Institutional Factors and Crop Farmer's Participation in Agricultural Insurance Scheme: Evidence from South Western Nigeria

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Abstract*—The paper investigated the effect of institutional factors on crop farmer's participation in agricultural insurance schemes in South Western, Nigeria. Specifically, the study described the socio-economic characteristics of crop farmers in the study area, examined the level of awareness of the crop farmers, analyzed the factors influencing the participation of crop farmers and intensity of use of the agricultural insurance policy and compare the income between the participating and non-participating crop farmers in the study area. Multistage sampling techniques were used to select 240 respondents in the study area. Primary data were used for the study, which was sourced from a cross-sectional survey of crop farmers in the study area with the aid of a well-structured questionnaire. The data were analyzed using descriptive, Cragg's (double-hurdle) model, and t-test. The result of the descriptive analysis showed that the mean age of participant and non-participant was 49.47 (±16.36) and 48.19(±15.41) respectively, where the mean years of formal education for participants and non-participant were 10.23(±5.46) and 10.54(±5.72) respectively. The result of Cragg's model in the first hurdle (Probit model) showed that variables such as education, access to credit, farm size, membership of association, and awareness significantly influence the decision of crop farmers to participate in agricultural insurance scheme. In the second hurdle (truncated regression), access to credit, income, risk assessment, and contact with extension was significant to intensity of participation in agricultural insurance scheme in the study area. The result of the t-test showed that there is a significant difference in the income of participants and those that do not participate in agricultural insurances scheme in the study area. Even though a considerable proportion of respondents sampled were aware of agricultural insurance, there is still a need to increase awareness among the farmers so that more farmers can participate in the scheme in other to stabilize their income.*

Keywords*— *Agricultural Insurance, Participation, Crop farmers, Double- hurdle, South Western.

I. INTRODUCTION

Prior to the discovery of petroleum in Nigeria, Agricultural was the mainstay of the country's economy. Agriculture alone contributes about 57% to the GDP during this period (Oluyole and Sanusi, 2009). Crops like cocoa, groundnut, cotton, oil palm and livestock including cattle and goats were the major crops and livestock being produce during this period. However, Nigeria agriculture has witnessed many phases of policies till date even though those policies are yet to revive the stumbling situation of the agricultural sector in present day Nigeria. In Nigeria today, Agriculture provides employment for nothing less than 70% of the total work force (Obatolu, Fashina and Olaiya, 2003). Although majority of them being produce on a small scale. The agricultural sector is an important sector to Nigeria economy as it contributes substantially to the economy after the oil sector.

However, agriculture in Nigeria faces myriads of problems including pest and disease infestation, drought, flooding etc.(Obatolu, Fashina and Olaiya, 2003; Oluyole and Sanusi, 2009; Villalobos, 1989; Wood, 1985; Wright, 1993). Agriculture as an enterprise is faced with risk and uncertainties which has affected the productivity of farmers over time (Oluyole and Sanusi, 2009). Although, farmers have developed different strategies to cope with this unforeseen circumstances and events that might affect their production and output from their respective farms. One of the important strategies to cope with risk and uncertainties experienced on farm is agricultural insurance.

Agricultural insurance, in its widest sense may be defined as the stabilization of income, employment, price and supplies of agricultural products by means of regular and deliberate savings and accumulation of funds in small installments by many in favorable time periods to defend some or few of the participants in bad time periods (Arene, 2005).The term "insurance" is simply "a risk management strategy". The primary motive of any agricultural insurance policy is to serve as a security for losses resulting from natural disasters. Agricultural insurance is therefore the most important available device for minimizing the adverse effects of natural hazards. Nigerian farmers suffered various losses on their investment and had no means of going back to production. The frustration made them to move into cities in droves in search of easy means of livelihood. This situation led to depletion of farming populace, which was a serious threat to food security. The Federal Government was disturbed by the ugly trend, hence the establishment of Nigerian Agricultural Insurance Corporation (NAIC) to address the need of farmers. The need for a specialized Agricultural Insurance Company to provide insurance cover to farmers was informed by Government's concern over the vacuum created due to the unwillingness of conventional Insurers to accept Agricultural risks, which they considered too risky. This led to the establishment of the Nigerian Agricultural Insurance Scheme on 15th of November, 1987.The implementation of the Scheme was initially vested on the Nigerian Agricultural Insurance Company Limited, which was later incorporated in June, 1988 but later turned into a Corporation in 1993 by the enabling Act 37 of 1993. Nigerian Agricultural Insurance Corporation is therefore a wholly-owned Federal Government of Nigeria insurance company set up specifically to provide Agricultural risks insurance cover to Nigerian farmers, the name which later changed to Nigerian Agricultural Insurance Scheme (NAIS). The Nigerian Agricultural Insurance Scheme (NAIS) is to protect the Nigerian farmer from the effects of natural hazards by introducing measures which shall ensure a prompt payment of appropriate indemnity (compensation) sufficient to keep the farmer in business after suffering a loss

Many studies (Akinola, 2014; Falola *et al*., 2013; Ajiboye *et al*, 2018; Oluwatusin *et al*., 2018 and Akintunde, 2015)have been conducted to assess the situation of agricultural insurance policy use, acceptance and adoption by farmers in Nigeria. According to Akinola (2014), farmers' adoption of agricultural insurance will increase if there is increase in formal and extension education, higher level of awareness of insurance policy, more perception and concern for past experience with risk and less indifference resulting from too much confidence in their years of experience and alternative risk management strategies. According to Ajiboye *et al*. (2018), most of the farmers were influenced by the financial institutions (Bank of Agriculture (BoA)) compelling them to acquire insurance policy as a precondition for obtaining loans or as a practical response to some risks which they were faced with in the immediate preceding season. Akintude (2015) ascertained that Stock size, rearing system, access to extension services and poultry rearing experience were significant variables that influenced the participation of the poultry farmers in livestock insurance policy.

However, majority of these studies used logit regression model to analyzed the determinants of the use and adoption of agricultural insurance policy among the farmers in Nigeria. None of the studies on use of insurance policy in Nigeria had address the situation at hand using double- hurdle regression (Cragg's model) in other to further ascertain the intensity of the use of insurance policy among the participating farmers in Nigeria taking into consideration the effect of institutional factors. In this study, the institutional factors considered includes, access to credit, contact with extension agent and membership of association. Specifically, the study described the socio-economic characteristics of crop farmers in the study area, examined the level of awareness of the crop farmers, analyzed the factors influencing the participation of crop farmers and intensity of use of the agricultural insurance policy and compare the income between the participating and non-participating crop farmers in the study area.

II. METHODOLOGY

2.1 Area of Study

The study was carried out in South-Western region of Nigeria. The South-Western region represents a geographical area covering between latitude 6^0 North and 4^0 South. It comprises six states which include: Ekiti, Oyo, Osun, Ondo, Ogun and Lagos State. The region is bounded in the north by Kogi and Kwara States, in the South by Atlantic Ocean, in the West by Republic of Benin and in the East by Edo and Delta State. The tropical climate of the region is broadly of two seasons: rainy season (April-October) and dry season (November-March). Temperature throughout the year ranges between 21^0C to 29^0C and humidity is relatively high. The annual rainfall varies from 2,000mm in the southern areas to 1,150mm in the northern areas. Agriculture is the mainstay of the region and 65% of the region labour force is in agricultural sub-sector (Folayan, Oguntade and Ogundare, 2007). The South western region of Nigeria can boast of different varieties of arable and tree crops as the climatic conditions support the production of various arable and tree crops including cassava, maize, groundnut, cotton etc. Farmers in this region are often faced with myriads of climatic problem with posed threat to agricultural production in

this region. Agricultural insurance policy had been identified as an important strategy to combat risk and uncertainties to agriculture in this region, hence the choice of the study area for the study.

2.2 Sampling procedures and sample size

Multistage sampling procedures were employed for the study. The first stage involved purposive selection of three States including Ogun, Osun and Oyo States due to their high participation in agricultural insurance based on reconnaissance survey conducted during the 2017 agricultural season. The second stage involved the random selection of two Local Government Areas from each State. The third stage involved random selection of 20 participating and 20 non-participating crop farmers in each of the selected Local Government based on a list of farmers obtained from ADP and NAIC offices in each State. Thus, a total of 240 respondents were used for the study. Primary data were sourced from cross-sectional survey of crop farmers in the study area with the aid of well-structured questionnaire to cover information about the socio-economic characteristics of respondents, awareness, output and income of the farmers and reasons for participation in agricultural insurance scheme. Data were collected during the period of March, 2018- August, 2018.

2.3 Analytical techniques

The data were analysed using descriptive, Cragg's (double-hurdle) model and t-test

2.4 Descriptive statistics

Descriptive statistics were used to describe the socio-economic characteristics, awareness and reason for participatingin agricultural insurance scheme in the study area.

The Cragg's model two-step estimation procedure

The Cragg's model was chosen for this study because it relaxes the restrictive assumption of the Tobit model that the factors influencing the discrete decision (participation decision) and the continuous decision (intensity of participation) as well as their effects are the same. Hence, in the Cragg's model, the coefficients of the dependent variables of the first and second hurdle are different.

The first step analyses the factors influencing the decision of the crop farmers to participate in agricultural insurance scheme, while the second step deals with the intensity of participation in the agricultural insurance scheme.

Step 1: Probit model for the discrete participation decision

For the probit model, we assume that the decision of the 'i'th farmer to participate in agricultural insurance scheme or not depends on an unobservable utility index Y_i^*, that is determined by the explanatory variables, and that the higher the value of this utility index the higher the probability that the farmer will participate in agricultural insurance scheme. The decision probability (dependent variable) Y_i is limited between the values of 1 and 0.

$$Y_i = \begin{cases} Y_i^* \text{ if } Y_i^* > 0 \\ 0 \text{ if } Y_i^* \leq 0 \end{cases}$$

The probit model is expressed as:

$$\text{Prob}(Y^* > 0) = F(X'\beta) = \Phi(X'\beta) = \int_{-\infty}^{X'\beta} \emptyset(Z)dZ$$

Where; $F(X'\beta)$ = cumulative degree of freedom of the standard normal distribution.

$$Y_i^* = X'\beta + e_i$$

$$X'\beta = \beta_0 + \beta_1 AGE + \beta_2 GENDER + \beta_3 EXPER + \beta_4 EDUYRS + \beta_5 ACCRDT + \beta_6 FINCOME + \beta_7 FARMSIZE + \beta_8 LNDWNSHP + \beta_9 ASSN + \beta_{10} PERCEPTN + \beta_{11} RISK + \beta_{12} AWARE + \beta_{13} ACCMKT + \beta_{14} EXTN$$

Where; Y = decision to Participate (1= Participate, 0= not participate)

AGE is Age (years)

GENDER is Gender (1=male; 0=female)

EXPER is Experience (years)

EDUYRS is Years of Education (years)

ACCRDT is Access to credit (1=yes fertile; 0=yes)

FINCOME is Income (₦)

FARMSIZE is Farm size (ha)

LNDWNSHP is Land ownership (3=purchased; 2=leased; 1=borrowed; 0=inherited)

ASSN is Association membership (1=member; 0=non-member)

PERCEPTN is Perception (1=positive; 0=negative)

RISK is Risk affinity (#)

AWARE is Awareness (1=aware; 0=not aware)

ACCMKT is Access to market (1=yes; 0=no)

EXTN is Extension contacts (#)

Step 2: Model for the continuous decision (intensity of participation using uncensored observations)

The second hurdle model uses the truncated regression model to determine intensity of participation in agricultural insurance scheme.

$$E(Y|Y^* > 0) = X'\gamma + \sigma\lambda\left(\frac{X'\gamma}{\sigma}\right)$$

Here the Cragg's model makes use of uncensored observations i.e. the observations with zero participation level were not cut out of the observation, thus giving a better representation of the population.

$$X'\gamma = \gamma_0 + \gamma_1 AGE + \gamma_2 GENDER + \gamma_3 EXP + \gamma_4 EDUYRS + \gamma_5 ACCRDT + \gamma_6 FINCOME + \gamma_7 FARMSIZE + \gamma_8 LNDWNSHP + \gamma_9 ASSN + \gamma_{10} PERCEPTN + \gamma_{11} RISK + \gamma_{12} AWARE + \gamma_{13} ACCMKT + \gamma_{14} EXTN$$

Where; Y = Intensity of participations

AGE is Age (years)

GENDER is Gender (1=male; 0=female)

EXP is Experience (years)

EDUYRS is Years of Education (years)

ACCRDT is Access to credit (1=yes fertile; 0=yes)

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EXTN is Extension contacts (#)

T-test

This was used to achieve the impact of participation in agricultural insurance scheme on farmers" income. It was specified as

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Where:

X_1 = Mean income of participating farmers

X_2 = Mean income of non-participating farmers

S_1= Standard deviation of participating farmers

S_2= Standard deviation of non-participating farmers

n_1 = Sample size of participating farmers

n_2 = Sample size of non-participating farmers

III. RESULTS AND DISCUSSION

3.1 Socio-economic characteristics of respondents

The results of the socio-economic characteristics of the respondents were presented on Table 1. The mean age of participant and non-participant was 49.47 (±16.36) and 48.19(±15.41) respectively. This shows that there are no major differences in the ages of both the participant and non-participant as the two categories were in their active and productive age. This result agreed with Falola *et al*., 2013 who established that farmers in Nigeria were in mid and active age. As regarding gender, 53% of participants were male while 62% of the non-participant were male. This suggest that both male and female participant and non-participants respectively were actively involved in crop production in the study area. This result agrees with Oluwatusin *et al*., 2018. The mean years of formal education for participants and non-participant were 10.23(±5.46) and 10.54(±5.72) respectively. This suggests that crop farmers in the study area were literate as they possess considerable years of formal education. This result agreed with Ajiboye *et al*. (2018). The mean years of farming experience for participants and non-participants was 19.14(±11.19) and 19.32(±11.73) respectively. These implies that crop farmers in the study area had been into the business for many years and thus have the necessary experience to increase their production. From Table 1, 73% and 53% of the participants and non-participants respectively belong to one association or the other. This shows that the participant was more involved in society association than the non-participant. This might have influence the participant to take up agricultural insurance policy as they might have been influenced by group dynamism. This agree with Oluwatusin *et al*. (2018). About 86% of the participants had access to credit while 43% of the none participant had access to credit. This implies that the participant had more access to credit than the non-participant which might be largely due to their involvement in agricultural insurance. Furthermore, 76% of the participants had contact with extension agents while 51% of the non-participant had contact with extension agents. This implies that users of agricultural insurance in the study area had more contact than the non-users hence might have influence their decision to adopt agricultural insurance policy in the study area. The mean annual farm income of the participant and non-participant was 623543(±395839) and 482624(±294538) respectively. This result shows that there is a difference in their annual income. This difference might have been influence by the indemnity received by the participant at the end of production season.

TABLE 1
SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS BY GENDER

Variables	Participant	Non-participant	Pooled
Age	49.47 (±16.36)	48.19(±15.41)	48.79(±145.25)
Male (%)	53.00	62.00	64.00
Years of formal education	10.23(±5.46)	10.54(±5.72)	10.38(±5.41)
Years of farming experience	19.14(±11.19)	19.32(±11.73)	19.12(±11.31)
Association membership (%)	73.00	52.00	68.00
Access to credit (%)	86.00	43.00	76.00
Extension contact (%)	76.00	51.00	61.00
Farm income	623543(±395839)	482624(±294538)	549302(±293746)

Figures in parenthesis are standard deviation
Source: Data Analysis, 2018

3.2 Respondents level of Awareness of Agricultural insurance scheme

The level of awareness of the crop farmers as regarding agricultural insurance scheme were presented on Table 2. The result shows that 73.3% of the crop farmers were aware while 26.7% were not aware. This implies that majority of the farmers sampled have knowledge of the agricultural insurance scheme in the study area although some of the crop farmers despite their knowledge of agricultural insurance scheme, they still do not participate.

TABLE 2
DISTRIBUTION OF RESPONDENTS BY AWARENESS

Awareness	Frequency	Percentage (%)
Yes	176	73.3
No	64	26.7
Total	240	100.00

Source: Data Analysis, 2018

3.3 Reasons for participating in agricultural insurance

The various reasons why crop farmers participated in agricultural insurance scheme in the study area were presented in Table 3. About 15.9% of the participants take up agricultural insurance policy due to uncertainty of climatic conditions. Crop farmers have been faced with problem of climate change in recent years and this had affected their farm output in recent times. So, in other to brace up with the inputs invested in their respective crop production, they take up agricultural insurance policy as a cover up against risk and uncertainties of weather condition in the study area. About 13.7% of the participants partook in agricultural insurance due to availability of optional policies. Thus, NAIC have different insurance policy cover for crop farmers and the crop farmers in the study area have the opportunity to choose and decide which policy best suits their needs. About 18.2% of the respondents used agricultural insurance because of government subsidization on premium since the government including federal and state government in which the enterprise is established is responsible for 50% of premium payable by the crop farmers. Also, 20.7% of the respondents utilized agricultural insurance because of easy access to credit facilities. Most of the financial lending institutions in Nigeria requires agricultural insurance policy for granting loans and farmers have thus sees agricultural insurance policy as an easy gateway for obtaining credit facilities. This agrees with Ajiboye *et al*. (2018) who ascertained that most of the farmers were influenced by the financial institutions (Bank of Agriculture (BoA)) compelling them to acquire insurance policy as a precondition for obtaining loans. About 14.7% of the respondents participated in agricultural insurance policy due to prompt and early settlement of claims by NAIC. In time past majority of the farmers normally find it difficult to claim their indemnity. However, with the reform in NAIC in recent years, farmers have been experiencing early and prompt payment of indemnity and have thus encouraged them in taking up agricultural insurance policy in the study area. Furthermore, about 16.8% of the respondents participated in agricultural insurance because of provision of effective technical assistance to farmers. NAIC had over the years granted expertise assistance to farmers who took up agricultural insurance with them educating the farmers on best agricultural practices to be adopted. This has helped improved farmers productivity over the years and also, the capital that the farmers would have literarily paid for expertise consultation were been saved in the process.

TABLE 3
REASONS FOR PARTICIPATING IN AGRICULTURAL INSURANCE

Reasons	Frequency Percentage (%)	
Uncertain climatic condition	91	15.9
Availability of optional policies	78	13.7
Government subsidization on premium	104	18.2
Easy access to credit	118	20.7
Prompt and early settlement of claims by NAIC	84	14.7
Provision of effective technical assistance to farmers by NAIC	96	16.8
Total	571**	100.00

Source: Data Analysis, 2018
****Multiple responses***

3.4 Effect of Institutional Factors on Decision to Participate and Intensity of Participation in Agricultural Insurance

The result of the first hurdle (Probit model) was presented on Table 4. The study revealed that the generalized likelihood function was -83.583. The likelihood function implies that there is adequacy in the choice of explanatory variable set. The Prob > chi^2 statistic of 0.0893 ($p < 0.10$) obtained shows that the model gave a good fit for the analysis. From Table 4, variables such as education, access to credit, farm size, membership of association and awareness significant influence the decision of crop farmers to participate in agricultural insurance scheme. Education was positive and significant at 1%. This implies that the higher the level of education attained by the crop farmers, the tendency to participate and use in agricultural insurance policy. This is possible because farmers tend to get enlightened based on their educational exposure. This result agreed with Olubiyo *et al*. (2009); Masoumi *et al* (2013) and Farayola *et al* (2013). Access to credit was positive and significant at 1%. Farmer's access to credit facilities can encourage them to participate in agricultural insurance as they tend to ensure that they insured the risk they might experience so that should they experience issues on their farm, they will be able to repay the loan through indemnity received from the insurance company. Farm size was positive and significant at 1% level of probability. It is logical that as farm size increases, the farmers tend to ensure that they practice a risk management strategy and their participation and use of agricultural insurance policy might be possible. This result is consistent with that of Fallah *et al*. (2012). Membership of association was positive and significant at 5% probability level. This implies that group dynamic can influence the decision of crop farmers to use agricultural insurance policy in the study area. Farmers tend to be briefed about the necessity of agricultural insurance through their regular involvement in cooperative societies. Furthermore, Awareness was positive and significant at 10% level of probability. This shows that increased awareness on the importance of agricultural insurance to farmers might increase the chances of crop farmers participating in agricultural insurance scheme in the study area. This agreed with Ajiboye *et al*. (2018).

TABLE 4
FIRST HURDLE (DECISION TO PARTICIPATE)

Variables	Coefficients	Std. Error	T-value
Constant	0.110***	0.007	15.74
Age	0.020	0.020	1.01
Gender	0.001	0.005	0.28
Experience	0.197	0.139	1.42
Education	0.042***	0.007	5.63
Access to Credit	0.174***	0.049	3.56
Income	189.135	273.029	0.69
Farm Size	5618.24***	1183.819	4.75
Land Ownership	-0.045	0.029	-1.52
Association	0.610**	0.273	2.24
Perception	0.013	0.021	0.63
Risk Assessment	0.197	0.139	1.42
Awareness	12.686*	7.054	1.80
Access to Market	6.158	112.629	0.05
Extn. Contact	0.044	0.054	0.82
LRchi^2	14.74		
Log likelihood	-83.583		
Prob > chi^2	0.08930		

****, **, *** Significant at 10, 5 and 1% respectively***
Source: Data Analysis, 2018

From Table 5, the second hurdle shows that access to credit, income, risk assessment and contact with extension was significant to intensity (continuous) participation in agricultural insurance scheme in the study area. Access to credit was positive and significant at 5% probability level. This implies that farmers continue to use and participate in agricultural insurance scheme as long as they continue to access credit facilities in the study area. This is true because lending institution will continue to ask for agricultural insurance policy of the farmers before new credit facilities were given to them. Income was positive and significant at 1% level of probability. When farmers take up agricultural insurance policy, their income is expected to be stabilized and their income increases they tend to continue the use of agricultural insurance policy. Risk assessment was positive and significant at 5% probability level. As crop farmers assessed the risk they encountered before

and after their involvement in agricultural insurance scheme, they tends to continue the use of agricultural insurance policy and they likely found out that the risk they encountered after their involvement in agricultural insurance weigh less than before. Contact with extension agent was positive and significant at 10% level of probability. This implies that as long as the farmers continue to have contact with extension agents, they tend to be encouraged continuously to participate in agricultural insurance scheme in the study area.

TABLE5
SECOND HURDLE (INTENSITY OF PARTICIPATION)

Variables	Coefficients	Std. Error	T-value
Constant	0.400	0.375	1.06
Age	4.353	4.518	0.96
Gender	1.822	6.050	0.30
Experience	1.061	4.488	0.23
Education	0.005	0.021	0.23
Access to Credit	0.318**	0.141	2.25
Income	2.260***	0.744	3.03
Farm Size	0.947	0.903	1.04
Land Ownership	0.005	0.335	0.01
Association	1.219	1.711	0.71
Perception	0.004	0.157	0.02
Risk Assessment	0.445**	0.066	6.74
Awareness	0.027	0.052	0.51
Access to Market	0.033	0.026	1.50
Extn. Contact	0.021*	0.012	1.75
$LRchi^2$	19.47		
Log likelihood	-95.628		
Prob > chi^2	0.09247		

****, **, *** Significant at 10, 5 and 1% respectivelySource: Data Analysis, 2018***

T-test result showing the differences between the net income of the crop farmers participating and those not participating in agricultural insurance

T-test (Table 6) result shows that there is significant difference between the net income of the crop farmers participating and those not participating in agricultural insurance. This confirmed that the users of agricultural insurance policy had more net income than the non-participant at the end of the production season. This might be possible due to indemnity received by the participant after assessing their loss by the insurance company at the end of the production season.

TABLE 6
T-TEST RESULT SHOWING THE DIFFERENCES BETWEEN THE NET INCOME OF THE CROP FARMERS PARTICIPATING AND THOSE NOT PARTICIPATING IN AGRICULTURAL INSURANCE SCHEME

Variable	Mean difference	Standard error difference	T-test
Net income	34739.467***	148296.531	4.729

Source: Data Analysis, 2018.
******significant at 1 percent***

IV. CONCLUSION AND RECOMMENDATIONS

The study concluded that crop farmers in the study area were in their active age, literate and had the necessary experience in carry out their farming activities. In addition, the study concluded that farmers who participated in agricultural insurance scheme had access to credit and had more contact with extension agents. Considerable proportions of crop farmers were aware of agricultural insurance scheme in the study area. Furthermore, in the first hurdle (Probit model), variables such as education, access to credit, farm size, membership of association and awareness significant influence the decision of crop farmers to participate in agricultural insurance scheme. In the second hurdle (truncated regression), access to credit, income, risk assessment and contact with extension was significant to intensity (continuous) participation in agricultural insurance scheme in the study area. The result of the t-test showed that there is a significant difference in the income of participants and those that does not participate in agricultural insurances scheme in the study area.

Therefore, based on the findings of the study, the following recommendations were made in other to encourage farmers to participate in agricultural insurance scheme;

i. Farmers should be encouraged to get more education inform of training which will increase their chances of participating in agricultural insurance scheme in other for their income to be stabilized.

ii. Credit facilities should be made available to the farmers so as to increase their level of production which will instigate them to participate in agricultural insurance scheme.

iii. Farmers should be encouraged to join more association which will benefit them in many ways such as assessing loans which eventually instigate them to participate in agricultural insurance scheme.

iv. Despite the fact that considerable proportions of respondents sampled were aware of agricultural insurance scheme, there is still a need to increase awareness among the farmers so that more farmers can participate in the scheme in other to stabilize their income.

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