



## Nexus Between Agricultural Insurance and Economic Growth In Nigeria

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### ABSTRACT

The present study is centered on the nexus between Agricultural insurance and economic growth in Nigeria. Agricultural Insurance is a valuable business risk management tool that provides farmers with financial protection against production losses caused by natural perils, such as drought, excessive moisture, hail, frost, wind and wildlife. The study made use of a survey research design and 50 farmers from Ijebu Igbo local government of Ogun State were administered questionnaires. The findings showed a positive significant correlation ( $r = .638$ ,  $p < .01$ ) between Agriculture Insurance scheme and economic growth. Also, Credit Scheme and Agricultural Insurance jointly significantly influenced economic Growth [ $R^2 = .543$ ;  $F(2,49) = 27.978$ ;  $p < .05$ ] which infers that Credit Scheme and Agricultural Insurance jointly accounted for about 54.3% of the variance observable in Economic growth. The study recommends that more awareness on agricultural insurance should be made to farmers and the need to be aware of the security the insurance scheme offers them which in actual sense will bring about increase in yield at minimum cost.

**Keywords:** Agriculture, Agricultural Insurance, Credit Scheme, Economic Growth

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## 1. INTRODUCTION

Agriculture was the key development that led to the rise of human civilization, with the husbandry of domesticated animals and plants (i.e., crops) creating food surpluses that enabled the development of more densely populated and stratified societies. Agriculture encompasses a wide variety of specialties and techniques, including ways to expand the lands suitable for plant raising, by digging water-channels and other forms of irrigation. Cultivation of crops on arable land and the pastoral herding of livestock on rangeland remain at the foundation of agriculture. In the past century there has been increasing concern to identify and quantify various forms of agriculture (e.g. permaculture



or organic agriculture) and intensive farming (e.g. industrial agriculture). Interestingly, the Nigerian economy, during the first decade after independence could reasonably be described as an agricultural economy because agriculture served as the engine of growth of the overall economy (Ogen, 2003:231-234). From the standpoint of occupational distribution and contribution to the GDP, agriculture was the leading sector.

During this period Nigeria was the world's second largest producer of cocoa, largest exporter of palm kernel and largest producer and exporter of palm oil. Nigeria was also a leading exporter of other major commodities such as cotton, groundnut, rubber and hides and skins. The agricultural sector contributed over 60% of the GDP in the 1960s and despite the reliance of Nigerian peasant farmers on traditional tools and indigenous farming methods, these farmers produced 70% of Nigeria's exports and 95% of its food needs.

Insurance market activity may contribute to economic growth, both as a financial intermediary and as a provider of risk transfer and indemnification. This is possible by allowing different risks to be managed more efficiently and by mobilizing domestic savings. Therefore, one may raise the question of the impact that faster growth in insurance activity would have on economic growth.

The papers in which the development of the insurance market and its relations with the real economy are investigated empirically can be divided into two main areas: The most ones which identified positive relationship between the development of insurance sector and economic growth (their literature review can be found in e.g. Chen et al. 2014), and some ones which verified no relations between the development of the insurance market and economic growth. The relationship between insurance activities and economic growth has been a popular issue of debate in the field of insurance, whereas no consensus has been yet emerged.

In view of persistent and wide forms of risks facing their means of living farming households pursue several traditional means of overcoming these risks. For example, to reduce exposure to potential losses, farmers often spread their bets by growing a mix of crops and crop varieties, stagger crop planting dates, and spread crops amongst fields that have different risk exposures in the landscape. These techniques can help reduce the chance of a major crop loss in any one season.

Many farm households also engage in off-farm employment, or have a non-farm business of their own, and these help to reduce their dependence on farm income. To cope with the losses that do occur, farmers carry stocks of food, livestock, savings and other assets that can be consumed or sold in times of need. They may also take credit and engage in temporary of farm employment. Communities provide another layer of protection against risk (Bhattamishra and Barrett, 2010).

Eze (2019) noted that the development of agriculture requires financial services that can support larger agriculture investments and agriculture-related infrastructure that require long-term funding (given that currently transportation and logistics costs are too high, especially for landlocked countries), a greater inclusion of youth and women in the sector, and advancements in technology (both in terms of mechanising the agricultural processes and leveraging mobile phones and electronic payment platforms to enhance access and reduce transaction costs).



It further stated that agriculture finance and agricultural insurance are strategically important for eradicating extreme poverty and boosting shared prosperity. In many countries, insurance sector contributes to economic growth both sectorally and geographically.

Since insurance sector has links to other economic sectors such as industrial, transportation, agriculture, trade and others, both locally and internationally, its relevance to general human activities has continued to grow for all ages as all categories of risks increase (Zyka and Tomori, 2014). However, the ability of the insurance industry to contribute to the growth of an economy is dependent on its capacity. This is usually indicated by the level of development the industry has. Agriculture insurance in Nigeria has not received much patronage. It is growing at slower rate than provision of credit to the agriculture sector.

This suggests that lending to the agriculture community in Nigeria does not build on the stability that available agriculture insurance in the economy provides. There are a number of factors necessitating this poor situation. Yet the situation can be seen differently. The non reliance on insurance paints a picture of many prospects of untapped market for agriculture insurance in Nigeria. Most studies in the literature on insurance-growth nexus have used time-series data or cross-sectional data, but not implementing the panel data approach, or have been restricted by short time periods and coverage of fewer countries (Kugler and Ofoghi 2005). Furthermore, the studies on the non-life insurance market-growth nexus are few, mainly due to the lack of appropriate data sources as well as the weak significance of econometric analysis.

### **1.1 Statement of the Problem**

In many countries, insurance sector contributes to economic growth both sectorally and geographically. Since insurance sector has links to other economic sectors such as industrial, transportation, agriculture, trade and others, both locally and internationally, its relevance to general human activities has continued to grow for all ages as all categories of risks increase (Zyka and Tomori, 2014). However, the ability of the insurance industry to contribute to the growth of an economy is dependent on its capacity.

This is usually indicated by the level of development the industry has. Agriculture insurance in Nigeria has not received much patronage. It is growing at slower rate than provision of credit to the agriculture sector. This suggests that lending to the agriculture community in Nigeria does not build on the stability that available agriculture insurance in the economy provides. There are a number of factors necessitating this poor situation. Yet the situation can be seen differently. The non reliance on insurance paints a picture of many prospects of untapped market for agriculture insurance in Nigeria.

Despite the existence of insurance services from Nigeria Agricultural Insurance Corporation and other private firms in Nigeria, there has been low level of participation in insurance activities by farmers. Therefore this paper examines the nexus between Agricultural Insurance and economic growth in Nigeria.



## 1.2 Research Questions

- i. To what extent does Agricultural insurance significantly impact economic growth in Nigeria?
- ii. What is the level of participation of farmers in Agricultural Insurance scheme?
- iii. What is the joint impact of Credit scheme and Agricultural insurance on economic growth in Nigeria?

## 1.3 Hypotheses

H<sub>01</sub>: Agriculture insurance does not have a significant impact on economic growth

H<sub>02</sub>: The joint influence of Credit scheme and Agriculture Insurance do not have a significant impact on economic growth

## 2. LITERATURE REVIEW

### 2.1 Agricultural Insurance

Agricultural insurance is the stabilization of income, employment, price and supplies of agricultural products by means of regular and deliberate saving and accumulation of fund in small installment by many in favorable time period to defend the participation in bad time. There are three types of agents that are active in providing agricultural insurance: the private for profit sector, governments (public), and other, mostly nonprofits (mutual groups, NGOs, etc.). Other agencies help finance and initiate insurance programs, including bilateral donors, United Nations (UN) organizations, multinational development banks, private foundations, and international reinsurers, but they do not deliver insurance on the ground.

Few economic groups have a greater need of insurance than do the farmers. This need embraces nearly all the forms of protection offered by fire, life, and casualty insurance companies. Insurance against fire and lightning is quite as necessary to the farmer as to the city man, while such coverage against windstorm is even more generally needed in the country than in the city. Farm property is more exposed to wind, as well as to lightning, and, in the case of severe storms; the farm building is more subject to destruction.

Agriculture finance and agricultural insurance are strategically important for eradicating extreme poverty and boosting shared prosperity. Globally, there are an estimated 500 million smallholder farming households – representing 2.5 billion people – relying, to varying degrees, on agricultural production for their livelihoods. The benefits of our work include the following: growing income of farmers and agricultural SMEs through commercialization and access to better technologies, increasing resilience through climate smart production, risk diversification and access to financial tools, and smoothing the transition of non-commercial farmers out of agriculture and facilitating the consolidation of farms, assets and production (financing structural change).



## 2.2 Agricultural Insurance Products

### i. Crop Insurance

Crop outputs are affected by weather conditions which in many cases are unpredictable both in terms of frequency of occurrence and severity. The most serious hazards to which crops are exposed include drought, flood, wind-storms and pest infection. Others include fire, particularly in the northern part of the country. Crops in this part also exposed to fire which spread from bush fires during the dry season. Flood and excessive rainfall ruin crops in the riverside areas seasonally. Each year, the country's farmers lose millions of naira as a result of the effect of these undesirable factors on crops. A crop insurance policy guarantees indemnity for insured losses resulting from these factors. At the beginning of each season, the insured takes a policy with sum insured as the value of expected revenue from his anticipated harvest at the end of the season. Premiums are then calculated using his expected income.

In the event of a claim, the proportion of damage is estimated. At the end of the crop season, the rest of the crops are harvested and sold. Claims are then settled using the average price of the proportion sold to estimate the revenue that would have been generated from the damaged portion. This done, the premium for the year is then adjusted on the basis of the revenue from sales and the claims settled.

### ii. Crop Insurance Policies "All Risk" Insurance Policy

The "All Risks" policy as the terminology implies is a policy that covers all risks of physical loss or damage to the crop caused by the insured perils. The most common risks to which crops are susceptible are fire, flood, wind, drought and pests. For crop insurance to be meaningful to the Nigerian farmer, it should be free from excess at least for the first ten years of its operation.

### iii. Harvest Policy-

A harvest policy will cover loss up to the value of the expected harvest. Usually the unit price of the crop is specified as a percentage of the expected yield. Unlike the "All Risks" policy where the indemnity is related to the actual loss suffered by the farmer, the harvest policy could be likened to the "agreed value" policy of marine insurance which stipulates what the insurer has agreed to pay in the event of a claim under the policy.

### iv. Credit Policy-

A crop credit insurance covers the amount of loan given to the farmer. The sum insured under the policy is limited to the farmer's production costs upon which the loan is based. The Credit Policy, unlike the "All Risks" policy and Harvest Policy is ascertainable in terms of the measure of indemnity at the time the insurance is contracted. Another major distinction is that the credit policy is provided as part of a broader credit programmes in the promotion of agriculture. A crop credit Programme has as one of its goals the mitigation of the risk magnifying effects of increasing the debt/equity ratio. Therefore, a crop credit insurance must be evaluated in the context of the goals of the overall agricultural credit programme and specifically in terms of the contribution which it makes to the functioning of the credit system. Premium rates, as usual, are expected to be based on loss experience, which in the case of crops is very unstable. A reasonably accepted rate can only be arrived at if the climatic and meteorological data of the area are known over a long period of time. A



multi-peril insurance policy covers the insured for unavoidable losses due to adverse weather conditions, plant diseases, pest infections, etc

### **2.3 Agricultural Insurance Credit Scheme**

Most agricultural credits are granted to big-time farmers with export-oriented products. This is so because they are usually the only people who can meet the demands of the agricultural credit banks. Agricultural insurance allows credit facilities to reach a broader spectrum of farmers because agricultural insurance ensures a lowered cost of operation of the banks and also a higher recovery rate of the loans (Akintunde, 2015). For instance here in Nigeria, the Agricultural Credit Guarantee Scheme Fund, which has been planned by the government to boost agricultural production, is constrained by the inability of the average farmer to provide the necessary security for loans to be granted under the scheme. Besides, a great majority of the farmers cannot satisfy the following items required as approved by the Board of the Agricultural Credit Guarantee Scheme Fund.

### **2.4 Economic Impact of Agricultural Insurance**

The economic impact of agricultural insurance can be categorized into three: The impact on the farmer, the impact on the agricultural credit system and the impact on the nation as a unit. The farmers feel relaxed that he will be indemnified. This motivates him further to explore and expand his activities which will result into greater agriculture output. The credit positions of farmers are greatly enhanced by their ability to meet their installment payments when due (Helli & Hansen, 2017). In many cases, policies are taken in the names of the farmer and the lender. This offers a concrete guarantee for the lender that his loan can be recovered in case of damage too the crops. Also, an insurance policy taken in the name of the farmer and the lender encourages the bank to give higher credit lines than would have been approved without insurance. Insurance also serves as a guarantee to enable the farmers purchase modern equipment and other facilities which will increase his output.

## **3. METHODOLOGY**

In this study, the survey research design was used. The population of the study are farmers from Ijebu-Igbo Local Government of Ogun State. A research questionnaire was designed and used as instrument for data collection. The purposive sampling was used as sampling technique for this study. A total number of 50 farmers were selected using purposive sampling method. Data was analyzed using SPSS package. The analysis was done by applying descriptive and inferential statistics, the socio-demographic characteristics of the respondents was analyzed using descriptive statistics while hypothesis was analyzed using Pearson Correlation and Multiple Regression Analysis.

## **4. DATA ANALYSIS**

Table 1 shows that 74% of the respondents are male while 26% are female. Also, 56% of the respondents were within the age group of 31-45 years while 32% were above 45 years old. Based on educational qualification, 32% had Primary school certificate, 14% had SSCE/GCE certificate while 24% had no formal education. In addition, most of the respondents (46%) had more than 15 years experience in farming.



**Table 1: Socio-Demographic Characteristics of Respondents**

Variables	Frequency	Percentage
<b>Gender</b>		
Male	37	74
Female	13	26
<b>Total</b>	<b>50</b>	<b>100</b>
<b>Age</b>		
18-30 years	6	12
31-45 years	28	56
Above 45 years	16	32
<b>Total</b>	<b>50</b>	<b>100</b>
<b>Educational Qualification</b>		
No Formal	12	24
Primary	16	32
Secondary	7	14
Tertiary	5	10
<b>Total</b>	<b>50</b>	<b>100</b>
<b>Years in Framing</b>		
Less than 5 years	4	8
6-10 years	11	22
11-15 years	12	24
More than 15 years	23	46
<b>Total</b>	<b>50</b>	<b>100</b>

**Table 2: Level of Participation in Agricultural insurance scheme**

Do you participate in any Agricultural Insurance scheme	Frequency	Percentage
Yes	37	74
No	13	26
<b>Total</b>	<b>50</b>	<b>100</b>

The level of participation in Agricultural insurance scheme is low as 74% of the respondents claimed that they do not participate in any Agricultural insurance scheme. However, 26% of the respondents claimed that they participate in Agricultural Insurance scheme.



**Hypothesis One**

H<sub>01</sub>: Agriculture insurance does not have a significant impact on economic growth

**Table 2: Pearson Correlation of the relationship between Agriculture Insurance and economic growth**

		Agric Insurance	Economic Growth
Agric Insurance	Pearson Correlation	1	.638**
	Sig. (2-tailed)		.001
	N	120	120
Economic Growth	Pearson Correlation	.638**	1
	Sig. (2-tailed)	.001	
	N	120	120

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From table 2, the Pearson correlation shows a positive significant correlation ( $r = .638$ ,  $p < .01$ ) between Agriculture Insurance scheme and economic growth. This implies that a good Agriculture Insurance scheme will positively impact economic growth.

**H<sub>02</sub>: The joint influence of Credit scheme and Agriculture Insurance do not have a significant impact on economic growth**

**Table 4.10: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737 <sup>a</sup>	.543	.521	1.14331

a. Predictors: (Constant), Credit Scheme and Agricultural Insurance

**Table 4.11: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	220.978	2	110.489	27.978	.000 <sup>b</sup>
	Residual	185.615	47	3.949		
	Total	406.593	49			

a. Dependent Variable: Economic Growth





b. Predictors: (Constant), Credit Scheme and Agricultural Insurance

## TABLE TITLEREQUIRED

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.661	.478		7.654	.000
Credit Scheme	.051	.136	.127	.371	.001
Agricultural Insurance	.151	.853	.063	.178	.003

The result of the second hypothesis shows that Credit Scheme and Agricultural Insurance jointly significantly influenced economic Growth [( $R^2 = .543$ ;  $F(2,49) = 27.978$ ;  $p < .05$ )]. This infers that Credit Scheme and Agricultural Insurance jointly accounted for about 54.3% of the variance observable in Economic growth. In addition, the result of the coefficients of multiple determination for the model shows that the independent contribution of Credit Scheme and Agricultural Insurance were significant ( $\beta = .127$ ;  $t = .371$ ;  $p < .000$ ) and ( $\beta = .063$ ;  $t = .178$ ;  $p < .000$ ). In terms of magnitude, Credit scheme has the highest magnitude with ( $\beta = .152$ ) and Agricultural Insurance has ( $\beta = .063$ ).

## 5. CONCLUSION

This study examines the nexus between agricultural insurance and economic growth in Nigeria. The findings of this study showed that there was a positive significant correlation between agricultural insurance and economic growth. In addition, credit scheme and agricultural insurance jointly significantly impacted economic growth. Also, it was discovered that there is low patronage of Agricultural insurance among the respondents. As such, agriculture insurance still has a long way to go to become relevant in the economy. In relation to its prospects, agriculture insurance low patronage also equates to an untapped market in the economy. Nigeria has huge agricultural potentials. It has an arable land potential of 98.3million ha consisting of 72.2 million ha (72.4 percent) cultivable (about 23 percent of arable land across all the West Africa) and only 27.1 million ha (27.6 percent) non cultivable land (Adebayo & Olagunju, 2015). Agriculture still remains the largest sector of the Nigerian economy and employs two-thirds of the entire labour force (Food and Agriculture Organisation, FAO, 2019).

## 6. RECOMMENDATION

The following recommendations are made:

- i. The government and relevant authorities should open up more credit schemes and financial aids for farmers as this would help to boost agricultural production.
- ii. The farmers need to be aware of the security the insurance scheme offers them when and if they adopt new technology which in actual sense will bring about increase in yield at minimum cost.



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