

Nexus between Agricultural Insurance Scheme and Performance of Agribusiness in Nigeria

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Keyword:

Agribusiness,
Agricultural
Insurance,
Performance,
Turnover, Solvency,
Agricultural Risks

Abstract

This study focused on nexus between Agricultural Insurance Scheme and Performance of Agribusiness in Nigeria. In order to achieve the objective, a time series research design was employed to gather data for the study from the Central Bank of Nigeria Statistical Bulletin various reports and Annual Report on Small and Medium Scale Farmers published by the Federal Ministry of Agricultural from the period 2014-2018. Population of the study was the 260 registered Small and Medium Scale Agricultural Businesses in Nigeria from which only 40 registered Small and Medium Scale Agricultural Business were purposely selected on the basis that the selected agribusiness must had taken up insurance scheme. Both descriptive and inferential statistics of Panel Regression were used to investigate the objective of the study. The result of the panel analysis obtained revealed that agricultural insurance scheme was positive but not significant on the performance of the selected agricultural businesses in Nigeria ($p\text{-value} = 0.2347 > 0.05$ with regression coefficient of 0.89). The researcher concluded that although agricultural insurance scheme might not be significant on performance of the selected agribusiness presently but the long term effect of the scheme was still powerful enough to enhance the performance of the business in the long run. It was recommended that the government intervention in

agricultural insurance scheme is seriously needed in Nigeria.

Introduction

According to Onwualu (2012), agriculture remains the dominant sector in the rural areas of Nigeria where over 70% of Nigerians reside. The diversity of favourable climatic conditions, the richness of soil types and abundant water sources, and the high population density provide great potentials for crop, livestock, fishery and forestry production (Onwualu, 2012). The term Agriculture is derived from the Latin words, “ager,” meaning field, and “Cultura”, meaning cultivation. This suggests that the earliest form of production agriculture was crop production (Erebor, 2003). It may be noted that Agriculture is more than crop production. It also includes animal production, processing of primary products (or value addition) and marketing of produce and products. Agriculture is the mainstay of any well planned economy throughout the world because it contributes significantly to the national GDP, creates employment, provides food and earns foreign exchange. Nigerian agricultural resources can be classified into two – crop and animal.

According to Izuchukwu (2011), agriculture has been the backbone of the economy in Nigeria providing employment and source of livelihood for the increasing population, it accounts for over half of the GDP of the Nigerian economy as at independence in 1960. However, the role it plays in the regional and economic development of the country has diminished over the years due to the dominant role of the crude oil sector in the economy. With the increasing food demand in Nigeria, the country has available natural resources and potential for increasing the volume of crop production towards meeting the food and nutritional requirement of the rapidly increasing population and guarantee food security in the country. Therefore, the source of national wealth is essentially agriculture. Prior to independence and thereafter, agriculture was the main stay of the economy and a major source of revenue for funding development programmes of government. The country was one of the world’s largest producers of palm oil and kernel, groundnut, rubber, cotton, cocoa, etc.

Agriculture involves redirecting nature’s natural flow of the food web. The natural flow of the food web is the sun provides light to plants convert sunlight into sugars which provide food for the plants (this process is called photosynthesis). Plants provide food for herbivores (plant-eating animals) and the herbivores provides food for carnivores (meat-eating animals). This simple illustration of food web provides the basis for analyzing the impact of agriculture on economic growth. It is on record that at independence, agriculture contributed up to 60% of the Gross Domestic Product (GDP) of Nigeria. Notable cash crops such as groundnuts, rubber, cotton, oil palm and

cocoa for which the nation was recognized globally for production and export capability, generated enormous revenue for the development of socioeconomic infrastructure in the Northern, Eastern and Western regions at that time.

Agricultural business needs to be closely and carefully managed to ensure the success of new investment decisions and expansion plans. However, many managers find that as their business grows they feel more remote from its operations (Infoentrepreneurs, 2009). Putting performance measurement systems in place can be an important way of keeping track on the progress of the business. It gives vital information about what's happening now and it also provides the starting point for a system of target-setting that will assist in implementing strategies for growth. This guide sets out the agricultural business benefits of performance measurement and target-setting. It shows you how to choose which key performance indicators to measure and suggests examples in a number of key business areas. It also highlights the main points to bear in mind when setting targets for your business. (Infoentrepreneurs 2009).

The observed poor performance of farmers in agricultural production is due to the nature of risks and uncertainties in agriculture. The physical environment is harsh, the weather is highly variable, the rainfall is often badly distributed, high soil temperature, are frequent, pest and disease are diverse and in abundant, farming communities face a variety of risks (Ramaswami, Shamika & Chopra 2004). Although they have learned to live with these risks by employing various devices to prevent, avoid, mitigate or cope with them, there are still the problems of residual risks. These are the catastrophic types that human intervention can neither prevent nor mitigate. The damage they cause to lives and properties cannot be underestimated. In such situations, agricultural insurance may prove useful (Akinrinola & Okunola, 2014). As a result of this inherent factors militating against farmers success in agricultural production, farmers experienced huge losses of their crops and livestock in any year such extent occurs and they are left bankrupt, financial institutions are reluctant to lend to agricultural sector, big investors are unwilling to enter into large scale production. Based on the outcomes of all these factors and fear, a reliable insurance scheme to adequately provide covers for all these uncertainties become inevitable and a laudable scheme. Lack of general awareness, Inadequate public enlightenment, mismanagement, lack of co-operation from the lending house, high rate of default that characterized the agricultural insurance company 'public' skeptical attitude toward insurance and finally lack of liquidity cash to pay the premium has also contributed to the problem of agricultural insurance in Nigeria (Akinrinola & Okunola, 2014).

According to Kalyanaraman (2017), agricultural insurance is one the mechanisms by which farmers can stabilize farm income and investment and guard against disastrous effect of losses due to natural hazards or low market prices. Agricultural insurance does not only stabilizes the farm income but also helps the farmers to initiate

production activity after a bad agricultural year. It cushions the shock of crop losses by providing farmers with a minimum amount of protection. It spreads the crop losses over space and time and helps farmers make more investments in agriculture (Kalyanaraman 2017). Agricultural insurance have an effect on the turnover of the agricultural business as well as examining the availability reserve of the business including the solvency of the business on the long run. A set of performance measures to help evaluate the financial health of a farm business, the objective was to have a consistent set of indicators that would be widely used and understood. Information about how to calculate these agricultural risk and uncertainties. Because of this, Ajakaiye and Adeyeye (2001) stated that small farmers in many developing countries of the world including Nigeria are trapped in the measures is found in Financial Performance Measures. (Edwards 2005).

Farmers face considerable losses of investment and income due to the losses resulting from vicious cycle of poverty. This cycle is characterized by low productivity and low farm income which leave them with virtually no saving as capital required in the transformation of their production technology. However, with Agricultural Insurance, farmers can be saved from these losses or damage to crops and livestock or the effect of which can be minimized. According to Ray (2001), crop insurance in developing countries can cushion the shock of disastrous crop losses in bad year, help to ensure a considerable measure of security in farm income over the years and this contribute to the stability of the agriculture and in turn the general economy. This study takes a cursory look into the relationship between agricultural insurance scheme and farmers' productivity in Nigeria. The study investigated the influence of agricultural insurance scheme on performance of the agricultural business. Specially, the study intends to; examine the effect of turnover on performance of the agricultural businesses, relationship between profitability and performance of the agricultural businesses and evaluate the impact of solvency on performance of the agricultural businesses.

Literature Review

Agricultural Insurance Scheme

Erebor (2003) defines agriculture as the art and science of cultivating the soil, processing crops and livestock products for man, and the process of selling excess crop and livestock. According to Izuchukwu (62011), agriculture has been the backbone of the economy in Nigeria providing employment and source of livelihood for the increasing population, it accounts for over half of the GDP of the Nigerian economy as at independence in 1960. Agricultural business needs to be closely and carefully managed to ensure the success of new investment decisions and expansion plans. However, many managers find that as their business grows they feel more remote from its operations (Infoentrep.reneurs, 2009). Meanwhile, insurance, in law and economics

is a form of risk management primarily used to hedge against the risk of a contingent loss. It is on the other hand, the equitable transfer of the risk of a loss, from one entity to another, in exchange for a premium (Squidoo, 2013). Dickson (1960) in Oke (2012) opined that insurance is designed to protect the financial wellbeing of an individual, company or other entity in case of unexpected loss. According to him, some forms of insurance are required by law; while others are optional agreeing to the terms of an insurance policy creates a contract the insurer and the insured. The importance of insurance in sustainable development has been recognized for a very long time. It seems insurance not only facilitates economic transactions through risk transfer and indemnification but is also seen to promote financial intermediation (Ward and Zurbruegg, 2000).

Agricultural insurance according to Epetimehin (2010), is a special line of property insurance applied to agricultural firms. In recognition of the specialized nature of this type of insurance, insurance companies operating in the market either have dedicated agribusiness units or outsource the underwriting to agencies that specialize in it. Agricultural insurance was also defined as protection of specified crops and livestock against specified natural causes (e.g. drought, flood, pests and wind) (Hatch, 2008). It first began as insurance against hail in France and Germany during the 1820s. This implies that agricultural insurance can be procured to protect certain specified crops and livestock against certain risk that could cause calamity in form of death of livestock and damage to cultivated farm produce resulting in financial loss to farmers. Agricultural insurance, which provides indemnification for economic loss resulting from damage to or loss of crops and animals in the event of adverse natural and other phenomena, is a subject of great concern and urgency that must be addressed by government (Hatch, 2008). It is not news that Federal Government of Nigeria in order to assist the agricultural sector to ensure sustainability put in place a national agricultural insurance scheme to provide a platform for compensation (indemnity) of any farmer(s) that may suffer loss/destruction to his/her farm produce or livestock which eventually result in financial loss. It is however worthy to note that despite several awareness and publicity campaign put in place to sensitize the farmers, the degree of response to agricultural insurance scheme is still at a very low level resulting in food scarcity and cumulatively poverty increase.

Performance of Agribusiness

The term Agribusiness according to Hassanzoy (2019) was coined by two Harvard Economists, Johan Davis and Ray Goldberg in 1957, they defined agribusiness as the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing and distribution of farm commodities and items made from them. Agribusiness actually

includes all enterprises derived 'from' and 'around' agricultural production (Hassanzoy, 2019). Later, Agribusiness definition was further broadened to include the manufacture and distribution of farm supplies to the production agriculturist and the storage, processing, marketing, transporting, and distributing of agricultural materials and consumer products that were produced by production agriculturalists" (Ricketts & Ricketts, 2009). Recently, the definition of Agribusiness was expanded to move beyond the farm as more than food and fiber would be encompassed (Ng & Siebert, 2009; Detre, Gunderson, Peake, & Dooley, 2011). In another recent development, Agribusiness came to refer to agriculturally related businesses including warehouses, wholesalers, processors, retailers and more (Chait, 2014).

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Agricultural insurance is one the mechanisms by which farmers can guarantee performance by stabilize farm income and investment and guard against disastrous effect of losses due to natural hazards or low market prices. Agricultural insurance does not only stabilizes the farm income but also helps the farmers to initiate production activity after a bad agricultural year. It cushions the shock of crop losses by providing farmers with a minimum amount of protection. It spreads the crop losses over space and time and helps farmers make more investments in agriculture. (Kalyanaraman 2017). Agricultural insurance have an effect on the turnover of the agribusiness as well as examining the availability reserve of the business including the solvency of the business on the long run. A set of performance measures to help evaluate the financial health of a farm business, the objective was to have a consistent set of indicators that would be widely used and understood. Information about how to calculate these measures is found in Financial Performance Measures. (Edwards 2005).

Values for the farm financial measures should be calculated for several years to observe trends and to avoid making judgments based on an unusual year. Farmers who have a large investment in land, machinery, livestock, and equipment need to keep informed about the financial condition of their operations. Some useful measures of

financial performance can be calculated from information found in most farm record books and accounting programs. These measures can help farmers assess the profitability, debt capacity, and financial risk currently faced by their businesses. According to Morris (2005) farmers could feel secure enough to make higher risk, higher return investments in seeds and fertilizer and that would increase their chance of becoming self-sufficient and less dependent on emergency aid.

Theoretical Review

The study was premised on both the theory of performance and Risk management theory respectively in view of the fact that the two theories emphasized on both the independent variable (agricultural insurance) and dependent variable (performance) of the study.

Performance Theory

In 1990, Campbell described the literature on the structure and content of performance “a virtual desert” (p. 704). When conceptualizing performance one has to differentiate between an action (i.e., behavioral) aspect and an outcome aspect of performance (Campbell, 1990; Campbell, McCloy, Oppler, & Sager, 1993; Kanfer, 1990; Roe, 1999). The behavioral aspect refers to what an individual does in the work situation. Not every behavior is subsumed under the performance concept, but only behavior which is relevant for the organizational goals: “Performance is what the organization hires one to do, and do well” (Campbell et al., 1993, p. 40). Thus, performance is not defined by the action itself but by judgmental and evaluative processes (Ilgen & Schneider, 1991). Moreover, only actions which can be scaled, i.e., measured, are considered to constitute performance (Campbell et al., 1993). The outcome aspect refers to the consequence or result of the individual’s behavior. The above described behaviors may result in outcomes such as numbers of engines assembled, pupils’ reading proficiency, sales figures, or number of successful heart operations. In many situations, the behavioral and outcome aspects are related empirically, but they do not overlap completely. Outcome aspects of performance depend also on factors other than the individual’s behavior.

In practice, it might be difficult to describe the action aspect of performance without any reference to the outcome aspect. Because not any action but only actions relevant for organizational goals constitute performance, one needs criteria for evaluating the degree to which an individual’s performance meets the organizational goals (Sonnentag & Frese 2001). Performance theory in agricultural insurance is one of the strategies for coping with risks in agricultural activities and to reduce the farmers’ income fluctuations. Agribusiness performance in this regard can be measured by the outcome such as turnover, cost of production, solvency, investment performance and

profitability and all which can be achieved through a factor such as agricultural insurance scheme.

Risk Management Theory

As described by Wenk (2005) “risk management is the identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities”. Ranong & Phuenngam (2009) opined that “effective administration of hazard can bring far reaching benefits to all organizations, whether large or small, public or private sector”. “These benefits include, superior financial performance, better basis for strategy setting, improved service delivery, greater competitive advantage, less time spent firefighting and fewer unwelcome surprises, increased likelihood of change initiative being achieved, closer internal focus on doing the right things properly, more efficient use of resources, reduced waste and fraud, and better value for money, improved innovation and better management of contingent and maintenance activities” (Wenk, 2005). In the account of Dorfman (2007), “ensuring that an organization makes cost effective use of risk management first involves creating an approach built up of well-defined risk management practices and then embedding them. These risk management practices include financial risks management practices, operational risk management practices, governance risk management practices, and strategic risk management practices”. According to the risk management theory by Wenk (2005), agricultural insurance scheme is one of the cost effective risk management mechanism that can assist agribusiness in achieving performance. Agricultural insurance scheme for managing both farm level and supply chain risks in agribusiness can bring far reaching benefits in terms of performance.

Empirical Review

Li and Wang (2022) carried out a study on the effect of policy based agricultural insurance on farmers income in China, the paper first clarifies the operation mechanism of policy-oriented agricultural insurance and its influence mechanism on farmers’ income from the theoretical level. Secondly, the fixed-effect model and panel quantile regression are used to empirically test the income effect of policy-based agricultural insurance on farmers, especially the effect on farmers of different income groups based on the panel data of 31 provinces (autonomous regions and municipalities directly under the central government) in China from 2007 to 2019. The results show that although policy-oriented agricultural insurance is beneficial to the increase of farmers’ income on the whole, which has significant heterogeneity on farmers of different income groups, and its influence becomes greater with the increase

of farmers' income. The finding of the study is related to this study in that farmers' income has to do with performance which is the major concern of this study.

Russo, Caracciolo and Salvioni (2022) evaluated the effect of insurance on production, technical efficiency, and input use of Italian specialised-quality grape growers. A panel instrumental variable stochastic frontier approach is applied over the years 2008–2017 using data from the Farm Accountancy Data Network. The results show the requirement to correct for the endogeneity that stems from insurance adoption. Insurance has an enhancing effect on production and efficiency and reduces the use of intermediate inputs. It suggests that insurance helps to diminish the risk-averse farmers' suboptimal input use due to the presence of uncertainty. Crop insurance leads risk-averse farmers to behave as if they were risk neutral and employs the profit-maximising input vector. Therefore, by reducing the risks linked to the uncertainty of outcomes, crop insurance leads grape growers to go in the direction of profit maximisation. There is relationship between the study and the research in question based on the nexus between agricultural insurance and profit maximization performance, though not on Nigeria Farmers.

Goodwin and Smith (2003) however found that almost half of the reductions in soil erosion due to the Conservation Reserve Program (CRP) were offset by participation to income support programs which positively affected the raises in erosion from farmer responses. Unsurprisingly, all of these contributes are related to United States. Because North America experienced a long history of crop insurance, they have a reliable time series which allowed economists to consistently estimate crop insurance adoption patterns, chemical input use and crop acreage allocation. Differently, in Nigeria such data are unavailable and this could justify the lack of this kind of analysis.

Lastly, Keeton, Skees and Long (1999) estimated the effects of disaster assistance and crop insurance on land-use patterns for the same crops in the plains and Midwestern states. More specifically, Keeton et al. tried to investigate on the possibility that government programs could push farmers in production to risky regions of the U.S. Their results pointed out that for every 1-percentage point increase in crop insurance participation, an additional 1.5 million acres are planted to the top six crops in the U.S. It is obvious that the Keeton et. al (1999) was conducted on Farmers in U.S.A and secondary data was adopted as the research instrument. The relevance of the finding to this study is that it emphasized on relevance of insurance though not on performance but on farmers' productivity.

Methodology

This study adopted time series research design in order to gather data from secondary source. The time series research design was used based on the fact that it would allow the researcher to be able to use data from government source such as Central Bank

Statistical Bulletin and publication of the Federal Ministry of Agricultural various report. The source of data for the study was secondary data obtained from the period 2014 to 2018. In addition, the over 260 registered agricultural businesses obtained from the Federal Ministry of Agriculture and Natural resources were the population for the study. More so, 40 purposely selected registered agricultural businesses were selected for the study on the basis of the fact that the selected registered agricultural business must had taken up agricultural insurance scheme. Both descriptive and Panel Regression analysis were used to investigate the objective of the study.

Empirical Result

The results obtained for the study were presented in the following tables

Table 1 Descriptive Statistics Result

Table 1 presented the result of the descriptive statistics obtained for the variables of the study.

Statistics	ROE	TURN	PROFIT	SOLV	CPROD
Mean	4.485125	6.052188	0.543750	2.381250	0.612500
Median	3.285000	5.670000	1.000000	2.000000	1.000000
maximum	26.78000	9.670000	1.000000	7.000000	1.000000
Minimum	0.340000	4.000000	0.000000	1.000000	0.000000
Stan. Deviation	4.006819	1.492372	0.499646	1.491578	0.488709
Skewness	2.338901	0.829097	-0.175674	1.098015	-0.461842
Kurtosis	10.66362	2.719212	1.030861	3.483441	1.213298
Jarque-Bera	1.4195	3.85632	2.67302	3.70841	3.96997
Probability	0.07653	0.054321	0.06547	0.55634	0.50234
Sum	717.6200	968.3500	87.00000	381.0000	98.00000
Sum Sq Deviation	717.6200	354.1207	39.69375	353.7438	37.97500
Observation	160	160	160	160	160

Source: Researcher's computation, 2022

The descriptive statistics obtained in table 1 for the variables of the study indicated that all the variables were normal. This showed that the independent variables of the study might exert a great influence on the dependent variable which in this case was performance. This inferred was based on the fact that the p-values of the Jarque-Bera statistics computed for the test items were all greater than the critical value of 5%.

Diagnostics Tests

In using Panel regression either fixed, random or both, it was necessary to adjust for spurious value that was inbuilt in the time series data. In doing this, the data must first be freed from the presence of unit root. This indicated that the time series data must

be stationary either at a constant level or at different level before proceeding to obtain the actual panel results. This section, of the study focused on the assessment of the nature of data used for the study using both the panel unit root of Philip Perron (PP) and Johansen co-integration tests.

Choice of Panel Regression Estimate

In Panel Regression analysis the determination of which estimate to employ is very crucial to the study. This is because Panel regression analysis involves many processes that need to be sequentially followed. Thus, this section conduct the Husman Test in order to determine whether fixed effect or random effect test would be best suitable for the study.

Table 2 Hausman Test Result

Correlated Random Effects - Hausman Test

Equation: Panel Random Effect

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	89.004013	5	0.0001
Cross-section fixed	3.675473	5	0.6743

Source: Researcher's Computation, 2022 (E-view, 9)

The result in table 2 presented the Hausman test computed for finding the degree of cross-section random effects. Looking at the result in the table, it was found that the p-value of the chi-square statistics computed for testing the cross-section random effect of 0.0001 was less than the critical value of 5% with significance Chi-Square statistics of 89.00. This indicated that there was an existence of cross section random effects among the parameters for the study. This further showed that the random effect test was a good estimator for verifying the suitability of insurance scheme for agricultural businesses on their performance. Meanwhile, the p-value of the Chi-Square statistics computed for cross section fixed effect of 0.6743 was greater than the critical value of 5%. This revealed that the fixed effect test could not be used to achieve the objectives of the study.

Unit Root Test

In order to be able to estimate the Panel Regression the variables of the study must be free from unit root problem. This indicated that they must be stationary. Therefore, the

result of the Philip- Perron test used to free the variables of the study from unit root was presented in table 2.

Table 3 Unit Root Result

Variables	Level		1 st Difference		Order of Integration
	PP-Stat	P-value	P- PP-Stat	P-value	
ROE	-4.93780	0.0000	-	-	I(0)
PROFIT	0.96431	0.8326	-5.02702	0.0000	I(1)
SOLV	-0.64314	0.2601	-3.36678	0.0004	I(1)
CofPRO	-1.67780	0.0645	-	0.0000	I(1)
			9.78341		

Source: Researcher's Computation, 2022

Table 3 presented the results of the unit root test computed for the variables of the study. Looking at the result from the table, it might be asserted that all the variables of the study were free from the unit root problem at their first difference Return on Equity (ROE) that was freed from the unit root at level. The implication of this was that Profitability, Solvency and Cost of Production were stationary at their first difference. This implied that they were free from the problem of unit root at integration of order one I (1)). This inferred was based on the fact that the p-values of the Philip- Perron computed for the variable at their first difference was less than the critical value of 5%. Moreover, it was found that ROE was stationary at level, I (0). On this basis of this result, it was reasonable to assert that the independent variables of agricultural insurance scheme might exert considerable influence on set of dependent variables such as turnover, profitability, solvency and cost of production as indicators for performance of the agricultural businesses not only in the short run but also in the long run period of the selected agricultural firms. The behavior of these variables in respect of the unit root result revealed that either the random effect panel regression could be used to achieve the set objectives of the study.

Co-integration Test Result

There was need to assert the significance of the level of long run relationship among the panel variables once it had been confirmed that these variables were free from unit root problem. This sub section dealt with testing for the existence of long run relationship among the variables of the study as presented in table 4.

Table 4 Panel Co-integration Result

Kao Residual Cointegration Test

Series: ROE, TURN, PROFIT, SOLV, CofPRO

Date: 12/05/22 Time: 11:43

Sample: 2014 2018

Included observations: 160

Null Hypothesis: No cointegration

Trend assumption: No deterministic trend

User-specified lag length: 1

Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	80.000435	0.00000
Residual variance	14.47577	
HAC variance	11.42837	

Source: Researcher's computation, 2022

Table 4 presented the result of the Kao Residual co-integration obtained for the tested variables. From the table, it was discovered that there was a co-integration equation among the variables of the study. This inferred was premised on the fact that the p-value of ADF –statistics computed of 0.00000 was less than the critical value of 5%. This resultantly revealed that all the variables of the study were related to performance of the Agricultural business in the long run. The implication of this was that agricultural insurance scheme had a substantial influenced on performance of the agricultural businesses in the long run. Therefore, agricultural insurance scheme had exerted great influence on turnover, profitability, solvency, and cost of production of agricultural businesses in Nigeria. The existence of a long run co-integration equation among the firm characteristics revealed that the random effect estimate must be used to achieve the set objectives of the study.

Table 5 Panel Result (Random Effect Estimate)**Dependent variable= Performance (PER)**

Variable	Coefficient	Standard Error	T-calculated	P-value
C	-0.969092	1.278176	-0.758184	0.4495
TURN	0.983082	0.267393	3.676539	0.0003
PROFIT	4.655083	0.595770	7.813557	0.0000
SOLV	0.962669	0.231964	4.150079	0.0000
CofPRO	0.893931	0.752464	1.188005	0.2367

	OTHER	TEST	STATISTICS
R-squared	0.893423		Mean dependent var 4.485125
Adjusted R-squared	0.881260		S.D. dependent var 4.006819
S.E. of regression	7.098767		Akaike info criterion 5.466528
Sum squared resid	214.895		Schwarz criterion 5.581847
Log likelihood	-31.34216		Hannan-Quinn criter. 5.513355
F-statistic	77.428828		Durbin-Watson stat 1.708009
Prob(F-statistic)	0.000000		

Source: Researcher's Computation, 2022 (E-view 9)

The result of the Panel Regression analysis obtained for the variables of the study was presented in table 5. Looking critically at the result in the table, it was observed that turnover was significant on performance of the selected agricultural business. This inferred was based on the fact that the p-value of the t-statistics computed for the test of 0.0003 was less than the critical value of 5%. The implication of this was that with increase turnover the capacity of the agricultural businesses to be able to improve production through adequate harnessing of local and foreign resources might improve. This could resultantly bring about the desire for the agricultural businesses to protect their business interest because unforeseen circumstance that could change the fortune of business might arise at any time. The regression coefficient obtained for the variable of turnover was 0.98 and positive with significant t-statistics value of 3.68. This showed that there was a significant positive relationship between turnover and performance of the agricultural businesses. Thus, a 1% increase in turnover of the selected agricultural businesses might lead to 0.98% improvement in performance. The variable of turnover might be a determinant of performance of the selected agricultural businesses.

The result in the table further revealed that the p-value of the t-statistics calculated for profitability of 0.0000 was less than the critical value of 5%. This showed that the null hypothesis which stated that profitability of the selected firms was not significant on their performance was rejected. It was saved to assert that profitability was significant on the performance of the agricultural businesses. The essence of a business venture was to be able to make profit/return for its owner. Epetimehin (2018) argued further that as the business profitability growth the possibility of the venture to be exposed to business vices that could only be mitigated through insurance/small insurance arrangement increased. Thus, the necessity for a business unity to go into insurance covered in this case increased. This according to Ariyibi (2017) was necessary in order to enhance continuous business profitability survival. The regression coefficient

obtained for this variable was 4.66 with significant t-statistics value of 7.81. The implication of this was that there was a significant positive relationship between profitability and performance of the selected agricultural businesses. As a result of this, a 1% increase in the profitability of the selected firms might lead to 4.66% improvement in the firm performance. This variable of profitability might be one of the variable that enhanced the performance of agricultural businesses in Nigeria.

Looking further at the result in the table, it was discovered that the p-value of the t-statistics calculated for solvency of 0.0000 was less than the critical value of 5%. This indicated that the null hypothesis which stated that solvency was not significant on performance of the selected was rejected. It was saved to assert that solvency was significant on the performance of the selected agricultural businesses. The ability of the management of the selected firms to be able to use their current assets to settle their creditors without the need to sell off their assets could increase the performance of the business. A business venture was said to be sustainable if it had a enough cash flow to be able to carry out its day to day business activities. It must be noted that as the solvency increased so must the fear of the management growth due to the activities of unscrupulous employees. As a result of this the need for insurance cover increased. This desired if activated could go a long way to enhance agricultural businesses performance. The regression coefficient obtained for the test item was 0.89 with significant t-statistics value of 4.15. This showed that there was a significant positive relationship between solvency and performance of the selected agricultural businesses. The import of this was that a 1% increase in solvency of the business might cause 0.96 improvement in the performance of the agricultural businesses. Thus, solvency might be a determinant of performance in the selected agricultural business.

Furthermore, it was found that the p-value of the agriculture insurance scheme proxy as the cost of production to the farmers by the insurance companies of 0.2367 was greater than the critical value of 5%. This indicated that agricultural insurance scheme was not significant on the performance of the farmers. The implication of this was that the cost of production of the farmers was not enough to enhance the sustainability of the agricultural businesses. In fact, many of the farmers the researcher interacted with stated that the cost of production to them through the scheme was so insignificant to facilitate increase business production needed to enhance better performance. The regression coefficient obtained for the test item was 0.89 and positive with insignificant t-statistics value of 1.19. This showed that there was a positive and insignificant relationship between agricultural insurance scheme and performance of the selected agricultural businesses. The test variable might be said not to be a determinant of performance for the farmers.

The result of other test statistics computed for the test item revealed that agricultural insurance scheme was essentially needed to increase the performance of the

agricultural businesses. For instance, the coefficient of determination (R^2) obtained for the test of 0.89 showed that approximately 89% of the performance of the agricultural businesses might be a direct function of turnover, profitability, solvency and cost of production resulting from agricultural insurance scheme. This confirmed that agricultural insurance scheme was a good determinant for the performance of the selected agricultural businesses. More so, the p-value of the F-statistics computed for the test of 0.00000 was less than the critical value of 5%. This indicated that the joint null hypothesis which stated that agricultural insurance scheme was not significant on the performance of the agricultural businesses was rejected. It was saved to assert that agricultural insurance scheme was significant on the performance of the agricultural businesses. The Durbin-Watson statistics computed for the test was 1.708009. The value showed that the variables of the study were freed from the problem of auto-correlation.

Conclusion and Recommendation

Conclusion

The study had revealed that agricultural insurance was not significant on the performance of the selected agricultural business. It was observed that turnover, solvency, profitability and cost of production of the selected agribusiness were substantially significant and positively related to the performance of the firm in Nigeria.

Recommendation

The following recommendations are made.

There is need for the government to continue to intervene meaningfully in agricultural insurance scheme. This may enhance adequate insurance cover for the small and medium scale farmers. Moreover, the agricultural business practitioners need to come together in cooperation by establishing cooperative society that can use to front for their insurance scheme. This can save cost for the individual farmers.

The turnover, profitability and solvency of the agricultural businesses need to be adequately covered through appropriate insurance policy due to the activities of unscrupulous officials in the businesses and unforeseen occurrence of natural disasters that may wipe out any reasonable gain the business has achieved if occur.

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