DETERMINANTS OF POULTRY FARMERS' DECISION TO UTILIZE CREDIT: A CASE STUDY OF ABIA STATE, NIGERIA

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Abstract
This study analysed the determinants of poultry farmers' decision to utilize credit in Abia state, Nigeria. The study was based on primary data obtained using a multistage random sampling technique, 80 respondents were obtained. The data was analyzed using descriptive statistics, logit regression, cost and returns analysis 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 have a household size of 55.6% and 52.9% for non credit and credit users respectively. Seventy one percent and 65.7% non credit and credit users respectively has farming as their main occupation. The study shows that majority of the poultry farmers in Abia state uses personal savings for poultry farming. Result from the logit regression model shows that factors such as sex, age, level of education, farming experience cooperative membership, income, credit experience and loan are the determinants of poultry farmers' decision to use credit.

Introduction

Agriculture in Nigeria has remained the largest sector contributing nearly 39% to the Gross Domestic Product for the past two decades and employing nearly 60% of its workforce. Over 80% of the country's population living in the rural areas is directly or indirectly dependent on agriculture for its livelihood (NBS, 2005). The Nigerian's livestock resources consist of 13,885,813 Cattle; 34,453,724 Goat; 22,092,602 Sheep; 3,406,381 Pigs; 104,247,960 poultry (RIM, 1992). From these figures, poultry is about 58.72 percent of the total livestock production, which indicates the place of poultry sub sectors in the livestock industry. Poultry meat and eggs play a very useful role in bridging the protein gap in Nigeria. They are palatable and generally acceptable. This acceptability cuts across nearly all cultural religion boundaries in Nigeria. Lack of credit makes it difficult for the farmers to provide feed and other materials there by leading to decline in poultry production (Akanni, 2007). Hence, the importance of credit facilities for improved poultry production cannot be overemphasized.

Credit is an input used in production as well as a facilitator of the efficiency of other production inputs. Agricultural Credit is the amount of investment funds made available for agricultural production from resources outside the farm sector. Credit supply to farmers is widely perceived as an effective strategy in enhancing agricultural productivity (Philip *et al.,* 2008). It has been argued that if only sufficient agricultural finance was made available, the decline in the production and supply of poultry products in Nigeria, would improve (Oludimu *et al.,* 2004). Some of the determinants of poultry famers decision to use of credit include; location, size of poultry kept, household size, level of education, visit by extension agents, etc. Mahmood *et al.,*(2007) stated that the introduction of easy and cheap credit is the quickest way for boosting agricultural production. Access to credit is one major link in the chain of poultry development. Various studies identified the smallholder farmers are contributing the greatest force in food production in Nigeria. Unfortunately, these farmers have meagre financial resources to undertake innovative farming activities (Onyenucheya and Ukoha, 2007). The recognition of credit as a powerful instrument for the development of agricultural sector has led to a multitude of programmes on agricultural credit, cooperative and integrated rural development in the past few decades (Nwaru,2004). These schemes include the Nigerian Agricultural Cooperative Bank (NACB), the People's Bank (PB) and the community Banks (CB).

Farm credit can be obtained from either the formal source which include the banks and other government owned institutions or the informal sources which are self-help groups, money lenders, cooperatives and non-governmental organizations(NGOs). The informal sources of credit is more popular among small scale farmers which may be due to the relative ease in obtaining credit devoid of administrative delay, non- existence of security or collateral, flexibility built into repayment which is against which is against what is obtained in the formal sources. Guirkinger and Boucher (2005) stated that productivity of credit constrained households depend on their endowment or productive assets and the credit they obtained from informal lenders while Ojo (2005) observed that the institutional lending system has failed to meet the objective for which it is set up. This study therefore examined the socio economic characteristics of poultry farmers in Abia state, identified the various sources of credit and the level of institutional and non institutional credit available to the poultry famers and analyzed the determinants of poultry famers decision to utilize credit.

Methodology

The study area was Abia State. Abia State is located in South Eastern part of Nigeria. Abia State lies within approximately latitudes 4^0 40^1north, and longitude 7^0 10^1 and 8^0 east. 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, and an average household size of about six persons per family with 63% in agricultural production (FOS, 1999). This largely informed the choice of the state for the study. Abia state comprises 17 Local Government Areas (L.G.As) divided into three agricultural zones namely, Aba, Ohafia, Umuahia. Abia State and offers an interesting scenario in the study of agricultural commercialization. The state being mainly agrarian with expanding population shows evidence of outmigration 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 (Nigeria information and guide – Nigeria Galleria).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 is done based on the number of commercial poultry producers and marketers, availability of credit institution, availability of data and researcher's 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 choosen 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.In the third stage, the random selection of five (5) communities from each of the Local Government was employed making it 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 was used for the purpose of this study.

Analytical Technique

Descriptive statistical tools such as means, frequencies, and percentages were employed in analyzing the socio economic characteristics of the poultry farmers, the various sources of credit available to the poultry farmers and the level of institution and non institutional credit available to the poultry famers. Logit regression was used to analyse the determinants of poultry farmer's decision to utilize credit. The regression model stipulated below was used.

$$\mathbf{Y_i = \log \frac{P1}{1-P1} = \beta_0 + \beta_1 X_1 + \mathcal{E}_1}$$

Y_i = credit use decision of i^{th} poultry farmer (1 = if acquired credit, 0 = if otherwise)
X_1 = Gender (1 =male, 0 =female)
X_2 = Age (years)
X_3 = Marital status dummy
X_4 = Household size (number)
X_5 = Level of education in years
X_6 = Main occupation (1= farming, 0 = otherwise)
X_7 = Source of credit dummy
X_8 = Credit use experience (years)
X_9 = Annual farm income in Naira
X_{10} = Extension agent visit (number of visit)
X_{11} = Amount borrowed in Naira
X_{12} = size of feed in naira
U_1 = Error term.

Results and Discussion

Socio - economic characteristics of poultry broiler famers

The results of the analysis of the socioeconomic characteristics of the broiler farmers in Abia State are presented in Table 1. Table 1 shows the distribution of the age, sex, household size, level of education, and main occupation of the poultry broiler producers in the study area. Age is an important factor linked with production efficiency in agriculture. This is more apparent in the poultry farm where the owner is the farm manager because most of the activities in the farm are done manually. 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. Also the willingness to try and adopt new innovations also tends to follow similar trend (Otunaiya *et.,al.*, 2014). 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 study shows that the mean age of non-credit users was 56 while that of credit users was 63. It was observed that those between the ages of 41-50 had the highest representative. 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. It was also observed that the farmers who were between the age of 21-30 are employees of different farms whose owners could be of age of 41 and above.

These findings 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, 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.

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 2015

Analysis of gender of poultry farmers in the study area as shown in the 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). The study also shows that majority of the poultry famers in the study area have a household size that falls between 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. Efiong (2005) and Idiong (2005) reported that relatively large household size enhances the availability of labour. Olagunju and Babatunde (2011) also reported that the average household size of poultry farmers in south-western Nigeria is 7 which show large family size.

Education is one of the major socio economic 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 new 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 show that poultry farmers having 6-10years of farming experience constitute majority (57.8% for non credit users, 48.6% f0r 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.

Analysis of various sources of credit and institutional and non institutional credit available to poultry broiler farmers in the study area

Sources of credit of the poultry broiler farmers in the study areas

The distribution of the respondents according to the sources of credit available to the poultry farmers is presented in Table 2.

Table 2: sources of credit available to the sampled poultry broiler farmers

Credit source	frequency*	percentage
Personal saving	45	56.3
Bank	5	6.3
Cooperative	14	17.6
Personal savings and friends	5	6.3
Personal savings and bank	4	5.0
Personal savings and money lenders	7	8.5
Total	80	100.0

Source: Field survey 2015, *=Multiple responses

Result from the analysis indicated that 56.3% of the poultry farmers in the study area sourced their finance internally from personal savings while 6.3% of the farmers sourced from bank only. This could be as a result of limited collateral by the farmers and the fear of the risk associated to poultry production by the banking institution. Some poultry farmers sourced their finance from cooperative (17.6%) this could be because of the head of the household being a member of a cooperative. Some poultry farmers sourced their fund from a combination of both personal savings and bank (5.0%) and also personal savings and friends (6.3%). The combination of the personal savings with other sources of loan by the farmers could be to enable the poultry farmers to sustain their financial base with assured increased output level.

Level of institutional and non institutional sources of fund to the poultry broiler producers in the study area

The result of the distribution of the farmers according to the institutional and non institutional sources of fund available to them is presented in Table 3.

Table 3: institutional and non institutional sources of fund

Credit sources	frequency*	percentage
Institutional	23	65.7
Non-Institutional	12	34.3
Total	35	100

Source: Field survey 2015, * = Multiple responses

The percentage distribution of institutional credit and non institutional credit supplied to the poultry farmers in the study area is presented in Table 3. The table shows that majority (65.7%) of the poultry farmers obtained institutional credit of while some (34.3%) of the poultry farmers obtained non-institutional credit. This could be as a result of the high interest rate attached to non institutional credit.

Determinants of poultry broiler farmer’s decision to the use of credit

The results of the regression analysis of the factors that influenced the farmer’s decision to utilize credit is presented in Table 4. Table 4 presents the result of the estimated model. The R^2 and the Likelihood Ratio value indicate a goodness of fit for the equation. The variables relating to Age, education, farming experience, cooperative, income, credit experience and loan are the significant variables or determinants of poultry farmer’s decision to the use of credit. Sex was negatively significant at 10% this implies that the more increase in the number of women that involve in poultry farming the more the decision to use credit will reduce. This could be as a result of women not willing to take risk of borrowing credit during production.

The coefficient of age was statistically significance at 1% level and negatively related to decision to use credit. This means that as the age advances, access to credit decreases and vice versa. This could be as a result of old people not being so much interested in productivity rather in security. Education was positively significant and at 1% .This implies that as the household attain higher level of education, their access to credit increases. Better education has the effect of enabling households’ access and conceptualizes information on improved farming methods and other related issues capable of enhancing their welfare (Apata*et al.,* 2010). This is desirable because according to Obasi (1991), the level of education of a farmer not only increases his farm productivity but also enhances his ability to understand and evaluate new production techniques. The implication is that these respondents are better positioned to take advantage of new techniques and innovations that could improve agricultural productivity and boost food security. The coefficient of experience of the households was significant 1% level and showed positive relationship with access to credit. This implies that as households gain more farming experience their access to micro credit increases. Many years of farming have shown to be associated with efficient management and higher output (Owuor*et al.,* (2007) noted that farmers with long years of experience have acquired better understanding on both technical and economic issues and improves the living standard.

Table 4: Logit regression estimates of the determinants of poultry farmer's decision to the use of credit

Parameter	Estimate	Std. Error	Z-value
Sex	-0.512	.278	-1.840*
Age	-0.042	.021	-2.039***
Household Size	0.035	.049	0.717
Level of education	0.035	.030	3.766***
Occupation	0.061	.315	0.193
Farming experience	0.030	.032	9.950***
Cooperative membership	0.427	.273	3.062***
Income	0.000	.000	4.936***
Credit experience	-0.130	.084	-11.535***
Feed	-0.000	.000	-0.585
Loan	0.000	.000	11.982***
Intercept	1.393	.792	4.759***
Chi-square	256.550		
Df	69		
P < 0.01	0.000		

Source: Field Survey 2015

The coefficient of membership of cooperative societies or other farmers' associations was significant at 1% level and exhibited a positive relationship with household access to credit. This implies that access to credit was higher in a household whose head was a member of a cooperative society. This might be as a result of various benefits accruable to members of cooperative societies, such as credit facilities, access to improved production inputs, and access to information that could enhance their productive capacity (Asogwa et al., 2012). Income and credit experience were both significant, this shows that both have significant effect on decision to use credit. As income increases, farmers' decision to use credit also increases. Also as credit experiences increases decision to use credit decreases as shown by the negative coefficient loan was significant at 1% and positive related to the decision to use credit this implies that loan enhances their decision to use credit level. This corroborates the work done by *Nwaru (2004)* where he reported that, farmers became more efficient where more credit where available for production. The result also confirms similar findings by Ajibefun and Aderinola (2003), Bravo-Ureta and Evenson (1994) and Hashmati and Mulugata (1996) that a farmer who has access to credit will be able to obtain the necessary production input timely, and therefore, able to improve his/her of productivity.

Conclusion

Insufficient funding of poultry has limited the spate of development of the industry in Abia state Nigeria. This has often caused low level of production output in the industry. In this study therefore, the determinants of poultry famers' decision to utilize credit was analyzed. The sample consisted of 80 poultry broiler farmers who were selected through multistage sampling technique. For effective poultry production in Abia state, there is need to improve on the level of education of the farmers, years of experience in poultry farming, feeding of the poultry, cooperative farming, etc. However, institutional credit should be made readily available to the poultry famers.

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