Economic Determinants Of Tax Compliance AmongAgro-Allied Industries in Katsina State, Nigeria

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Abstract

One of the most effective and efficient means of revenue generation that can be used to achieve growth and development by the Nigerian government is tax. However, this can only be achieved through effective tax compliance by the taxpayers like agro-allied industries. Importantly, the agro-allied industries are one of the emerging sub-sectors that can provide government with more tax revenue, which are dominantly present in some local government areas of Katsina state. Therefore, this study empirically investigates the economic factors that determine tax compliance among agro-allied industries in some selected local government areas of Katsina state. In this direction, primary data was collected from 133 agro-allied industries in six (6) local government areas of Katsina state through the use of structured questionnaire and multinomial logit model was adopted for data estimation. The findings basically show that perception on government spending and level of income have significant effects on tax compliance among agro-allied industries; whereas, tax rate indicates insignificant effects on tax compliance. Flowing from the findings, this study recommends that tax rates should be kept moderately low by the government, so as to fiscally motivate taxpayers to comply positively. Similarly, tax authorities should introduce efficient e-tax management platform, in order to control corruption in tax administration, stimulate voluntary tax compliance and provide convenient tax payment procedures, in order to prevent/reduce tax evasion in the country.

Keywords: Agro-allied industries, Fiscal policy, Logit model, Nigeria, Tax compliance, Economic determinants.

1.0 Introduction

In recent times, Nigerian government decides to diversify her economy in order to reduce over-reliance on oil products (ERGP, 2017). One of the measures taken to achieve this goal is the closure of land borders so as to control the importation of some goods, agricultural output inclusive.

The policy aims at boosting the capacity of local farmers and encouraging the scale of agricultural processing industries. This results to establishment of a number of agro-allied industries all over the country; and agro-allied industries are companies, which agriculture serves as the source of

their raw-materials for the production of finished goods for human and animal consumption. According to Jelilov and Bahago (2017), agro-allied industry is an industry which aims at manufacturing of agricultural inputs and application of modern technology in the production, processing and packaging of farm produce (food and related item). Therefore, it is instructive to state that the role of agriculture in economic development cannot be over-emphasized.

Some of the several economic roles of agriculture include among others: provision of labor to urbanized industries, supply of food and higher income to the teeming population, successful flow of savings for industrial investments, creation of markets for industrial output, means of export earnings and production of primary materials for agro-allied industries (Johnston and Mellor, 1961). According to Anyanwu (1997), agriculture has been the main source of food, local raw materials for industries, gainful employment, and also a reliable source of government revenue, which is generated through personal and corporate income taxes. Therefore, agriculture is one of the major sources of revenue to the government, more specifically the company income tax, which is imposed on corporate bodies like the agro-allied industries. For instance, a study conducted by Harvard Business School in 2014 on the tomato value-chain in Nigeria confirmed that Nigeria is among the 13 largest producers of tomato in the world but unfortunately, is one of the largest importers of tomato paste in the world. The study further pointed out that, in average, Nigeria produces 1.5 million metric

tonnesof tomato yearly, in which 50% of the harvest get bad before reaching market as a result of inadequate infrastructures and equipment, and the remaining half is sold at a very cheap price due to the general oversupply in the market and the perishable nature of the product (Harvard Business School, 2014). Nonetheless, Jelilov and Bahago (2017) stated that millions of metric tonnes of agricultural output are produced each year in Nigeria, out of which a reasonable amounts get worse within a very short time after harvest. This results to a shortage in supply of these agricultural products. Therefore, in order to process the agricultural output and maintain the supply all the year round, agro-allied industries were set-up by governments and private organizations in various states, Katsina state inclusive.

Considering the increasing number and nature of agro-allied industries, Nigerian government can surely generate more tax revenue from the sector, in order to promote growth and development. But this could be impossible without effective compliance with the tax laws. Surprisingly, Oyedele (2016) describes tax compliance in Nigeria as bad with 12 percent rate of compliance. Nevertheless, despite the recent progress achieved by the PMB's administration regarding corporate income tax registration, the immediate past Minister of Finance – Mrs. Kemi Adeosun stated that "over 75% of the registered corporate bodies were outside the tax net, out of which 65 percent do not file returns in order not to pay tax at all" (Oyedele, 2016, p. 2) According to HM Treasury, Revenue and Custom (2019), the challenges surrounding tax collection and payment procedures are

characterized by tax evasion, tax avoidance and other forms of tax non-compliance, which can be found across all types of taxpayers and taxes.

In this direction, economic determinants/factors in relation to tax compliance refers to the steps taken to measure the costs and benefits in relation to tax collection (Loo, 2006). According to Alm (1995), taxpayers are logical economic evaders who try to measure the costs and/or benefit of evading tax. This factor is a major category among the determinants of tax compliance. It includes sub-factors like tax rate, level of income and perception on government spending (Deyganto, 2018). According to Whitte and Woodbury (1985), a higher marginal tax rate may likely result to a rapid increase in tax evasion. Alm (1995) found that tax rate is positively related with tax compliance. But Tanzi (1980) observed that it has negative correlation with tax compliance i.e. the higher the tax rate the lower the compliance, which is consistent with the Laffer curve concept. According to Sparc Report (2014), various tax authorities in Nigeria have been coming-up with various policy measures to encourage positive compliance among taxpayers.

However, addressing the issue of tax compliance requires a clear understanding of factors that are fundamental to the individual taxpayers in making decision of whether to comply positively or negatively with the tax laws. More especially, Kirchler (2007) stated that factors affecting tax compliance differ from society to society and also from individual taxpayer to another taxpayer. Because of this reason, this study chose to analyze the economic determinants, in order to examine their effects on tax compliance, with a particular focus on agro-allied industries in Katsina state. Based on the above stated problem, this study aims to empirically examine the economic determinants of tax compliance among agro-allied industries with evidence from selected local governments in Katsina state, Nigeria. In this regard, the specific objectives to be achieved are: (i) to investigate the effect of perception on government spending on tax compliance among agro-allied industries in Katsina state; (ii) to examine the effect of level of income on tax compliance among agro-allied industries in Katsina state; and (iii) to evaluate the effect of tax rate on tax compliance among agro-allied industries in Katsina state. As a matter of fact, flowing from the objectives of this study the following hypotheses have been formulated for validation: $H_{01:}$ There is no significant effect of perception on government spending on tax compliance among agro-allied industries in Katsina state; $H_{02:}$ Level of income has no significant effect on tax compliance among agro-allied industries in Katsina state; and H_{03}: Tax rate does not significantly affect tax compliance among agro-allied industries in Katsina state.

2.0 LITERATURE REVIEW

2.1 Theoretical Literature

Among the most popular and widely cited theories on taxation in the literature is the ability to pay theory. This theory advocates that taxpayer should pay taxes according to their abilities. It is the most popular theory of taxation based on the principle of equity and justice; and it thus explains its wide acceptability among scholars and

practitioners on taxation (Obara &Nangih, 2017). According to Ojochogwu and Stephen (2012), the government should consider the ability of taxpayers before setting the tax, in order to enhance even distribution of income. In this vein, the theory suggests that when the financial ability of Mr. A is more than that of Mr. B, then the former should pay more tax than the latter. However, some scholars recommend that income is the appropriate measure of ability to pay tax; some of them are of the opinion that expenditure is the best determinant of ability to pay; whereas others are of the view that ownership of properties is the proper factor that determine the ability to pay tax. Ocheni (2015) stated that the theory started in the 16th century, and subsequently extended by the Swiss philosopher-Jean Jacques Rousseau (1712-1778), and the French political economist-Jean Baptiste Say (1767-1832).

Another prominent theory on taxation, especially on tax compliance is economic deterrence theory, which describes taxpayer as a rational being who compares the gain and cost of evading tax; if the benefit (money not paid as tax) exceeds the cost (penalty after tax audit) it will result to a serious tax evasion, reverse is the case. According to this theory, the problem of tax evasion can be curtailed through either persuasive or punitive measures. Punitive measure is based on increase in the rate of penalties and probability of audit, while persuasive measure is achieved through reward and impacting tax knowledge to the taxpayers (Feld & Frey, 2007). Falkinger and Walther (1991) argued that combination of reward and penalty is more effective in dealing with the problem of tax evasion than punishment only. Devos (2014) posits that deterrent effect may not necessarily be achieved through increase in penalties when a taxpayer is sure that a probability of being caught is low. According to Franzoni (1999), a proper application of economic deterrence theory is the most efficient way of resolving the challenges surrounding tax collection.

2.2 Empirical Literature

Some of the study studies on determinants of tax compliance include that by Assfawa and Sebhat (2019), which investigates the relationship between tax compliance and its determinants in Kaffa, Bench Maji and Sheka zones category B taxpayers, SNNPR, Ethiopia. Ordered logit model was adopted for data analysis. The findings show that tax compliance was positively affected by taxpayers' level of education, taxpayers' awareness and their level of tax knowledge, simplicity of the tax system, taxpayers' attitude towards tax, perception of taxpayers on government expenditure, and rewarding scheme for loyalty among taxpayers. These findings are consistent with the findings of Riahi-Belkaoui (2004) and Richardson (2008). Another study by Tilahun (2018) examines the economic and social factors of voluntary tax compliance in Bahir dar city. The study employed ordered logit model for data analysis. As such, the evidence revealed that factors such as tax rate, taxpayers' perceptions on government expenditure, efficiency of the tax system, penalty after tax audit and cost of compliance were found to be the factors determining taxpayers' voluntary compliance.

Also, a study by Manaye (2018) examines the determinants of tax compliance in Wolaita Sodo and Tercha Town, Ethiopia. The study adopted multiple linear regression model for estimation. The findings show that tax compliance behavior was influenced by tax audit, personal financial constraints, and changes in government policy. A similar study was conducted by Deyganto (2018) on the factors influencing taxpayers' voluntary compliance attitude with tax system in Southern Ethiopia and the study adopted binary logistic regression model. The findings indicate that the major factors affecting taxpayers' voluntary compliance behavior in the study area are age, probability of being audited, gender, lack of tax knowledge, perception on tax rate, awareness on penalty and simplicity of tax system. Other variables such as tax authority efficiency, perception on fairness and equity, education level, peer influence, occupation, perception on government speeding and income level of taxpayers, are not significant in determining tax voluntary compliance attitude.

Similarly, Puri, Bambang and Lukytawati (2018) interrogated determinants of tax compliance in tax amnesty programmes with the use of experimental approach and variance analysis. Their findings indicate that taxpayers with lower income are more compliant than taxpayers from higher income level. Furthermore, the taxpayers prefer to declare their income at lower tax rates. Similarly, the enforcement tools adopted by the government like tax penalties and tax audit shows significant effect on tax compliance. Furthermore, a study was conducted by Adimassu and Jerene (2016) to examine the factors that influence taxpayer's voluntary compliance behavior in Self-Assessment System in Southern Nation Nationalities and Peoples` Regional State (SNNPRS), Ethiopia. This study employs Pearson correlation matrix and logistic regression model for data analyze. The results of this study revealed that perception on government spending, tax knowledge, probability of auditing, simplicity of tax returns and administration, perception on fairness and equity and the influence of referral group were factors determining the voluntary compliance attitude in Self-Assessment System (SAS).

Also, Ojochogwu and Stephen (2012) investigated the factors that affect tax compliance among Small and Medium Enterprises (SMEs) in north Central Nigeria utilizing logit model to analyze the response variable. Some of the findings emanating from the study suggest that factors such as difficulties in filing procedure and high tax rates are the most significant determinants the lead to tax non-compliance among SMEs. In the same vein, other factors that have lesser effects include lack of tax knowledge and multiple taxation affect tax compliance among the SMEs. The results support previous findings in the works of Park and Hyun (2003) and Tanzi (1980). Anyaduba, Eragbhe and Kennedy (2012) used ordinary least square (OLS) regression technique to examine the effects of deterrent tax measures on tax compliance in Nigeria. It was found that the existing deterrent tax measures in Nigeria are inadequate and have not helped to promote tax compliance in the country. It was also discovered that fostering voluntary

compliance and enhancing taxpayer's morale will enhance tax compliance.

3.0 DATA AND METHODOLOGY

3.1 Data

This study investigates the economic determinants of tax compliance among agro-allied industries with particular emphasis on six (6) local government areas in Katsina state, which include: Funtua, Dandume, Faskari, Bakori, Malumfashi and Kankara. All these local governments belong to the same senatorial zone (Katsina South/ Funtua senatorial zone); and the main occupation of the people residing in these areasis agriculture. The crops grown include: Maize, Guinea corn, Cotton, Groundnut, Rice, Yam, Sugar cane and Soya beans, among others. Animal husbandry, fishery, poultry farming, agro-forestry and garden, are other forms of economic activities (Sesp, 2010).That is why most of the agro-allied industries in the state are located around this area. Some of the industries are owned by government while some by private individuals. They include industries such as: Fertilizer Processing Plants, Cotton Ginneries, Oil and Flour Mills, and Rice Mills, among others. Some industries are large scale while others are micro, small and medium.

Due to the nature of this study, primary source of data was utilized through the use of self-administered questionnaire. The population of the study constitutes all the agro-allied industries located in the six (6) selected local governments of Katsina state. Those local governments are chosen due to the fact that most of the agro-allied industries in the state are located there. Thus, the study adopted purposive sampling technique to choose the members of the population to be considered in the study base on judgment of the area of study. Furthermore, the total population sampling method was adopted as a result of the fact that the population size is small. According to Kothari (2004), total population sampling is a type of purposive sampling technique where a researcher decides to analyze the entire members of the population in which the population size is relatively small and the elements share a common set of characteristics. In this connection, all the 133 agro-allied industries located in the six (6) selected local government areas were purposively selected. Moreover, the questionnaire was designed with some modifications from previous similar related works by Magiya (2016) and Musau (2015). Moreover, the Cronbach Alpha test was utilized to test the reliability of the questionnaire instrument. Table 2 provides more information regarding the reliability test.

3.2 Theoretical Framework

Economic determinants of tax compliance are tax rate, level of income and perception on government spending (Deyganto, 2018). Therefore, the three variables listed on the right hand side of figure 1, which include perception on government spending, level of income and tax rate (economic factors) are the independent variables, while the variable at the left hand side (tax compliance) is the dependent variable.
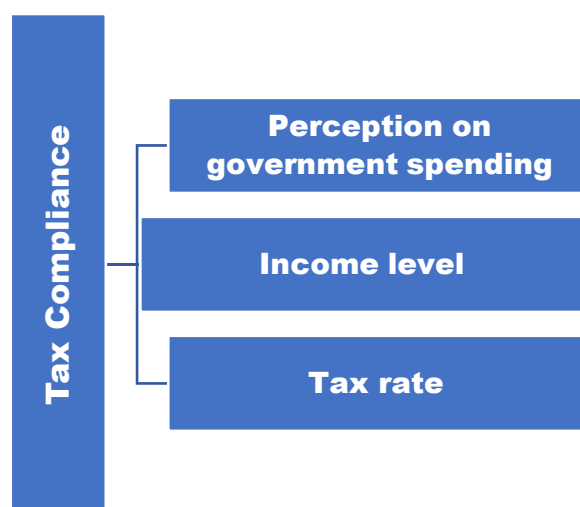
Figure 1. Model of Economic Determinant of Tax Compliance

Source: Constructed by the Authors (2020).

Furthermore, the variables which were used to achieve the objectives of this study are as follows: Tax compliance (TC) as dependent variable, while tax rate (TR), level of income (LI), and perception on government spending (PGS) are the independent variables as presented in table 1.

Table 1: Components of the Dependent and Independent Variables

Dependent Variable: Tax Compliance (multiple response variable)	• Tax compliance • Tax evasion • Tax avoidance • Other forms of tax non-compliance
Independent Variables: (Economic Determinants of Tax Compliance)	• Tax rate • Level of income • Perception on government spending

Source: Compiled by the Authors (2020).

A related study by Deyganto (2008) and Ojochogwu and Stephen (2012) adopted qualitative research technique to analyze the tax compliance determinants by allowing the response variable (dependent variable) to take two (2) values only, which are tax compliance and tax non-compliance (positive and negative compliance).
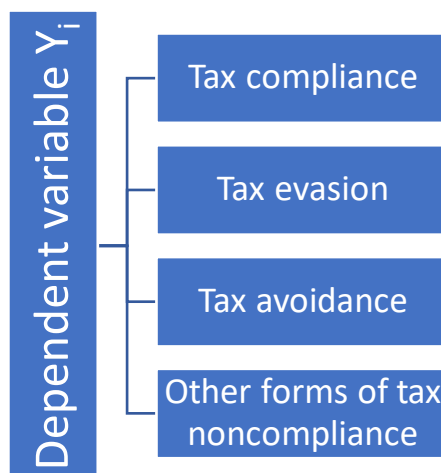
Figure 2: Multiple Response Variables

Source: Constructed by the Authors (2020).

However, this research is design in such a way that the dependent variable takes four (4) responses as shown in figure 2 i.e. tax compliance, tax evasion, tax avoidance and

3.3 Model Specification

Accordingly, the study considered tax compliance (TC) as dependent variable, while perception on government spending (PGS), level of income (LI) and tax rate (TR) are the explanatory variables as provided in table 1 and figure 1. Based on the stated variables, the following functional model was developed:

TC = f (PGS, LI, TR)…………………………………………………………………………....1

Where TC is the tax compliance, PGS is the perception on government spending, LI is the level of income and TR is the tax rate. Based on the above equation, the following econometric model was formulated:

$Y_i = \beta_0 + \beta_1 PGS_i + \beta_2 LI_i + \beta_3 TR_i + e_i$…………………………………………………………… 2

Where:

other forms of tax noncompliance, in order to achieve robust responses for better results and findings.

$PGS_i, LI_i,$ and TR_i are the explanatory variables, β_0 is the intercept, β's are the parameters (coefficients) to be estimated, and e_i is the stochastic error term representing all the unobservable determinants of tax compliance. As presented in figure 2, the dependent variable Y_i has the probability of more responses which cannot be ranked or ordered in any natural way, they are essentially nominal in character. As such, multinomial logit model was adopted for data analysis. Thus, the choice pattern of multinomial logit model can take the following forms:

$$Y_i = X_{TC}\,\beta_{TC} + e_{TC}$$

$$Y_i = X_{TE}\,\beta_{TE} + e_{TE}$$

$$Y_i = X_{TA}\,\beta_{TA} + e_{TA}$$

$$Y_i = X_{TN}\,\beta_{TN} + e_{TN}$$

Where:

TC = Tax Compliance

TE = Tax Evasion

TA = Tax Avoidance

TN = other forms of Tax Non-compliance

e_{TC} , e_{TE} , e_{TA} and e_{TN} are error terms.

However, if

$$X_{TC} \beta_{TC} + e_{TC} > \max(X_{TE}\beta_{TE} + e_{TE}, X_{TA}\beta_{TA} + e_{TA}, X_{TN}\beta_{TN} + e_{TN}) \text{ then } Y_i = 1 \ ….………… 3$$

$$X_{TE} \beta_{TE} + e_{TE} > \max(X_{TC}\beta_{TC} + e_{TC}, X_{TA}\beta_{TA} + e_{TA}, X_{TN}\beta_{TN} + e_{TN}) \text{ then } Y_i = 2 ….…………4$$

$$X_{TA} \beta_{TA} + e_{TA} > \max(X_{TC}\beta_{TC} + e_{TC}, X_{TE}\beta_{TE} + e_{TE}, X_{TN}\beta_{TN} + e_{TN}) \text{ then } Y_i = 3 \ ….……..…5$$

$$X_{TN} \beta_{TN} + e_{TN} > \max(X_{TC}\beta_{TC} + e_{TC}, X_{TE}\beta_{TE} + e_{TE}, X_{TA}\beta_{TA} + e_{TA}) \text{ then } Y_i = 4 …………..6$$

The above equations show that when $Y_i = 1$ the taxpayer complies positively with the tax laws, but when $Y_i = 2$ the taxpayer evades the tax, for $Y_i = 3$ he avoids tax and lastly when $Y_i = 4$ the taxpayer has other forms of non-compliance.

4.0 RESULTS AND DISCUSSIONS

4.1 Summary of Descriptive Statistics

The study distributed 133 copies of questionnaires to the agro-allied industries located inthe six (6) selected local government areas of Katsina state in which 108 copies were correctly filled and returned back. As such, 81.2% rate of return was achieved. In this connection, table 2 presents the summary of descriptive statistics. As shown in the table, 108 is the total number of observations where the mean value of the variables ranges between 2.03 - 0.63. Furthermore, PGS has the highest mean score (2.03) and standard deviation (0.926) with 1 as minimum and 3 as maximum. This implies that on average the respondents are on the opinion that the government spending is moderate, and that the variability between the mean and the individual responses is low. Accordingly, the variable TR recorded the least mean value of 0.63 and standard deviation of 0.540 with minimum of 1 and maximum of 3, it also, has the lowest. This informal evidence depicts that the respondents have perception that the tax rate is high with least variability from the mean score.

Moreover, the table shows that all the series of the variables are positively skewed to the right. The Kurtosis statistics indicates that all the series were approximately equal to three (3). Hence, the data series used for analysis in this study is symmetric and normally distributed.

Table 2: Descriptive Statistics

Statistics Criteria	TR	LI	PGS	TC
Observations	108	108	108	108
Mean	.63	1.66	2.03	1.76
Variance	.291	.676	1.224	.857
Standard Deviation	.540	.822	.926	.920
Skewness	1.608	.914	1.126	1.501
Kurtosis	2.933	2.845	2.710	3.015
Minimum	1.000	1.000	1.000	.000
Maximum	3	3	3	3

Source: Authors' Computation (2020).

Table 3 shows the result of reliability test using Cronbach's Alpha where it is revealed that, the scores of the entire reliability test has Cronbach's Alpha score of 0.80 which is greater than 0.60 benchmark adopted for the study (Sekaran, 2003). Hence, this high rate of reliability score indicates the presence of internal consistence among the four dimensional constructs used in this study. More so, the table revealed the result of independent score of each of the dimensions in the study, in which the level of income being the dimension with high Cronbach's Alpha score of 0.78, followed by tax rate and perception on government spending with 0.70 each and lastly in this regard is the tax compliance with the least of Cronbach's Alphas score of 0.61.

Table 3 Result of Reliability Test

Variables	Cronbach's Alpha Scores	No. of items
Tax rate	0.70	5
Level of income	0.78	5
Perception on government spending	0.70	5
Tax compliance	0.61	10
Overall test scale	0.80	

Source: Author's Computation Using SPSS 20.0 (2020).

Also, table 4 indicates that one hundred and eight (108) is the total number of questionnaires correctly filled and returned back, out of which 43 copies are in favor of tax compliance capturing 39.8 percent. Furthermore, 62 copies are in favor of tax evasion covering 57.4 percent; while, only 3 responses are related to tax avoidance taking 2.8 percent; and other forms of noncompliance has zero outcome. Therefore, the total number of the valid cases as presented in the table is 108. This implies that out of the total number of 108, 43 taxpayers do comply with the tax laws; 62 of them do evade the tax and only three (3) do avoid it.

Table 4: Case Processing Summary

Variable	Options	Number	Marginal Percentage
TC	COMPLIANCE	43	39.8%
	EVASION	62	57.4%
	AVOIDANCE	3	2.8%
Valid Cases		108	
Missing		0	
Total		108	
Subpopulation		25	

Source: Authors' Computation (2020).

Table 5 presents model fitting information, in this regard a null hypothesis that the explanatory variables did not fit the model is tested against alternative hypothesis. The value of chi-square tabulated at 5 percent significance level is 15.507 which is less than the calculated value of 19.8 as shown in table 5. As such, the evidence is consistent with alternative hypothesis that the explanatory variables fit the model. In this connection, the explanatory variables incorporated in the model are among the best set of economic variables explaining the tax compliance behavior among agro-allied industries in the study area.

Table 5: Result of Chi-Square Test

Model	Model Fitting Criteria		Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	Df		P-value
Intercept Only	69.079				
Final	49.157	19.812	8		.002

Source: Authors' Computation (2020).

Also, table 6 contains the results of Pseudo R-square and the study considers Nagelkerke, which is 0.412. This implies that 41.20% variation in tax compliance is

explained by the predictor variables (perception on government spending,level of incomeandtax rate). The implication of this evidence is that, there are many factors determining tax compliance behavior such as those under social, institutional, individual, demographic and economic factors (Palil, 2010; Kirchler, 2007; Loo, 2006) but this study considers only economic factors.

Table 6: Pseudo R-Square Measures

Cox and Snell	.362
Nagelkerke	.412
McFadden	.306

Source: Authors' Computation (2020).

Table 7 presents the results of likelihood ratio tests, here, the null hypothesis for all the explanatory variable is tested against alternative using chi-square test. As presented in the table, the value of chi-square calculated for variable PGS is 7.241 which is greater than tabulated value at 5% level of significance (5.991). Therefore, the study is in favor of alternative hypothesis and concludes that the variable quite fit the model. Accordingly, the value of chi-square calculated for variable LI (15.321) is greater than the tabulated value at 5% level of significance (5.991). Hence, the study rejects the null hypothesis and concludes that LI fits the model. Lastly, in this regard, is the value of chi-square calculated of variable (TR), which is 4.664. This is less than the tabulated value at 5% significance level (5.991). Therefore, the null hypothesis is accepted that (TR) does not individually fit the model.

Table 7: Likelihood Ratio Tests

Effect	Model Fitting Criteria	Likelihood Ratio Test		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	59.3577[a]	9.411	2	.002
PGS	58.237	7.241	2	.037
LI	63.398	15.321	2	.000
TR	54.961[a]	4.664	2	.101

Source: Authors' Computation (2020).

4.2 Presentation of Multinomial Regression Estimates

Essentially, table 8 presents the result of multinomial logit regression model in which the value of coefficient regarding PGS is 12.074 signifying positive relationship between perception on government spending and tax compliance. Furthermore, the coefficient of LI is -26.130, this shows negative relationship between tax compliance and level of

income; the higher the level of income the lower the tax compliance. Taking a look at TR which has -0.785 as coefficient, this indicates that the tax rate is inversely related with tax compliance.

Table 8: Result of Multinomial Logit Regression

TC		Coef. (β)	Std. Error	t-cal	Df	P-value
Compliance	Intercept	53.430	2.422	486.841	1	.000
	PGS	12.074	.223	2927.761	1	.000
	LI	-26.130	.445	3442.975	1	.000
	TR	-.785	.805	.952	1	.329

Source: Authors' Computation (2020).

4.3 Discussion of Findings

From table 8, the value of the parameter pertaining PGS is 12.074, implying that a 1% increase in perception on government spending leads to 12.074 increase in tax compliance. The value of t-calculated (2927.8) is greater than the value of t-tabulated at 5% significance level (1.980); and the probability value is 0.000. Hence, hypothesis H_{01} is rejected. Therefore, the study established that PGS is a significant determinant of tax compliance among agro-allied industries in the six (6) selected local governments in Katsina state. The implication is that increase in the provision of infrastructures would make taxpayers to be satisfied with the way government spends the public funds and that tends to increase the level of compliance behavior. Therefore, the taxpayers consider capital project as an encouraging factor for complying with the tax laws. This evidence is consistent with the findings of Assfawa and Sebhat (2019).

Also, the coefficient of LI (-26.130), signifies that a 1% increase in the level of income leads to 26.130 decrease in tax compliance. From the table, 3442.98 is the value of t-calculated, which is greater than the value of t-tabulated at 5% significance level (1.980). Similarly, the p-value (0.000) is less than 1% significance level. Therefore, hypothesis H_{02} is rejected. As such, the study concludes that level of income is significant in explaining tax compliance in the study area. This suggests that when a taxpayer realizes that he shall pay a high amount of tax to the government due to his high level of income, it may discourage him to comply by following several steps to reduce tax liability, in order to pay lesser tax. This evidence is consistent with that of Mohani (2001). Furthermore, the magnitude of the parameter regarding variable TR is -0.785, which signifies that a 1% increase in tax rate leads to 0.785 decrease in tax compliance. The result shows that TR is insignificant in explaining tax compliance, because the value of t-calculated is 0.952, which is less than the t-tabulated at 5% level of significance (1.980).

As such, hypothesis H_{03} is accepted. Hence, the result proves that TR i.e. tax rate is insignificant in explaining the behavior of tax compliance among agro-allied

industries in Katsina state. This evidence is consistent with findings of Tanzi (1980) and it is also consistent with the position of Laffer curve concept, which established inverse relationship between tax rate and tax compliance. Therefore, this finding implies that when taxpayers perceive the favorability of tax rate (i.e. low tax rate), it used to motivate their attitudes towards tax compliance by increasing the level of compliance; and when it is unfavorable (high), they tend to behave negatively towards tax laws by reducing the level of compliance. As such, a rise in tax rate encourages the taxpayers to declare less income, in order to compensate reduction in real income.

5.0 Conclusion and Recommendations

The main aim of this study is to analyze the economic determinants of tax compliance among agro-allied industries in Katsina state, Nigeria. Hence, the study obtained relevant information/data from the field through the use of self-administered questionnaires. As such, multinomial logit model was adopted for data analysis. Essentially, the finding of the study shows that perception on government spending positively and significantly affects tax compliance, while the level of income is a negative and significant determinant of tax compliance. Accordingly, the evidence proves that tax rate is a negative and insignificant determinant of tax compliance among agro- allied industries in the study area.

Based on the foregoing discussions the study recommends: (i.) tax rates should be kept moderately low by the government in order to motivate the taxpayers to comply positively. (ii.) the government should formulate efficient policy measures with the aim of boosting the capacity of micro, small and medium scale enterprises in terms of financial capital and technical expertise. (iii.) regular awareness and publicity should be organized by the tax authorities so as to sensitize taxpayers, especially corporate organizations like agro-allied industries which may result to increase in the level of compliance among the taxpayers; and (iv.) e-tax management platform should be introduced by tax authorities like the Katsina State Board of Internal Revenue. This may assist in controlling corruption among tax officials, motivate voluntary tax compliance and provide convenient tax payment procedures, in order to prevent/reduce the rate of tax evasion in the country, which shall enhance tax revenue for development.

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