

**ANALYSIS OF POULTRY FARMERS' PARTICIPATION IN  
NIGERIAN AGRICULTURAL INSURANCE SCHEME IN JOS SOUTH LOCAL  
GOVERNMENT AREA OF PLATEAU STATE, NIGERIA**

**Vihi, S. K.<sup>1</sup>, Tor, L.G.<sup>2</sup>, Jesse B.<sup>1</sup>, Dalla A.A.<sup>1</sup>, Owa, G.T.<sup>1</sup>, Shekarau, T.<sup>1</sup>, and Sadiku, Y.<sup>3</sup>**

<sup>1</sup>Department of Agricultural Extension & Management, Federal College of Forestry, Jos  
Plateau State, Nigeria

<sup>2</sup>Department of Agricultural Technology, Federal College of Forestry Mechanization  
Afaka, Kaduna State, Nigeria

<sup>3</sup>Department of Forestry Technology, Federal College of Forestry, Jos, Nigeria.

**Corresponding Author:** [vihisam@gmail.com](mailto:vihisam@gmail.com)

**Abstract**

This study analyzed poultry farmers' participation in Nigerian Agricultural Insurance Scheme in Jos South Local Government Area of Plateau State, Nigeria. One hundred and thirty six (136) poultry farmers were sampled for the study. Multistage sampling technique was used in selecting the respondents for the study. Primary data were collected through the use of questionnaire and interview schedule and were subjected to both descriptive and inferential statistics. Findings from the study show that majority (65%) of the respondents were males and had a mean age of 44 years. Majority (90%) of the respondents were married and had a mean household size of 5 persons. The study also showed that 50% of the farmers had tertiary education, a mean farming experience of 9 years and average stock size of 1795 birds. The result also shows that 71% of the respondents did not belong to any farmers' association and 73% had no contact with extension services. The result further shows that 79% of the respondents had no access to credit for their farming enterprise. On awareness and participation in agricultural insurance scheme, 70% of the respondents were aware of the existence of Nigerian Agricultural Insurance Scheme (NAIS), however only 31% of the farmers' participated in the insurance scheme. The logit regression result shows that age (-.0538), sex (-.7837), access to credit (1.2366) and membership of association (-1.2068) were found to be significant factors influencing farmers' participation in NAIS. Major constraints to participation in NAIS by poultry farmers' include; rigorous procedure in indemnity payment (79%), high cost of premium (74%), delay in assessment of losses (70.5), inadequate knowledge of insurance (40%), disbelieve in insurance companies (29%) and low compensation (26%). In order to strengthen participation in agricultural insurance scheme, the study recommended that NAIC should ensure prompt and timely payment of

compensation (indemnity). By so doing it will boost the confidence and trust among the farmers who do not have absolute confidence in the insurance scheme. NAIC should also review downward the amount of premium paid by the farmers to a more affordable and attractive level. This will encourage the continued participation of new and existing farmers in the insurance system. NAIC should ensure prompt and timely assessment of losses for onward compensation. NAIC and the Government should step up awareness campaigns to educate more farmers about the need to have agricultural insurance to safeguard their investments since agriculture is a risky business.

**Key words:** Analysis, participation, poultry farmers, agricultural, insurance scheme.

## **Introduction**

Nigeria's agricultural sector is the second most important economic sector after oil and the largest employer of the labor force, employing 70% of the country's labor force (United States Department of Agriculture (USDA), 2013, National Bureau of Statistics (NBS), 2014). It contributed about .40.07% in 2010 and 22% in Gross Domestic Product (GDP) (NBS, 2014). Agriculture is divided into four sub-sectors, namely crop production, livestock production, forestry and fisheries. In 2015, the share of each sub-sector in the agricultural sector in 2015 were crops (87.53%), livestock (8.89%), fisheries (2.42%) and forestry (1.13%) (NBS, 2016). The Nigeria's livestock population consists of 16.3 million cattle; 40.8 million goats; 27 million sheep; 3.7 million pigs and 151 million poultry (Nasiru *et al.*, 2012). Based on these figures, poultry alone accounted for more than 60% of the total livestock population which dominates the livestock industry. Poultry can simply be described as birds of economic importance to humans, providing meat and eggs (Adeyonu *et al.*, 2016). Meat production requires fast-growing birds that can quickly convert feed into meat quickly to market weight, while egg production requires good laying birds to produce eggs. The most important poultry species is the domestic fowl or chicken because they are readily available and makes nutritious dishes. Turkeys, ducks, guinea fowl, geese and pigeons are other examples of birds that have been classified as domesticated birds. Poultry farming plays an important role in the development of Nigeria's economy. It acts as a "safety net" by providing cash in case of an emergency. Its role in rural livelihoods and food security is enormous (Adeyonu *et al.*, 2016). The industry provides employment opportunity for the populace, thereby serving as a source of income to the people. Also, it provides a good source of animal protein in meat and eggs which have a high nutritional value (Nasiru *et al.*, 2012). Poultry

meat (chicken) and eggs are palatable and generally acceptable with little or no cultural and religious boundaries in Nigeria. Chicken and egg contribute to a nutritious, balanced diet which is especially important for children, pregnant and nursing mothers as well as people who are ill.

Nigerian farmers are increasingly facing risk factors such as droughts, floods, diseases, pests, hurricanes, accidents, fires, thefts, losses and other unplanned event that are not easily predicted and that is why there is a serious threat to the success of farming enterprise in Nigeria (Eleri *et al.*, 2012). The poultry industry, like any other sub-sector of agriculture, is exposed to risks and uncertainties arising from the effects of natural hazards such as drought, flood, fire, hurricane, lightning, pest and disease. The poultry industry in Nigeria has suffered major losses affecting both poultry farmers and poultry consumers. Birds are generally more susceptible to diseases. A single attack can wipe out thousands of birds or even an entire farm. One case was the bird flu attack on the Nigerian poultry industry in 2006. The attack nearly brought the Nigerian poultry industry to a standstill, resulting in the loss of 44,000 laying hens, 32,000 broilers, 25 geese and 5 turkeys in Kaduna State. In Kano State, 43,000 laying hens, 15 broilers, 43 ducks, 28 geese, 20 turkeys, and 2 ostriches were killed while in Katsina State, 41,000 laying hens and broilers, 28,000 turkeys, 12 geese, and 1 ostrich were eliminated. In response to the need for a specialized agricultural development program to address the fundamental issues of risk and uncertainty, the National Agricultural Insurance Scheme (NAIS) was established in 1987, but commenced operations in 1989. Later on, the Nigerian Agriculture Insurance Corporation (NAIC) was subsequently established to manage it. It was set up to manage agricultural insurance as a special line of property insurance for farm firms. In fact, the main principle behind the establishment of NAIS is that risk reduction in the agriculture sector will increase efficiency. This will be achieved by meeting the ongoing demand from credit institutions and Nigerian farmers for appropriate risk mitigation measures. The main objective of the scheme was to reduce the impact of risks and uncertainties to an acceptable minimum. It aims to encourage agricultural production by reducing or eliminating the need for special assistance previously provided to farmers by governments during agricultural disasters. By the decree establishing this plan, it is allowed to incur losses up to 200% of its premium income (Epetimehin, 2011).

Agricultural insurance is the stabilization of wage prices and the supply of agricultural products through regular and deliberate savings and accumulation of funds in small portions at favorable times to protect participants in difficult times. The mitigation

effects of accumulated savings reduce farmer's loss, malaise and fear. Thus, farmers return to work regardless of the tragedy experienced, provided the hazard is covered. Ajieh (2010) argued that because farmers cannot predict the likelihood of any of these risks occurring and cannot bear these risks and uncertainties alone, they face the option of transferring or sharing the risks associated with the day-to-day management of their farms on several people or companies. Agricultural insurance offers good prospects for the transformation of the agricultural sector. By compensating farmers for the risks involved in the scheme, they are placed on the same close financial basis to work after losses. Along with the multiple benefits of the scheme, farmers involved in high-risk and highly uncertain livestock production are expected to benefit from this scheme. Agricultural insurance encourages farmers to invest more in agricultural production and promotes confidence in adopting new and improved agricultural practices, allowing farmers to share or transfer risks and uncertainties associated with their agricultural operations. This is one of the notable methods. It improves access to credit by financial institutions as an insurance cover and also as an additional guarantee and ultimately provides financial support to farmers in the form of compensation that guarantees the continuity of the agricultural business.

However, despite the existence of insurance services from the Nigerian Agricultural Insurance Corporation and other private companies in Nigeria, farmers' participation in insurance activities is low as it covers less than 1% of the total population of farmers (Eleri *et al.*, 2012). With this in mind, it becomes pertinent to investigate the factors that influence the willingness of poultry farmers to participate in the agricultural insurance scheme and the potential barriers to their participation in the scheme especially in Jos South Local Government Area of Plateau State, Nigeria. According to Ewubere and Ozar (2018), Nigerian farmers are not keen in participating in insurance schemes. The reason for this may not be less than the unsatisfactory image of the insurance schemes regarding absence or too much delay in compensation, and this problem has generated mixed feelings towards agricultural insurance by potential farmers and, as a result, farmers are becoming reluctant to take insurance cover. In addition, given the very low income, the small size of farms for subsistence production, large-scale ignorance and poverty and the negative perceptions of others on the activities of insurance companies in other areas, farmers are generally reluctant to enter the insurance market not to mention small payments in the form of premiums in return for their agricultural risks (Ewubere and Ozar, 2018). Although researchers such as Farayola *et al.*, (2013), Babalola (2014), Akindunde (2015), Okeke-Agulu and Salihu (2019) have

worked on the factors affecting poultry farmers willingness to participate in agricultural insurance plans elsewhere, preliminary investigation reveals that there is still a dearth of empirical studies on the importance of agricultural insurance and the challenges faced by participants especially in the study area. This has created a knowledge gap in the literature on poultry farming particularly in Jos South Local Government Area of Plateau State. The aim of this study is to fill this gap. Consequently, the main objective of this study is to analyze the participation of poultry farmers in the National Agricultural Insurance Scheme in the Jos South Local Government Area of Plateau State, Nigeria. The specific objectives of the study are to;

- i. describe the socio-economic characteristics of the poultry farmers in Jos South Local Government Area of Plateau State,
- ii. ascertain the level of awareness of agricultural insurance scheme among poultry farmers in the study area,
- iii. examine the level of participation of poultry farmers in agricultural insurance scheme in the study area,
- iv. determine the likely factors influencing poultry farmers participation in agricultural insurance scheme in the study area; and
- v. identify the constraints encountered by poultry farmers in participating in agricultural insurance Scheme in the study area.

### **Hypothesis**

The following null hypothesis was tested thus;

**H<sub>0</sub>:** There is no relationship between farmers' socio-economic characteristics and their participation in agricultural insurance scheme.

### **Methodology**

The study was conducted in Jos South Local Government Area of Plateau State, Nigeria which is geographically located between latitude 9° 30' to 10° 00'N and longitude 8° 30' E of the Green which meridian. It is located in the northwestern part of the state with its headquarterd in Bukuru, 15 km from the state capital Jos. The local government consists of four districts: Du, Gyel, Kuru and Vwang. The Local government has a population of 650,835 (National Population Commission(NPC), 2006) with an average land area of 1, 037km<sup>2</sup>. It

borders the local governments of Barkin-Ladi to the south, Ryom to the southwest, Jos-Este to the east, and the local government of Bassa to the west. It is known for its cold and rocky nature due to its high altitude of over 1450 meters above sea level. The coldest period is between November and February, with an average daily temperature of 18°C while warmer periods occur between March and April. The rains fall between May and October, with a peak in August. The mean annual rainfall varies between 137.75cm and 146.0cm. The Local Government is a semi-urban location but served with vast agricultural land, with mining ponds readily supplying water for irrigation. Common edible crops grown include rice, corn, Irish potatoes, yams, acha, sweet potato, cocoyam, tomatoes, peanuts, and assorted vegetables. Livestock such as cattle, goats, sheep, chicken (Poultry), pigs etc. are reared in the Local Government for both commercial purposes and as meat for home consumption.

### **Sampling Procedure and sample size**

The population for this study consists of both the registered and unregistered commercial poultry farmers in the four district of Jos South Local Government Area of Plateau State. They include: Gyel, Du, kuru, and Vwang districts. A list of all the registered commercial poultry farmers in the Local Government Area was obtained from the local government office of Poultry Association of Nigeria. However the number of registered poultry farmers in the study area was limited as many of the poultry farmers in the study area did not register with the Poultry Association of Nigeria. Consequently both registered and unregistered commercial poultry farmers were randomly drawn from all the districts of the LGA to give a sample size of one hundred and thirty six (136) respondents used for the study. Data were collected through the administration of questionnaires and oral interview. The questionnaire was designed in line with the objectives of the study. Both descriptive and inferential statistics were used to analyze the data. Descriptive statistics such as frequency counts, mean, percentages and Logit regression were used to analyze the data collected.

### **Model Specification**

The logit regression model is a unit or multivariate technique which allows for estimating the probability that an event occurs or not by predicting a binary dependent outcome from a set of independent variables. The logit model is based on cumulative logistic probability function and it is computationally tractable. According to Gujarati and Porter (2009), it is expressed as:

$$P_i = E(Y = 1 | X_i) = B_1 + B_2X_2 \dots \dots + B_3X_3 \dots \dots \dots B_nX_n \dots \dots \dots (1)$$

For ease of estimation, equation (1) is further expressed as:

$$P_i = \frac{1}{1 + e^{-z_i}} = \frac{e^{-z_i}}{1 + e^{-z_i}} \dots \dots \dots (2)$$

Where:

$P_i$  = probability of an event occurring

$$P_i = B_1 + B_2 X_i$$

The empirical model of the logistic regression for study assumed that the probability of the farmers' participation in Agricultural insurance scheme is expressed as:

... .. ( 3 )

$$P_i = \frac{e^{b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8}}{1 + e^{b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8}}$$

$P_i$  ranges between zero and one and it is non-linearly related to  $Z_i$ ,  $Z_i$  is the stimulus index which ranges from minus infinity to plus infinity and it is expressed as:

$$Z_i = \ln \left( \frac{P_i}{1 - P_i} \right) = b_0 + b_1 X_1 + b_2 X_2 + \dots + b_8 X_8 + u \dots \dots \dots (4)$$

To obtain the value of  $Z_i$ , the likelihood of observing the sample was formed by introducing a dichotomous response variable. The explicit logit model was expressed as:

$$Y = b_0 + b_1 X_1 + b_2 X_2 + \dots + b_8 X_8 + u \dots \dots \dots (5)$$

Where:

$Y$  = dichotomous response variable (1 for farmers who participated in Agricultural insurance scheme; 0 otherwise)

$X_1$  = Age of farmers (Years)

$X_2$  = Educational level of farmers (Years of formal education)

$X_3$  = Sex (1 if male, 2 female)

$X_4$  = Poultry farming experience (Years)

$X_5$  = Household size (number of persons)

$X_6$  = Awareness of agricultural insurance (Yes= 1, No= 0)

$X_7$  = Farm size (Numbers of birds)

$X_8$  = Access to credit (1 if yes, 0 if otherwise)

$b_1 - b_8$  = Coefficients to be estimated

$b_0$  = Constant term

$u$  = error term

## **Results and Discussion**

### **Socio-economic characteristics of the sampled poultry farmers**

*The results of socio-economic characteristics of the respondents* are presented in Table 1.

The age distribution of the respondents shows that 45% of the farmers were between the ages of 41 and 50 years. About 31% were within 31-40 years, 20% were above 50 while 4.0% were within 21-30 years. The mean age of poultry farmers in the study area was 44 years. This portrays that most of the poultry farmers are in their active and productive age when they can put in their best for optimum productivity. This age would motivate them to participate in agricultural insurance schemes as young people are prepared to take risks. Result in Table 1 further shows that majority (65%) of the poultry farmers in the study area were males while 35% are females. The predominance of male farmers could be attributed to the fact that poultry enterprise is a highly risky venture, labour intensive and characterized by uncertainties which in most cases can only be handled by men. The findings are consistent with those of Babatunde *et al.* (2012) and Bablola (2014), who reported that the majority of Nigerian poultry farmers are male. The marital status of the respondents shows that 90% of the respondents were married while 10% were single. This simply implies that most of these farmers were responsible and had a family to maintain. The result in Table 1 also shows that 60% of the poultry farmers in the study area had a household size of 4-7 persons, 32% had 1-3 persons while 8% of the farmers had more than 7 persons. The mean household size of respondents in the study area is 5 persons. The high literacy level of the farmers and the current economic crunch in the country may be responsible for the modest family size. The modest household size could invariably be an advantage to participation in NAIS if the income is adequate because the cost of maintaining the family may not be very high. Smaller household size means extra funds at the disposal of the household head which could enable him/her deploy such funds into the acquisition of an insurance policy to hedge against any eventual loss. This study is in consonant with Otunaiya *et al.* (2015) who revealed that the average family size of poultry farmers in Ibadan, Oyo state was five persons.

The result also revealed that 59.5% of the poultry farmers had tertiary education, 19% had secondary education, 12% had primary education while the remaining 9.5% had no formal education. This implies that there is high literacy level among poultry farmers in the study area. This is expected to have positive influence on their decision to participate in insurance

policy. The findings concur with that of Babalola (2014) who reported a high literacy rate among poultry farmers in Nigeria. The distribution of the poultry farmers by years of farming experience shows that 47% of the farmers had between 6-10 years farming experience, 26% had between 11 and 15 years farming experience. Also, 21% had less than 5 years of poultry farming experience while 6% had more than 15 years of poultry farming experience. The mean years of farming experience among the poultry farmers was 9 years. The result implies that the farmers had reasonable years of working experience to have gained practical experience about some of the risks and uncertainties associated with poultry production. Given the high risks and uncertainties that poultry farming is associated with, high literacy level coupled with farmers experience in poultry farming is expected to have positive impact on their decision to participate in NAIS. The result further showed that 33% of the farmers had stock size of 1001- 2000 birds, 29% had stock size of between 2001 and 3000 birds, 26% had stock size of less than-1000 birds while 4% had stock size of 4000 birds and above. The mean stock size of poultry farmers in the study area is 1795 birds which may be considered as small. Farmers are more willing to purchase insurance if they have larger than average farm sizes. In general, larger farm sizes reflect greater managerial capacities and perhaps economies of scale and scope in the utilization of various risk management practices. Insurance users are expected to operate larger farms and to have intentions for expansions. Babalola (2014) noted that insurance is positively linked to the size of the farm, whether agricultural (cultivated area) or financial (total assets). The stock size (number of birds) is a strong determinant of poultry farmers' participation in NAIS. This variable is positively correlated with farmers' participation in the scheme, thus implying that farmers who invested more in their businesses have a higher probability of insuring their farms than their colleagues with lower levels of investments. The result from Table 1 also indicate that 57% of the respondents were members of associations such as Poultry Association of Nigeria and other cooperative societies while the remaining 43% did not belong to any association. Membership of farmers' association may have a positive effect on participation in NAIS because these associations serve as veritable platforms and useful channels of informing and educating their members about government policies. The result further indicates that majority (79%) of the farmers had no access to credit for poultry farming while the remaining 21% had access to credit for poultry business. The implication is that farmers that have access to credit are more likely to participate in insurance schemes than their members who do not have access to credit. The result also revealed that majority (73%) of the farmers in the study area had no contact with

extension agent since the last one year while only 27% had contact with extension agents. This may be responsible for the low adoption of NAIS by the poultry farmers. Farayola *et al.*, (2013) and Babalola (2014) also reported low participation of poultry farmers in NAIS. The major pre-occupation of the extension worker is the education of farmers about government policies and their effects on their farming business. The high farmer- extension worker ratio in the country may partly be responsible for the poor coverage of farmers by extension agents. Muhammad *et al.* (2014) opined that access to extension services by farmers in Nigeria is poor.

**Table 1: Distribution of Respondents Based on their Socio-economic Characteristics (n=136)**

Variable	Frequency	Percentage	Mean
<b>Age (years)</b>			
21- 30	6	4.0	
31- 40	42	31.0	
41 – 50	61	45.0	
50 above	27	20.0	44.0
<b>Sex</b>			
Male	89	65.0	
Female	47	35.0	
<b>Marital status</b>			
Single	123	90.0	
Married	13	10.0	
<b>Educational level</b>			
Primary	16	12.0	
Secondary	26	19.0	
Tertiary	81	59.5	
Non formal education	13	9.5	
<b>Household size (number)</b>			
1-3	43	32.0	
4-7	82	60.0	
>7	11	8.0	5
<b>Stock size (No. of birds)</b>			
< 1000	36	26.0	
1001-2000	45	33.0	
2001-3000	40	29.0	
3001-4000	9	6.6	
>4000	6	4.0	1795
<b>Farming experience (years)</b>			
< 5	28	21.0	
6-10	64	47.0	
11-15	36	26.0	
>15	8	6.0	9
<b>Extension contact</b>			
Yes	37	27.0	
No	99	73.0	
<b>Access to credit</b>			
Yes	28	21.0	
No	108	79.0	
<b>Membership of farmers' association</b>			
Yes	77	57.0	
No	59	43.0	

### **Awareness of Agricultural Insurance Scheme**

Results in Table 2 revealed that 70% of the respondents were aware of Nigerian Agricultural Insurance Scheme (NAIS) and what it entails. This implies that majority of the respondents were aware of the scheme. Only 30% of the farmers were not aware of the insurance scheme. Expectedly, farmers' awareness of NAIS would positively influence their decision to participate in it. The finding agrees with Farayola, *et al.* (2013) who reported that the majority of poultry farmers in Kwara State were aware of NAIS. However, this finding contradicts the assertions of Oyinbo *et al.* (2013) that most farmers were not aware of agricultural insurance scheme.

Table 2: Distribution of Respondents according to Awareness of Insurance

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
Aware	41	30.0
Not aware	95	70.0
<b>Total</b>	<b>136</b>	<b>100</b>

### **Participation in Agricultural Insurance**

Table 3 reveals that 69% of the respondents did not insure their poultry farms, while 31% insured their poultry farms. This result indicates low participation of respondents in agricultural insurance. This implies that NAIC officials and extension agents still need to improve on enlightening poultry farmers to participate in the insurance policy since only about 31% of them participated in the scheme. The above finding agrees with that of Tologbonse *et al.* (1995) who found that out of 51.7% of farmers that were aware of agricultural insurance, none of them took agricultural insurance policy. They concluded that farmers' awareness of agricultural insurance was not a major determining factor for participation.

Table 3: Distribution of Respondents according to Participation in Insurance

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	42	31.0
No	94	69.0
<b>Total</b>	<b>136</b>	<b>100</b>

### **Factors influencing poultry farmers' participation in agricultural insurance scheme**

The result of Logit regression showing the factors influencing poultry farmers' participation in agricultural insurance scheme is presented in Table 4. The statistical test showed that the estimated model had a good fit with chi-square statistics significant at 1% level of significance. This implies that the variables specified in the model are relevant in explaining the participation decision of the respondents. Also, the Log-likelihood statistic ratio (LR) of 71.82 was significant, meaning that the independent variables included in the model jointly explained the probability of the poultry farmers' decision to participate in NAIS. Four out of eight predictors, namely; age sex, access to credit and membership of association were statistically significant at various levels of probabilities.

The co-efficient of age of the farmers was found to be negative and significant at 10% level of probability. This implies that as the farmers grow older, the tendency of participation in Agricultural Insurance Scheme reduces. This variable is expected to be negatively related with participation in agricultural insurance. The reason is that older farmers seem to be more risk averse and somewhat less inclined to adopt innovative farm management practices such as insurance than younger ones (Njoku, 1991). Young farmers tend to be more entrepreneurial and flexible in decision making and are more willing to adopt new ideas. Thus, older farmers are likely to participate less in agricultural insurance than the younger ones.

Gender of the poultry farmers was found to be negative and significant at 1%. This implies that female poultry farmers are more likely to insure their poultry farms than the male poultry farmers. This result contradicts the finding of Okeke-Agulu and Salihu (2019) who reported a positive significant relationship between gender and participation in agricultural insurance. The expected sign of the coefficient of gender is positive. The reason is that women are generally discriminated against in terms of access to farm inputs and information. For example, women's exclusion from local groups such as farmers' groups may prevent them from receiving credit, extension and insurance advice. Also, women tend to be involved in the production of relatively low-return enterprises that are not included in formal sector lending or insurance programmes (Quisumbing *et al.*, 1999).

The co-efficient of access to credit by the farmers was also found to be positive and significant at 5%. This conforms to the *a priori* expectation that, the higher the access to credit by the farmers, the higher their participation in Agricultural Insurance.

Also, membership of association is negatively related to the probability that a poultry

farmer will participate in NAIS at a critical level of 5%. This implies that poultry farmers who are members of one association or the other are more likely not to participate in NAIS compared with their counterparts who do not belong to any association. This is against *a priori* expectation as the expected sign of the coefficient for membership of cooperative is positive. The reason is that membership of associations enhances access to information on insurance and credit facilities to farmers.

Table 4: Logit regression estimates of factors influencing poultry farmers' participation in Agricultural Insurance Scheme

Variable	Coeff.	Std. Err.	z	P> z
Constant	.5083	1.8512	0.27	0.784
Age	-.0538	.02831	-1.90*	0.057
Sex	-.7837	.4761	-1.65***	0.100
Household size	-.0002	.0002	-1.04	0.299
Farm size	.5437	.5288	1.03	0.304
Access to credit	1.2366	.4940	2.50**	0.012
Membership of association	-1.2068	.4904	-2.46**	0.014
Low compensation	.4295	.4724	0.91	0.363
High cost of premium	.5689	.5076	1.12	0.262
Log likelihood = -71.8265				
Pseudo R <sup>2</sup> = 0.1456				
LR chi2(8) = 24.49				
Prob > chi2 = 0.0019				
No. of Observations = 136				

\*, \*\*and\*\*\*=Significant at 10%, 5% and 1% probability levels respectively

### Test of Hypothesis

**Decision:** Result of the logit regression in Table 4 reveals that two of the socio-economic variables; sex and age were found to have significant relationship with poultry farmers' participation in Agricultural Insurance. The null hypothesis was rejected and the alternative accepted. This indicated that, there is significant relationship between the farmers' socio-economic characteristics and participation in Agricultural Insurance scheme.

### **Constraints to Participation in Agricultural Insurance**

Results in Table 5 show that rigorous procedure in indemnity payment ranked first with 79% followed by high cost of premium (74%), delay in assessment of losses (70.5), inadequate knowledge of insurance (40%), disbelieve in insurance companies (29%) and low compensation (26%) were constraints to poultry farmers' participation in agricultural insurance. Administrative bureaucracy and rigorous procedures in claim settlement is a major challenge faced by the farmers in participating in Agricultural Insurance Scheme. This has the tendency of making the farmer withdraw from Insurance Scheme because of the excessive bureaucratic process in the operation of insurance particularly in Nigeria. This finding is in agreement with Farayola *et al.* (2013) who in their study found administrative bureaucracy ranked as the second major constraint faced by poultry farmers in participating in agricultural insurance. The respondents also indicated that high costs of insurance premiums affect their uptake. The choice to purchase insurance depends on the premium level, expected indemnity, risk level and availability of alternative risk management tools. A Study by Okeke-Agulu and Salihu (2019) also shows that the cost of the insurance is the most influential factor determining the farmers decision to have insurance or not and what type of insurance product that is chosen. Inadequate knowledge of insurance and its operations is also a problem faced by farmers as indicated by the farmers. Without proper publicity and awareness campaign programmes on the insurance scheme, farmers will not know the benefits of participating in the scheme.

**Table 5. Distribution of Respondents according to constraints to Participation in NAIS**

<b>Constraint</b>	<b>*Frequency</b>	<b>Percentage</b>	<b>Rank</b>
High cost of premium	101	74.0	2 <sup>nd</sup>
Low compensation	35	26.0	6 <sup>th</sup>
Rigorous procedure in indemnity payment	108	79.0	1 <sup>st</sup>
Delay in assessment of losses	96	70.5	3 <sup>rd</sup>
Inadequate knowledge of insurance	54	40.0	4 <sup>th</sup>
Disbelieve in insurance companies	39	29.0	5 <sup>th</sup>

**Multiple Responses\***

## **Conclusion and Recommendations**

This study analyzed poultry farmers' participation in the Nigerian Agricultural Insurance Scheme in Jos South Local Government Area of Plateau State, Nigeria. The study concluded that; majority of the farmers' were aware of agricultural insurance scheme (NAIS), however participation in the insurance scheme was very low. Participation of farmers' in NAIS is influenced by socio-economic and institutional factors like age, sex, access to credit and membership of association. Major constraints to participation in NAIS by poultry farmers' included; rigorous procedure in indemnity payment, high cost of premium, delay in assessment of losses, inadequate knowledge of insurance, disbelieve in insurance companies and low compensation.

Based on the findings, the following recommendations were made:

1. The NAIC should review downward the amount of premium paid by the farmers to be more affordable and attractive. This will encourage the continued participation of new and existing farmers in the insurance system.
2. NAIC should ensure prompt and timely payment of compensation (indemnity). In this way, it will boost the confidence of the unsuspecting farmers in the Nigerian insurance sector.
3. As a matter of urgency, the NAIC should embark on publicity and awareness campaign programmes. This will enable the farmers know more about the NAIC services and the benefits of participating in it. This will encourage the continued participation of new farmers and existing farmers in the insurance scheme.
4. NAIC and the Government should step up awareness campaigns to educate more farmers about the need to have agricultural insurance to safeguard their investments since agriculture is a risky business.

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