing livestock especially poultry is cost-sensitive. Feed cost, for instance, account for between 65% and 70% of the total cost of raising poultry. Feed, the major factor militating against the poultry industry, hampers production, not only on the basis of high cost but also due to low quality feeds supplied by the feed millers which has a negative impact on productivity – low level of egg production as well as rendering the birds susceptible to diseases, hence, the need for quality feeds by each poultry farm – firm (Bamiro *et al.,* 2001). This and other cost of poultry production has increased the price of eggs and other poultry products beyond the reach of most Nigerians. Government policies however, did not give livestock production the desired support. This has led to a decline in livestock production over the years in the state. This is largely associated with lack or limited finance (credit facilities) for the procurement of basic poultry equipment, materials, and expensive feed

ingredients. This makes it difficult for the farmers to produce and supply sufficient and good quality feeds to the poultry birds (Akanni, 2007).

There is considerable potential for expanding poultry production beyond subsistence levels,

To enhance performance, therefore, adequate and timely release of funds that will see the farms 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. If sufficient agricultural finance is made available, the decline in the production and supply of poultry products in Kaduna would improve. An increase in the level of finance 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).

These important roles played by poultry production make imperative the need for financial assistance for livestock farmers. The importance of agricultural credit cannot therefore be overemphasized.

Nigeria is one of the largest countries in rural areas and agricultural production. However, Nigeria farmers suffer a severe lack of credit (Isijola 2000: Ambali 2013: Okurut *et al* 2004: Atieno 2001: Elhiraika and Ahmed 1998).

There have been many studies on the impacts of credit on agricultural Production partially because access to credit is often one of the key factors for improving productivity and rural living standards in less developed countries. Carter (1989) found that credit had a positive impact on production and credit access can be expected to reduce the pattern of structurally unbalanced growth in Nicaraguan agriculture. Zeller *et al.* (1998) concluded that participation in an agricultural credit program was able to raise the cropping share for hybrid maize and tobacco, and membership in credit programs had a sizable effect on crop income in Malawi. This implies that credit access can have beneficial effects on agricultural production and rural incomes. Fabiyi and Osotimenhin (1984) found that the amount of loan taken was found to have a positive contribution to both output and income on the impact of credit on rice production in Ondo and Oyo states Nigeria. Bethel (2008) found that credit have negative coefficient but statistically significant at five percent level and concluded that credit access was a determining factor of the efficiency of the farmers in cross river state, Nigeria

Many researches were conducted on how to increase production in the industry in various states of Nigeria, little or nothing seems to have been carried out in Kaduna State. It is in realization of this obvious fact that the study became imperative. This study, therefore, sets out to investigate the following questions: To what extent has micro credit felt the output of small scale poultry farmers? Does micro credit have any effect on the technical efficiency of small scale poultry farmers? This study attempts to examine and assess the effects of micro credit and technical efficiency on the productivity of small scale poultry farmers in Kaduna, in order to determine the sustainability of such micro-credit on the production.

LITERATURE REVIEW

The article is organized as follows. First, we briefly review some work done on the effect of credit on poultry production, as it is more important in supporting production. Then we describe the empirical model, an endogenous switching regression model, of effect of credit on productivity, we demonstrated the conceptual framework of this study. We discuss the estimation results and finally; we present conclusions and implications of the study.

Effect of credit on poultry production

In a study carried out by Bethel (2008) on the demand for credit and its impact on productivity of poultry enterprise in cross river state, Nigeria using the maximum likelihood estimate of the stochastic frontier production found that the estimated coefficient for all the independent variables (i.e. chicks, feeds, water, labour and veterinary services) had positive signs, but that only the variable of number of day-old chicks was significant at one percent level implying that a one percent increase in the level of chicks will increase output by 0.401 percent. The results also showed that extension visit was found to be statistically significant at one percent level, membership of the farmers in poultry association was found to have negative coefficient and statistically significant at ten percent level. He also found that credit have negative coefficient but statistically significant at five percent level and concluded that credit access was a determining factor of the efficiency of the farmers in the study area.

Again Yazdani (1995) used the production function to measure the impact of credit. This was done by fitting a production function for borrowers, non-borrowers and pooled sample respectively. The chow test was also carried out to measure the significance of differences in production function and efficiency between borrower, and non-borrower. The results showed that the borrowers' production function had a neutral upward shift when

compared to the function for non-borrowers. The functions therefore differed in terms of slope or marginal productivity of inputs.

According to Nkereumem *et al.* (2001) in their study on Determinants of output in commercial egg production in Calabar, Cross River State, Nigeria found that feed has the highest coefficient and concluded that increase can be more experienced in income of family poultry by increasing the feed (quality and quantity) given to the family poultry than by increase in any other factor that influence family poultry income as specified in the study.

Model specification

The stochastic frontier production, independently proposed by Aigner, *et al.* (1977) and, Meesusen and van den Broeck (1977), whose original specification involved a production function specified for cross-sectional data with an error term having two components, one accounting for random effects and the other accounting for technical inefficiency. The specification had been altered and extended to include the specification of more general distributional assumptions for the μi, such as the truncated normal or two parameter gamma distributions, consideration of panel data and time-varying technical efficiencies, extension of the methodology to cost functions and also to the estimation of systems of equations and so on. The Cobb- Douglas and Translog functional forms are the most often used functional forms in stochastic frontier analyses.

The specification which originally involve a two stage estimation procedure in which farm level efficiency was first estimated and then regress upon firm-specific variables, has since been replaced with a single stage estimation procedure, because the 2-stage has been recognized as being inconsistent in its assumptions regarding the independence of the inefficiency effects. The one-stage procedure developed by Kumbhakar, *et al*. (1991), Reifschneider and Stevenson (1991) proposed stochastic frontier models with an inefficiency effects (μi) are expressed as an explicit function of a vector of firm-specific variables and random error, while Battesse and Coelli (1995) version is different from others in that allocative efficiency is imposed, first-order profit maximising conditions removed, and panel data permitted (Coelli, 1996). The Battesse and Coelli (1995) proposed model specification, which builds hypothesized efficiency determinants into the inefficiency error component so that one can identify focal points for action to bring efficiency to higher levels, is expressed as:

$Y_i = f(X_i; \beta) \exp(V_i - \mu_i)$, i=1, 2… N…………………………………. (i)

Where, Y_i = Quantity of output of the ith farm

X_i = Vector of jth inputs used by the ith farm

β = Vector of parameters to be estimated

$(V_i - \mu_i)$ = Stochastic disturbance term

The logit regression model

In order to explore the correlates of dependent variable with the independent variables, a logistic model can be estimated with dependent variable being the dichotomous variable of discrete variable of (0) and (1) if Yi is the random variable (dichotomous), it can then be assume that Yi takes the value of 0 or 1, where 0 denotes the non-occurrence of an event in question and 1 denotes the occurrence. If $X_1… X_n$ are characteristics to be related to occurrence of this outcome, then the logistic model specifies that the conditional probability of event (i.e., Y=1) given the values of $X_1… X_n$ is as follows;

$P(Y) = 1/1 + \exp-(\alpha - \Sigma\beta_jX_j)$

In order to linearize the right hand side, a logit transformation can be applied by taking logarithm of both sides. Therefore, researchers can have;

Logit $P(Y) = \alpha + \Sigma\beta_jX_j$.

Where; Y_i = 1 if successful, i.e., e.g. if household is poor

Y_i = 0 if failure, i.e., if household is not poor

α = Constant term

β = Logistic coefficient for independent variables. (Agricultural journal, 2013)

Conceptual Framework

The conceptual framework for this study is based on the fact that bringing the variables together especially with credit supply to farmers is widely perceived as an effective strategy for enhancing the increase in poultry production. Agricultural credit is considered essential to the process of improving agriculture and transformation of the rural economy. In this relationship, the major variables are the farmers output like eggs and poultry meat (dependent variables) labour, chicks, feeds, water, veterinary services (independent variables), socioeconomic characteristics, training, extension visit, credit, technical skills, information (intervening variable) and outcome/result/output (enhance standard of living, economically empowered/economically disempowered) this relationship is systematically represented in Figure 1
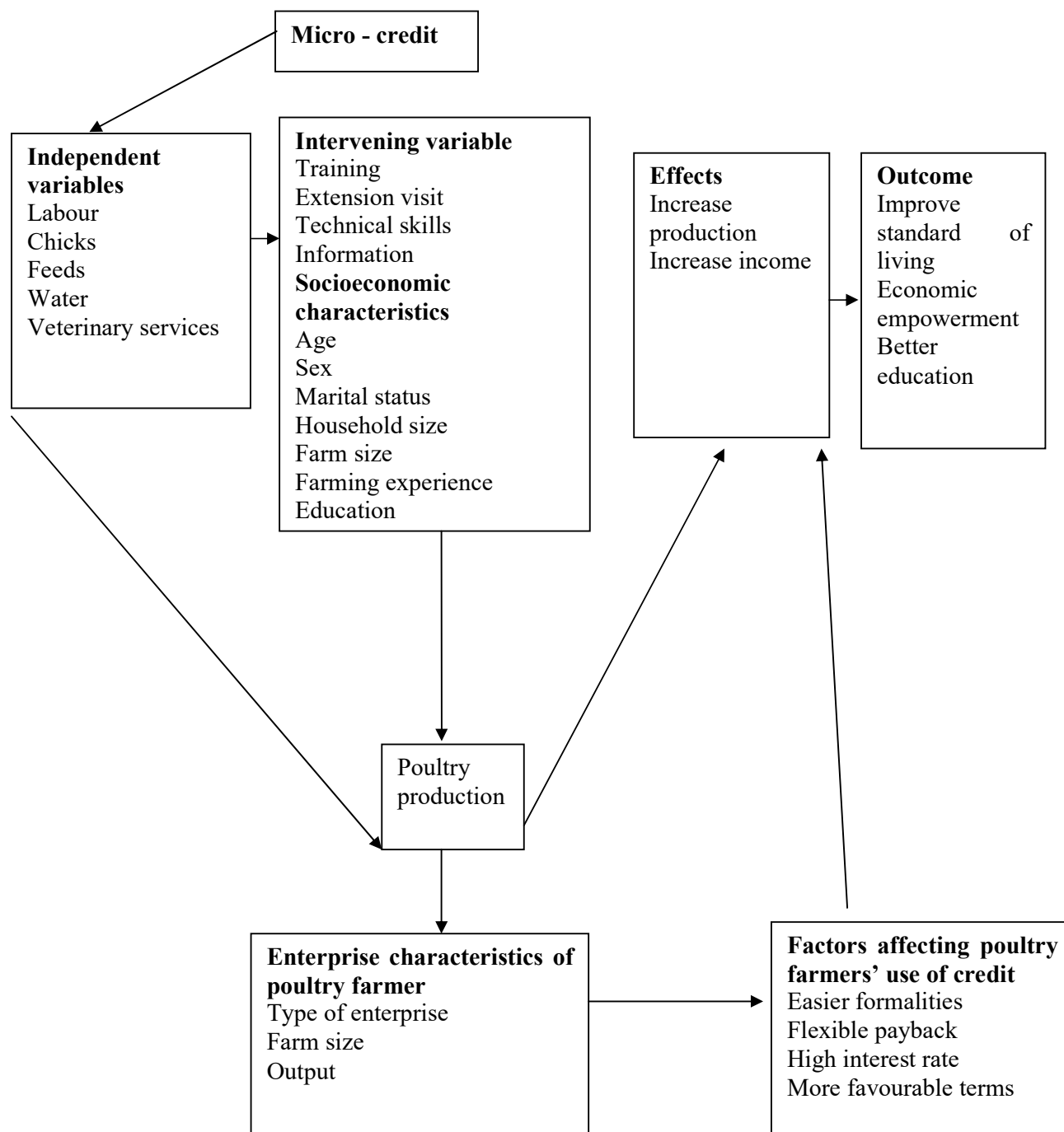
Figure1: Conceptual framework on effects of micro credit on the productivity of small scale Poultry farmers in *Kaduna Central Agricultural Zone.*

Statement of Hypotheses

   i. Ho_1: use of credit has no significant effect on the output of poultry farmers.
   ii. Ho_2: use of credit has insignificant effect on the technical efficiency of poultry farmers.

METHODOLOGY

This study adopts public opinion survey making use of questionnaire. The items were both open and closed ended questions, the purpose of which was to give freely and direction to the responses. The study involved both quantitative and qualitative analysis.

Population and Sampling Procedure

The population for this study comprised small scale poultry farmers in four Local Government Areas (LGAs) in Kaduna State, Nigeria, since it is impractical and uneconomical to obtain information from the entire population of poultry farmers in the state, a sample size of 141 respondents was obtained using purposive and stratified simple random sampling techniques. The Kaduna central Agricultural Zone was stratified in to four LGAs where poultry farmers are prevalent in the zone based on the number of registered poultry farmers obtained from Poultry Association of Nigeria (PAN), Kaduna State Chapter. Farmers with one thousand birds and below and both those that were on credit and non credit were considered for the study from the list of the registered poultry farmers obtained from PAN. The four LGAs sampled include: Kaduna South, Kaduna North, Chikun and Igabi, from each of the four LGAs, four communities that typify each Local Government in terms of poultry production were drawn employing another purposive sampling technique. Finally, sampling frames were developed for each of the communities, using proportional allocation of 10% across board; a total sample size of one hundred and forty one (141) respondents was obtained as stated on table 1.

Table 1: Sample Size Selection Plan

Sn.	Local govt.	Communities	Sampling frame	Sample size
1	Kaduna north	UngwarRimi	82	8
		Kawo	73	7
		Malalli	**70**	7
		HayinDanmaniya	64	6
2	Kaduna south	TudunWada	86	9
		Barnawa	106	11
		Kakuri	91	9
		Televission	94	9
3	Chikun	GoninGora	138	14
		Kujama	146	15
		Narayi	75	8
		Sabon Tasha	56	6
4	Igabi	Rigachikun	88	9
		Jaji	74	7
		Mando	97	10
		Rigasa	57	6
Total				**141**

Source: Adapted from Poultry Association of Nigeria (PAN) Kaduna State chapter, 2016

Data Collection Techniques

Primary data were used for this study. These were collected with the aid of structured questionnaire from small scale commercial poultry farmers scattered over the four selected local Governments.

Validation of Research Instrument

The research instrument was scrutinized and edited by the supervisory team of this research work and other scholars in the College of Agricultural Economics and Extension of the University of Agriculture Makurdi to ensure it contains both face and content validity. This was also tested in the field by a test-retest method to ensure its reliability.

Data collected were analyzed using t- test to determine the effect of microcredit on the productivity of small scale poultry farmers by comparing the users of micro credit and none users in poultry production, and Cob-Douglas stochastic frontier regression model was used to analyze the effect of microcredit on the technical efficiency of small scale poultry farmers. The implicit form of the model is:

In $Y_i = a_o + a_i X_{ij} + V_i - U_i$ ……………………………………………………………………… (ii)

Where,

Y_i = output (valued in naira of eggs produced, spent layers sold and market weight broilers and

Cockerels sold) as dependent variable

a_0 = intercept

$a_1 - a_5$ = coefficient (vectors of parameters to be estimated)

X_{ij} = independent variables including:

X1= man days of labour used
X2= number of day-old chicks
X3=quantity of water used in liters
X4= cost of veterinary services used in naira
X5= quantity of feed used in kg
Vi-Ui = compound Error term
Vi =random errors
Ui = Technical inefficiency effects predicted by the model
The inefficiency Ui was modeled in terms of the factors that affect the technical efficiency of the farmers as:
$Ui = \delta 0 + \delta 1 X1 + \delta 2 X2 + \delta 3 X3 + \delta 4 X4 + \delta 5 X5 + \delta 6 X6 + \delta 7 X7 + \delta 8 X8 + \delta 9 X9$………………(iii)
Where,
X1= Sex, (1= male, 0 = female)
 X2= Age of household head in years
X3= Educational level measured in number of years spent in school
X4= Household size number of person living in each household
X5= Years of experience in poultry farming
X6= Training attended training (1 if yes, 0 otherwise)
X7= Extension visit in number of times visited
X8= Membership of association (1 if yes, 0otherwise)
X9= Use of credit measured as (1 if received, 0 otherwise)

Output is being represented in value terms (naira) instead of in physical quantities (Kg) or number of eggs of the poultry products because different classes of bird were considered in the research including layers, broilers, and cockerels. In other words some farmers are keeping more than one class of birds in their farms. This will makes it difficult to aggregate the total output in quantity terms. For example some farmers keep both layers and broilers; others keep a combination of the three classes of bird. This is in tandem with Nchare (2007) who worked on analysis of factors affecting the technical efficiency of Arabica coffee producers that had other crops like plantain in their farm plots in Cameroon, and used the same method to measure the output of the farmers. This does not cause any statistical problem since some of the exogenous variables were expressed in value terms. As cited by Nchare (2007), this approach was largely drawn from studies of such authors as Ajibefun *et al*. (1996), Battese and Coelli (1995), Coelli and Battese (1996), Bravo-Uretra and Pinheiro (1997) and Coelli *et al*. (1998), who used the same conversion method in their respective studies.

RESULTS AND DISCUSSION
Effects of Credit on the Output of Farmers
Table 2 shows the effect of credit on the output of poultry enterprise. The result shows that revenue obtained from sales of eggs by the users of micro credit stood at an average of ₦1,930, 200 with a standard deviation of ₦1,377,260. Similarly, users of micro credit obtained revenue of ₦194,230 with a standard deviation of ₦192,739 from sales of broiler. Also, revenue obtained from sales of cockerels by the user of micro credit was found to be ₦84,900 with a standard deviation of ₦46,002.

In contrast, non-users of micro credit obtained revenue of ₦1,258,500 from egg sales with a standard deviation of ₦712,760, while ₦117,220 was obtained by non-users of micro credit as revenue from broiler sales with a standard deviation of ₦146,135. Revenue of ₦207,000 was obtained from sales of cockerels by non-users of micro credit with a standard deviation of ₦165,638.

The revenue obtained by users of micro credit from sales in all the enterprises stood at ₦1,960,600 with a standard deviation of ₦1,564,180. Similarly, non-users of micro credit obtained revenue of ₦1,321,500 from sales in all the enterprises with a standard deviation of ₦970,305.

The result of the t-value indicates that the average revenue from egg sales for users of micro credit was significantly higher than that of non-users of micro credit. (t = 2.808 $p \le 0.10$).

Also, the average revenue from broiler sales for users of micro credit was found to be significantly higher than that of non-users of micro credit. (t = 1.751 $p \le 0.10$).

However, the revenue from sales of spent layers from users of micro credit was found not to be significantly different from that of non-users of micro credit (t = -1.654 $p > 0.10$)
The average revenue of users of micro credit from sales of cockerels was found to be significantly lower than the

sales of cockerels of non-users of micro credit. (t = -2.810 p ≤ 0.10)

Generally, the revenue from sales of all poultry enterprise of users of micro credit was found to be significantly higher than the revenue from the sales of non-users of micro credit in the study (t = 2.391 p ≤ 0.10). It then means that credit use increased the value of output of poultry farmers in the study area, probably because of use of good quality inputs in adequate quantity and at the right time. The result agrees with the findings of Yazdani and Guanjal (1995) who used regression and discriminant analysis to measure the impact of credit and factor that influenced the use of loans by farmers and found that the performance of borrowers were significantly higher in terms of area cultivated and output. This was because borrowers cultivated more land and used better input.

Table 2: Revenue Obtained from Sales of Poultry Products by Respondents

Dependent variable	Group	Mean value	Std. Deviation	t. ratio	Df	Sig.
Revenue from eggs	Users	1930200	1377260	2.808	123	.006***
	Non-users	1258500	712760			
Revenue from spent layers	Users	853000	830143	-1.654	1	.346
	Non-users	2534400				
Revenue from broilers	Users	194230	192739	1.751	71	.084*
	Non-users	117220	146135			
Revenue from cockerels	Users	84900	46002	-2.810	19	.011**
	Non-users	207000	165638			
Total	Users	1960600	1564180	2.391	131	.018**
	Non-users	1321500	970305			

Source: Field Survey, 2016

*   Significant at 10%
**   Significant at 5%
***   Significant at 1%

Maximum Likelihood Estimates of the Stochastic Frontier Production Function
Effect of micro credit on the technical efficiency of farmers
The result of stochastic frontier regression model of poultry production is presented in Table 3. The gamma estimates which indicates that systematic influences that are unexplained by the production function are the dominant sources of random errors shows a value of 0.94 meaning that about 94 percent of the variation in the value of output of the poultry farmers could be attributed to the value of inefficiency in resource use. While the sigma squared this is significant at 1 percent attests to the goodness of fit and correctness of the distributional form around the composite error term of the model.

The result shows that inputs variables of value of feeds and water are significant at 1and 5 percent level respectively with positive coefficients implying that a one percent increase in the level of feeds and a five percent increase in the level of water will increase value of output by 0.85 and 0.089 percent respectively. The coefficient on the cost of feed was largest at 0.851 implying that value of feed is the most important component in egg production. This is in agreement with the findings Nkereumem *et al.* (2001) that the larger coefficient on feed implies that income from poultry will be more sensitive to cost of feeds.

The result of the inefficiency model shows that five out of eight variables were statistically significant in the value of efficiency. The significant variables were education of the farmers (-3.286) at 1%, sex of the farmers (-5.357) at 1%, credit dummy variable (-2.214) at 5%, household size of the farmers (3.861) at 1%and membership of association of the farmers (2.070) at 10%.

The negative coefficient for education implies that educated farmers are more likely to be efficient in terms of value of the output compared to their less educated counterparts at 1 percent. This is likely due to the fact that they have better access to information and good farm planning. This is in agreement with the findings of Olumayowa and Abiodun (2011) that experience and education significantly contributed to the reduction of the profit inefficiency. Similarly Tijani *et al.* (2006) concluded that profit inefficiency in poultry egg production can be reduced significantly with improvement in the level of education of sampled farmers.

Sex was found to be statistically significant at 1 percent level with a negative coefficient. This implies that

female in management of poultry enterprises may foster a more careful and accurate husbandry as one percent increase in the number of women in poultry production will decrease the value of inefficiency by 1.65 percent, this is in agreement with the findings of Aboki *et al*. (2013) that inefficiency in poultry production is less among female than male which may be due to the fact that women are more involved in family production and they stay more at home caring for family poultry, hence they have developed caring techniques superior to that of men.

The coefficient on credit dummy variable was found to be negative and significant at 5 percent level. This implies that farmer's access to credit enhances their timely acquisition of production inputs that would enhance productivity through efficiency. This is in line with the result of Ibrahim *et al*. (2014) on technical efficiency and its determinants in water melon Production in Borno State. This also agrees with the findings of Bethel (2008) on the demand for credit and its impact on productivity of poultry enterprise in Cross River State, Nigeria that credit have negative coefficient and statistically significant at five percent level and concluded that credit access was a determining factor of the efficiency of the farmers in the study area.

Household size and membership of association was found to be statistically significant at 1percent and 10 percent level respectively with a positive coefficient indicating that an increase in household size will increase the value of technical inefficiency, large family sizes might be a drain for business profit, as household expenditure, particularly the consumption will be high.

Table 3: Maximum Likelihood Estimates of the Stochastic Frontier Production Function

Variables	Coefficient	Std. Error	t- Value
Constant	8.6851600	0.31447733	27.617761
Chick cost	0.065237092	0.060592572	1.0766516
Vet cost	-0.047417823	0.053884077	-0.87999694
Feed cost	0.85192425	0.034846675	24.447791***
Cost of truck of water	0.089907513	0.041421567	2.1705483**
Constant	3.2137266	1.1600155	2.7704168
Age	-0.22490691	0.41364813	-0.54371553
Household size	1.0179425	0.26358048	3.8619799***
Education	-1.7822192	0.54222813	-3.2868438***
Experience	-0.75422571	0.59186811	-1.2743138
Sex	-1.6559222	0.30909503	-5.3573241***
Membership of association	0.62655790	0.30266160	2.0701599*
Training	-0.10773363	0.39476646	-0.27290471
Credit	-0.27779996	0.12543635	-2.2146687**
sigma squared	0.35934910	0.10297824	3.4895635***
Gamma	0.94393248	0.017923773	52.663716

Source: Field Survey, 2016

*Significant at 10%

**Significant at 5%

*** Significant at 1%

Technical efficiency estimates of poultry farmers.

The distribution of the technical efficiency estimates of the farmers is presented in Table 4. The mean technical efficiency of 0.89 implies that there is potential to increase the technical efficiency by 11 percent. Also the mean efficiency of users of micro credit is higher (0.91) compared to that of non-users (0.86). This shows that 95 percent of the farmers are between 76-100 percent efficient; 3 percent of the farmers are between 51-75 percent; and 2 percent is between 26- 50 percent efficient. This result shows that most small scale poultry farmers in the study area are highly efficient in using their inputs to maximum production using the available inputs.

Table 4: Distribution of Value of Technical Efficiency Estimate of Small-Scale Poultry Production in Kaduna Central Agricultural Zone. (N = 133)

Efficiency estimates	Frequency	Percentage (%)
0.26-0.50	2	1.50
0.51-0.75	4	3.01
0.76-1.00	127	95.49
Users of credit	94	70.68
Non-users	39	29.32
Mean eff. Of users	0.91	
Mean eff. Of non-users	0.86	
Mean eff. Of all Enterprise	0.89	

Source: Field Survey, 2016

Conclusion and implications

 This study explores the effects of micro-credit on the productivity of small scale poultry farmers in central Agricultural zone of Kaduna state, Nigeria. In order to increase the production of poultry products, it examines the effect of microcredit on the productivity of small scale poultry farmers. The study also Assess the effect of microcredit on the technical efficiency of small scale poultry farmers. The study found that the revenue from users of micro credit is higher than that of non users; also the study found out that poultry farmers are technically efficient in the production of poultry products using the available inputs at 89 percent. The study concludes that, Farm output increases with increase in feed and water. Also, sex, education and access to credit increased the technical efficiency of the farmers. The variables of household size and membership of association of the farmers decreased the farmers' technical efficiency. Therefore credit institutions should give due consideration to policy condition as more favorable terms during policy formulation will make it easier to obtain   loan while maintaining mutual benefit between farmers and the institutions. Such policy thrust needs to have more rural outlets with well-designed prudent loan utilization training to go along with loan disbursement. The study therefore suggests for further studies an impact assessment of micro credit on small scale poultry production in the study area. It also suggests for further studies the extension of this research work to the second largest town in Kaduna State (Zaria) where poultry production is also prevalent to have a comparative analysis of technical efficiency to identify the area that is less technically efficient in poultry production in order to improve.

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