



# Determinants of Voluntary Tax Compliance among Small and Medium Scale Enterprise (SMEs) in North Central of Nigeria

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## Abstract

Tax compliance among Small and Medium Enterprises (SMEs) is crucial for economic development, yet many SMEs face challenges in adhering to tax regulations. This study explores the influence of Tax Knowledge and Awareness (TKA) and Perceived Fairness of the Tax System (PFTS) on voluntary tax compliance among SMEs in the North Central zone of Nigeria. The main objective is to assess the relationship between these factors and their impact on tax compliance behavior. The study employs a quantitative research design, using data collected through surveys from SMEs in the region. Regression analysis, including t-tests and p-values, was conducted to examine the significance of TKA and PFTS in influencing voluntary tax compliance. The findings reveal that both TKA and PFTS have a significant positive effect on voluntary tax compliance. Specifically, increased knowledge about tax regulations and a higher perception of fairness in the tax system were associated with greater compliance among SMEs. The regression results show that TKA (p-value = 0.003) and PFTS (p-value = 0.000) are statistically significant, indicating strong relationships with compliance behavior. The study concludes that improving tax knowledge and enhancing the perceived fairness of the tax system are key factors in boosting tax compliance among SMEs. Recommendations include the implementation of targeted tax education programs and efforts to improve the transparency and fairness of tax administration to foster trust and compliance. These findings contribute to the understanding of voluntary tax compliance, particularly in developing economies.

**Keywords:** Tax compliance, SMEs, Tax Knowledge and Awareness, Perceived Fairness.

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## 1. Introduction

Tax systems with voluntary compliance where taxpayers do not owe their duty through force is fundamental to efficient tax systems (OECD, 2022). It minimizes the administrative expenditures, develops trust between the taxpayers and the authorities, and guarantees equitable income redistribution (OECD, 2023). The global tax compliance strategies have in the last 2 decades changed towards losing the strict enforcement of compliance structures to the behaviorally informed approach that emphasizes on intrinsic motivation, trust, and fairness (Kirchler et al., 2008; John, 2019).

Germany, Australia, and the U.S are developed economies where tax authorities have embraced participatory governance, a digital tax system, and taxpayer services (OECD, 2022). This has reduced compliance as it has increased convenience and transparency with the aid of e-tax platforms and real-time tracking of transactions.

Nevertheless, in sub-Saharan Africa, there are issues of voluntary compliance especially in the informal sectors that constitute more than 60 percent of the employment (ILO, 2022). The businesses are usually unregistered in the form of taxes because of the complexity of regulations, tax illiteracy, ineffective



enforcement, and mistrust in the government (ATAF, 2021; IMF, 2023). In Nigeria, the problem is aggravated by the low tax-to-GDP ratio and low SME compliance even with such programs as the Strategic Revenue Growth Initiative (FIRS, 2023; World Bank, 2023).

The lack of tax knowledge and unfairness in the tax administration perception hold back voluntary tax compliance in the North Central region of Nigeria, where informality and political instability are the main features (Odusola, 2022; Nigeria Governors' Forum, 2023). It is important to understand such factors as tax knowledge and fairness to enhance compliance in this region. Tax compliance is a major issue in the developing countries such as Nigeria, where revenue is largely based on the oil industry, although there is the need to diversify into non-oil sources such as taxation on Small and Medium-Scale Enterprises (SMEs). Nigeria has more than 90 percent SMEs, and almost 48 percent GDP (SMEDAN & NBS, 2022). Nevertheless, the voluntary tax compliance of the SMEs is low particularly in the North Central zone which is a threat to the sustainability of the fiscal and economic growth (FIRS, 2023).

Past studies on the tax compliance in Nigeria (Roselyn et al 2021) Badaru, & Moses, 2025, Chamba, et al 2024, Ibrahim, et al 2024, Ejura, et al 2023, Musa, et al 2015 Jibrin, et al 2016) have primarily involved urban areas such as Lagos and Abuja, and have underserved areas such as North Central (Fagbemi et al., 2021; Research in these regions may not consider the regional peculiarities, which can include bad infrastructure and a prevailing informal sector (Nigeria Governors' Forum, 2023). Moreover, most studies consider SMEs as a homogenous group, which ignores differences in size, sector, and access to technology (Maseko, 2020; Akeem, 2023). Theoretical literature in Nigerian research is commonly based on Detering Theory, a theory that insists on the use of force, and more recent theories such as Slippery Slope Framework and Fiscal Exchange Theory that are based on trust and fairness have not been used extensively (Kirchler et al., 2018; Torgler, 2017). In conceptual terms, such constructs as tax morale and trust in government are usually poorly defined,

which can result in the validity problem (Onyeka and Eze, 2023).

On the methodological level, such a research is more likely to be based on simple statistics, which restrict the understanding of causality (Fagbemi et al., 2021). The presented research is intended to address these gaps with the help of the mixed-methods approach and offer a local and integrative framework of understanding voluntary tax compliance in North Central Nigeria. Through this, it will be able to influence policies that will take into account the unique problems experienced by SMEs in this region. The following focal research questions would be used to carry out this study based on the identified gaps in the empirical, theoretical, and practical research: To what extent has tax knowledge and awareness any effect on voluntary tax compliance among SMEs in the North Central zone of Nigeria? What is the impact of perceived fairness of tax system on voluntary tax compliance in the study area among SMEs?

The principal aim of the research paper is to investigate the factors that determine voluntary tax compliance among the Small and Medium-Scale Enterprises (SMEs) in the North Central region of Nigeria. These objectives are to: Determine the impact of tax knowledge and awareness on voluntary tax compliance of SMEs in the North Central zone and determine the impact of perceived fairness of tax system on voluntary tax compliance of SMEs.

The null hypotheses (H<sub>0</sub>) that will be tested in the study are in accordance with the corresponding research objectives:

- H<sub>01</sub>: The level of tax knowledge and awareness does not play a significant role in voluntary tax compliance among the SMEs within the North Central zone of Nigeria.
- H<sub>02</sub>: There is no significant difference in the perceived fairness of the tax system and voluntary tax compliance among the SMEs in the North Central zone.

## 2. Literature Review

### Voluntary Tax Compliance

The key of the efficient tax systems is voluntary tax compliance, where taxpayers voluntarily meet their

tax obligations without coercion (OECD, 2022). It is not done through forced compliance, which is based on the fear of punishment as well but it is done because the taxpayer believes that it is part of his civic responsibility, trusts the government and is convinced that the tax system is a legitimate system. The model, historically described by Deterrence Theory, which has mostly focused on the importance of enforcement and punishment, has its weaknesses especially in an environment that has poor audit capacity like most developing countries (Allingham and Sandmo, 1972).

Most recently, the Slippery Slope Framework (SSF) by Kirchler et al. (2008) has become more prominent, which is a combination of both enforcement and psychological factors. It puts forward that tax compliance depends on the confidence in the tax officials and the perceived effectiveness of enforcement, the greater the confidence, the less force is required. On the same note, the Fiscal Exchange Theory (Torgler, 2007) outlines the relationship between the taxpayers and the state in the sense that good service delivery by the state through taxes improves voluntary compliance. OECD (2022) also recommends the use of service-based, transparent tax regimes which eases the processes and promotes trust.

Voluntary tax compliance is frequently low among SMEs that constitute more than 96% of the numbers of businesses, and almost half of the GDP in developing nations like Nigeria because of their informality, insufficient knowledge of taxes, and distrust towards the government institutions (Maseko, 2020; Akinyomi and Okpala, 2021). Ease of tax related procedures, enhanced transparency and creation of trust have been found to drive more compliance among SMEs (Alm, 2019). Nevertheless, issues with high compliance costs and lack of enforcement remain, and the African Tax Administration Forum (ATAF, 2023) suggests such targeted solutions as simplified tax regimes and education oriented on SME.

The digital solutions such as TaxPro-Max in Nigeria provide the opportunity to enhance compliance, though these should be supplemented with sufficient education of taxpayers and investment in

infrastructure (Odusola, 2022). This research paper seeks to discuss voluntary tax compliance among SMEs, the issue revolving around how trust, transparency and administrative simplicity contributes to enhancing improved compliance practices. The framework used concurs with the behavioral theories and empirical research, as it provides a multidimensional approach to the understanding of voluntary tax compliance among SMEs.

### **Determinants of Voluntary Compliance with taxes.**

The voluntary payment of tax where the taxpayer actively reports income and is ready to pay taxes without any form of coercion is also fundamental to the effective and sustainable systems of public finance (Torgler, 2007; Kirchler et al., 2008). Voluntary compliance is more resilient and less expensive in contrast to the enforced compliance, relying on audit, penalties, and probability of being detected (Allingham and Sandmo, 1972), and eliminates the necessity of coercive actions and administrative pressures on revenue authorities (OECD, 2022). It represents the feeling of civic responsibility, confidence in the government and perceived justice and legitimacy of the tax system by the citizen. Voluntary compliance is specifically significant in developing nations where the tax administration system cannot usually conduct large-scale enforcement and the informal economy makes it hard to monitor (Joshi, Prichard, and Heady, 2014). The importance of understanding what triggers the voluntary compliance of taxpayers other than the fear of punishment is important both in theoretical understanding and in formulating policies.

Recent books have abandoned the old approaches of deterrence to behavioral and institutional models, which concentrate on non-economic forces of compliance. They are tax morale, perceptions of fairness, institutional trust, social norms and government performance (Feld and Frey, 2007; Alm and Torgler, 2011; Gangl et al., 2013). Nevertheless, such economic aspects as tax complexity, compliance costs, and awareness continue to be the core of compliance behavior explanation (Evans, 2003; Saad, 2014). It is a more expansive view that

recognizes the role of institutional as well as psychological factors in enhancing voluntary compliance of taxpayers.

### **Tax Knowledge and Awareness**

Tax knowledge means a knowledge of tax legislation, obligations, rights and procedures including knowledge of registration, filing timeframes, payment times, fines, waivers and accessible offers. According to the Knowledge-Attitude-Behavior (KAB) model, it attempts to explain that knowledge is a determinant of attitude and attitudes determine behavior (Ajzen, 1991). The increased tax literacy is correlated with the positive attitude toward taxes, as well as with the increased probability of compliance in the context of taxation.

As Saad (2014) points out, knowledge on taxes decreases fear and confusion, which is a way of avoiding unintentional non-compliance. According to Akinyomi and Okpala (2021), tax education programs have a significant effect on tax filing rates amongst SME in Nigeria. Equally, Maseko (2020) indicated that microenterprises in Zimbabwe responded to targets of tax awareness campaigns by enhancing compliance. Tax literacy in the digital age also encompasses the knowledge of e-filing systems, online documentation and online tools of tax support. Nonetheless, in the North Central region of Nigeria, a good number of SMEs are informal businesses and lack training and awareness of digital literacy, thus tax knowledge is extremely important in influencing voluntary compliance. This is important in raising the level of tax awareness in this region so as to increase the rate of compliance and to help create a more transparent tax system.

### **Repeated Fairness of the tax system.**

According to the Equity Theory (Adams, 1965), dissatisfaction and deviant behavior, including tax evasion, is a result of perceived inequities. This is further supported by Wenzel (2003), who claims that in case of favoritism, corruption, or unequal enforcement, the compliance rates become very low. Fagbemi et al. (2021) carried out a study in Nigeria and discovered that SMEs were irritated because of inequitable taxes treatment, especially where politically favored organizations appeared to enjoy

exemptions. Richardson (2006) also underlines that perceived fairness is one of the key psychological motivators of tax compliance all over the world. The social contract between the taxpayer and the state is broken when the taxpayer is perceived to be paying more than others or receiving less than what they give back, moral disengagement and opposition to payment of tax takes place. This brings out the essence of fairness and equity in promoting voluntary tax compliance.

### **Small and Medium Enterprises (SMEs)**

No single definition of the micro, small, and medium-sized enterprises (MSMEs) exist because the classification depends on the industry and country. The words are relative and they will be defined differently based on various factors like the level of economic development and industrial organization (Ajiboye & Dosunmu, 2007; Sanusi, 2016). Some of the important criteria applied to determine MSMEs are number of employees, financial strength, sales value, initial capital, and industry type (Carpenter, 2003). As It is emphasized by Inang and Ukpong (2017), capital investment, annual turnover, and the number of paid employees are the most widespread indicators. In Nigeria, the 1988 circular of the Central Bank characterized SMEs as organizations that had a turnover of not more than 500 million Nairas per year (Omosemi, 2019). The National Policy on MSMEs differentiates the enterprises in terms of employment, assets, and turnover, and makes formal operation of the enterprises by registering under the Companies and Allied Matters Act (CAMA).

SMEs also play an important role in the economy of Nigeria as they contribute 48 percent of GDP and about 50 percent of industrial employment and almost 90 percent of the manufacturing industry (Mekwunye, 2018). Nevertheless, the industry also has such drawbacks as a shortage of skilled workers, excessive business expenses, and numerous taxes (Oyelaran, 2020). Nevertheless, SMEs in Nigeria have obstacles to their development, such as unavailability of funding, high cost of credit, inconsistent policies, and bureaucracy (Alabi, 2017). According to the National Bureau of Statistics (NBS) 2019 report, SMEs can absorb 80 percent of the jobs,

increase income, and boost the GDP of Nigeria so that they become central economic growth powerhouses of the country (Agbeyi and Omosomi, 2019).

### Empirical Review

Akinyomi and Okpala (2024) examined the effects of tax awareness on the behavior of compliance among SMEs in Southwest Nigeria. The authors adopted a quantitative research design sampling of 300 SME owners in Lagos, Ogun and Oyo states. Structured questionnaires were used to collect the data which were then analyzed using multiple regression to find out the strength and significance of relationships between awareness and compliance. Their results showed that tax knowledge and voluntary compliance had a strong and statistically significant positive relationship. The more the respondents knew in relation to filing deadlines, tax deductions and penalties in case of non-compliance, the more propensity they had towards filing returns on time and correctly. The research further established that quite a number of SME operators considered paying taxes as an act of a citizen when they realized the developmental aspect of taxation. The research also suggested that the Federal Inland Revenue Service (FIRS) and State Boards of Internal Revenue (SBIRs) should expand their tax education programs, and through strategic collaboration with SME associations would provide outreach to that group via workshops and town halls. Nonetheless, the main weakness of their study is that it was conducted on urban, and relatively educated areas. The rural or semi-literate settings like most regions in North Central Nigeria were not taken into consideration which places a restriction on generalization of the findings.

Mohani et al. (2024) investigated the role of tax knowledge in influencing compliance of SMEs operating in three urban areas in a Malaysian setting. The research was conducted in cross-sectional design and 250 SME owners were surveyed by using structured questionnaires. The logistic regression analysis was used to establish the effect of various levels of tax knowledge on voluntary compliance behavior. The research study established that SMEs that had clear knowledge on tax registration

processes, filing systems and applicable penalties were highly compliant compared to those that did not. In addition, it was revealed that tax knowledge moderates the relationship between attitudes and compliance indicating that awareness is another factor that influences the perception of taxpayers towards their responsibility. The authors highlighted that these tax processes need simplification and suggested that multilingual and visual tax guides should be created specifically to the needs of small businesses. Although the research provided strong information, it also depends on digital platforms and the assumptions of high level of technological literacy of the population, which restricts its immediate generalizability to rural areas in Nigeria, where infrastructure issues and digital divide remain.

The study by Wenzel (2024) examines the role of perception of justice regarding the effect on tax compliance behaviour among Australian taxpayers. The study used survey data and experimental procedures to assess the influence of procedural fairness, distributive fairness and retributive justice on the formation of voluntary compliance. The researchers discovered that the beliefs on fairness played a big role in the voluntary compliance of tax payers. Particularly, taxpayers felt more willing to comply with their roles and were not coerced into complying with tax rules when they felt that tax authorities treated them with dignity and that their taxation treat all citizens equally. This conclusion stressed the fact that compliance is not only a matter of deterrence, but also a matter of psychological conformity to authority. Although the Australian context is very insightful, it is not relevant to other developing economies such as Nigeria because the governance systems and institutional trust are different.

The study by Fagbemi et al. (2024) is called Determinants of Tax Compliance Behavior in Nigeria, and its purpose is to examine the SMEs in urban regions. A quantitative type research design was employed to collect data, and used structured questionnaires were conducted on 250 SME operators in Lagos and Ibadan. In the research, regression analysis was utilized in investigating the effect of perceived fairness on compliance. The findings showed that most of the SME owners saw

the tax system as selective and retrogressive whereby small businesses were overburdened given the fact that big firms that were politically linked escaped taxes. The attitude resulted in resentment and a diminished motivation to comply. The authors observed that perceptions of fairness had stronger predictive power of tax compliance as compared to other predictors such as audit fear and fear of penalty. They have suggested that the tax authorities should ensure that there is equity in tax assessment, uniform enforcement and greater transparency in order to have more trust in the taxpayer. Nevertheless, the study was confined to the more advanced parts of Southern Nigeria and did not investigate the perceptions of fairness in the less formal economies as well as in the rural SME groups in the North.

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### 3. Methodology

This research design is descriptive survey research design which is best suited when one is required to collect and analyze data on the nature of a population, their behavior, opinions or perception without controlling any of the variables. The target population will be a total of 42,700 registered Small and Medium Enterprises (SMEs) in the North Central part of Nigeria as of December 31, 2024 in six states: Kwara, Kogi, Benue, Niger, Nasarawa, and Plateau. Each state has different numbers of registered SMEs, with Kwara having 7,200, Kogi having 5,800, Benue having 6,500, Niger having 8,000, Nasarawa having 6,000, and Plateau having 9,200, and the total number of registered SMEs is 42,700 based on the data of Small and Medium Enterprises Development Agency of Nigeria (SMEDAN). Considering the points discussed, the Cairo School is considered quite uniform in its overall curriculum. With the above

discussed it can be said that the Cairo School is rather homogeneous in its general curriculum.

In order to calculate the sample size, Taro Yamane formula of finite populations (1967) will be used in the research based studying a sample of 396 SMEs with a significance level of 5 percent. This sample was then representative of the six states proportionately taking into consideration a 10 percent margin to compensate, non-responses. Since the number of SMEs in each state was not even, stratified proportionate sampling method was adopted.

To collect data, Mwangi and Wanjiru (2019) created a structured questionnaire adapted to the study, and it was a closed-ended instrument. The questionnaire was split into two parts; the first one was dedicated to gathering personal information (gender, age, education, and working experience), and the second one was devoted to the financial management and distress alleviation strategies.

In order to make sure that the questionnaire was reliable, Cronbachs Alpha was used to test the questionnaire and the results were good internal consistency of between 0.72 and 0.80. Also, the instrument validity has been tested by expert review coupled with a pilot study and this assisted in the refinement of the questions and their accuracy and relevance.

Simple percentages were used to analyse the demographic data, Ordinary Least Squares (OLS) regression was used to test the hypotheses and investigate the relationship between the dependent and independent variables. Then, the multiple regression analysis was used to determine the strength of the correlation between financial distress mitigation (the dependent variable) and budgeting practices, cash flow management, tax compliance, and risk management (the independent variables). The study's analytical model is represented as follows:

$$TPCit = \beta_0 + \beta_1TKAit + \beta_2PFTSit + Uit$$

Where:

TPC represents Tax Payment Compliance

TKA stands for Tax Knowledge and Awareness

By using this approach, the study aims to provide valuable insights into the factors influencing tax compliance among SMEs in Nigeria's North Central region, offering evidence that can inform both policy and practice

#### 4. Data Presentation and Analysis

Data analysis is the process of inspecting, cleaning, transforming, and modeling data to discover useful information, draw conclusions, and support decision-making. It involves techniques like statistical analysis, data visualization, and pattern recognition to turn raw data into actionable insights

Descriptive Statistics of Tax Knowledge and Awareness (TKA)					
	N	Min	Max	Mean	Std. Deviation
I am aware of the different types of taxes applicable to my business	275	1	5	3.00	.615
I know the deadlines for submitting tax returns and payments.	275	1	5	3.00	.615
I have received adequate information or training on tax compliance.	275	1	5	3.00	.615
I understand the procedures for tax registration and filing.	275	1	5	3.00	.615
I know where to obtain assistance or clarification on tax issues.	275	1	5	3.00	.615
<b>Overall Mean</b>				3.00	

Source: SPSS 23 Outputs

All the statements contained in the table are rated on a scale of 1 to 5 with 1 representing strongly disagree and 5 representing strongly agree. The overall mean of the five statements is 3.00 and this implies that, overall, the respondents are neutral with regard to their knowledge of tax related issues. They do not strongly agree or disagree with the statements indicating that their awareness is average or balanced to some extent. Each statement has a standard deviation of approximately 0.615, indicating that the respondents varied in the way they answered. Nevertheless, the majority of responses appear to be

clustered between the middle of the scale (nearing neutral or slightly agreeing) and not distributed across the scales. The average Tax Knowledge and Awareness mean is 3.00, and the standard deviation is 0.8636, indicating that the respondents are generally very average knowledge and awareness of the taxes in respect to their businesses, yet can be improved. Overall, the data allows concluding that the level of tax knowledge of the SME operators in North Central Nigeria is average, with some dispersion in the awareness of its various dimensions of tax compliance.

Descriptive Statistics of Perceived Fairness of the Tax System (PFTS)					
	N	Min	Max	Mean	Std. Deviation
The tax system treats all businesses equally and fairly.	275	1	5	4.1	1.135
Tax rates are reasonable for businesses like mine.	275	1	5	3.93	1.233
Penalties for non-compliance are fair and proportionate.	275	1	5	4.1	1
Tax policies are applied consistently across sectors.	275	1	5	3.82	1.287
I believe the tax burden is distributed equitably	275	1	5	3.62	1.3
<b>Overall Mean</b>				<b>3.914</b>	<b>1.191</b>

Source: SPSS 23 Outputs

A mean score of 4.1 was obtained in the first statement that the tax system considers all businesses equally and fairly. This indicates that respondents tend to agree that the tax system is fair, albeit, with some differences as indicated with standard deviation of 1.135. In the statement which says that tax rates are reasonable in business such as mine, the mean score is 3.93 implying that there is a slightly positive attitude, although the standard deviation of 1.233 implies that there is some variation in the view of respondents. Penalties for non-compliance are fair and proportionate also scored an average of 4.1 implying that the respondents are content to receive the penalties that are fairly administered with a relatively small variation (standard deviation of 1.0). On the statement that tax policies are applied consistently across sectors, the mean of 3.82 is homogenous, with greater variation (standard deviation of 1.287) so an agreement, but not all. Lastly, in terms of I believe the tax burden is shared

equally, the average score is 3.62, indicating there are more ambivalent view on whether the tax burden is fair, with the standard deviation of 1.3, which indicates that the views are widely distributed. The average scoring of Perceived Fairness of the Tax System stands at 3.914, with a standard deviation of 1.191 which represents the existence of general perception of fairness in the tax system according to the respondents but with some differences among the respondents. Overall, the evidence supports the idea that the majority of the SME operators in North Central Nigeria consider the tax system as quite fair, at least in terms of equal treatment and punishment. There is, however, a difference in their interpretation of tax rates, evenness of the policy and fairly sharing the tax burden.

Descriptive Statistics of the overall Study. The table of Descriptive Statistics provides helpful information about the different factors that do affect the tax compliance as was observed in the study.

Descriptive Statistics					
Variables	Obs	Min	Max	Mean	Std Deviation
TPC	275	3.00	5.00	4.000	.3421
TKA	275	2.71	5.00	5.210	.43653
PFTS	275	2.60	5.00	5.100	.50667

Source: SPSS 23 Outputs

Descriptive statistics is basically the summary and the description of a clear picture of the key features of a data set. It also allows us to view the important features mentioned about the data by examining

properties such as the minimum, maximum, mean and standard deviation, which indicate us about the spread and range, the average and the spread of the values.

Indicatively, in the data you posted, the variable TPC that assesses the Tax Knowledge and Awareness is between 3.00 and 5.00. The mean (average) value is 4.00, and the standard deviation is 0.3421, indicating that, the majority of the individuals are moderately knowledgeable about tax with a few differences.

The mean of the variable TKA which is also dependent on tax knowledge is 5.21 with a standard

deviation of 0.43653. This would indicate that the average level of tax understanding is slightly more, but there is some dispersion in the perceptions of understanding of taxes among the people.

Lastly, in the case of PFTS that is perceived Fairness of the Tax System, the mean stands at 5.10, and the standard deviation is 0.50667. This shows that the tax system is relatively viewed as fair by people, although it is more widely distributed, as seen in the increased standard deviation.

### Multi-collinearity Test Results

<b>Multi-collinearity Test Results</b>		
<b>VARIABLES</b>	<b>VIF</b>	<b>1/VIF</b>
TPC	1.440	<b>.763</b>
TKA	1.240	.706
PFTS	1.455	.587
Durbin Watson Statistics		<b>1.654</b>

**Source: SPSS 23 Outputs**

The figures you have provided are of a test of multicollinearity, which determines whether any of the independent variables in your regression equation are highly correlated with each other. Once it occurs, it may distort the precision of the model outcomes and it will be difficult to rely on the coefficients obtained.

The primary method of multicollinearity testing is observing a parameter known as Variance Inflation Factor (VIF). When the VIF is actually large (in most cases, more than 10), then it indicates that the variable is too correlated with the other variables in the model, which is a problem. Conversely, a VIF of 1 or nearer indicates that there is no actual relationship with the rest of the variables which is what you want to observe.

In examining your statistics, the TPC ( Tax Knowledge and Awareness) has a VIF of 1.440. This is far less than the mark at which multicollinearity is

an issue of concern, and thus there is no indication that there exists significant issues with this variable. On the same note, the VIF of TKA (Tax Knowledge and Awareness) is 1.240 and hence very low multicollinearity. The VIF of PFTS (Perceived Fairness of the Tax System) is still 1.455 which once again shows no high levels of multicollinearity. Also, the 1/VIF values are very large (more than 0.5) which proves the fact that there is no extreme multicollinearity in action.

Next is the Durbin-Watson statistic that tests the existence of autocorrelation of the residuals (error) of your model. Preferably, you would like this value to be near to 2. A value below 1 is an indication of positive autocorrelation and a value above 3 is an indication of negative autocorrelation. Your value is 1.654 which is good and this implies that there is no major autocorrelation in your model.

**Correlation Matrix of variables**

Variables	Coefficients	TPC	TKA
TPC	Correlation Coefficient	1.000	
	Sig. (2-tailed)	.000	
TKA	Correlation Coefficient	.658**	1.000
	Sig. (2-tailed)	.000	.000
	Sig. (2-tailed)	.000	.000
GASD	Correlation Coefficient	.524**	.554**
	Sig. (2-tailed)	.000	.000

Source: SPSS 23 Outputs

The results you’ve shared are from a correlation matrix, which helps us understand the relationships between the variables. In a correlation matrix, the values show how strongly two variables are related, and the significance values (p-values) tell us if these correlations are statistically meaningful.

Looking at the data you provided, the TPC (Tax Knowledge and Awareness) and TKA (Tax Knowledge and Awareness) have a correlation coefficient of 0.658, which is fairly strong and positive. This means that as one increases, the other tends to increase as well. The p-value for this correlation is 0.000, which is highly significant, suggesting this relationship is not due to random chance.

Next, the correlation between TPC and GASD (General Awareness of Tax System) is 0.524, which indicates a moderate positive relationship. The p-value is 0.000, which tells us this relationship is also

statistically significant. The correlation between TKA and GASD is 0.554, showing a similar moderate positive relationship. Again, the p-value is 0.000, so this correlation is statistically significant as well.

The correlations between all the variables in your matrix are significant, and the strength of the relationships varies from moderate to strong, with TPC and TKA showing the strongest connection. This suggests that as people's knowledge and awareness of tax issues increase, they tend to have a better general understanding of the tax system as well.

**Regression Analysis**

This section presents the regression results of the dependent variables and Independent Variables. The regression results obtained from the model of the study which was

$$TPCit = \beta_0 + \beta_1TKAit + \beta_2PFTS it + U_{it},$$

**Regression Results of the Study**

Variables	Coefficients	T-Values	P-Values
Constants	1.79	6.138	.000
TKA	.351	3.643	.003
PFTS	.451	8.635	.000
Adj. R <sup>2</sup>			0.577
F-Stat.			50.412
F- Sig			0.000

Source: SPSS 23 Outputs

The regression results you have provided will give you a better insight into the relationship between the independent variables and the dependent variable along with the level of fit of the model to the data.

The intercept is equal to 1.79 with t-value equal to 6.138 and p-value equal to 0.000. This implies that the value of the dependent variable would have been 1.79 even when all the independent variables are equal to zero. The p-value is small, which shows that this outcome is statistically significant, or, in other words, the intercept means something.

In the case of the independent variables, the coefficient of TKA (Tax Knowledge and Awareness) is 0.351. It implies that the dependent variable will rise by 0.351 units with a one-unit increase in TKA under other things being held constant. The t-value 3.643 and 0.003 p-value indicates that this relationship is statistically significant, or considerably, there is a strong relationship between TKA and the dependent variable.

The coefficient of PFTS (Perceived Fairness of the Tax System) is 0.451 so that one unit of PFTS would lead to an increase in the dependent variable based on the coefficient of 0.451 units. This relationship is very significant as the t-value is 8.635 and the p-value is 0.000 showing that there is a strong correlation between PFTS and the dependent variable. The value of the Adjusted R-squared, 0.577, indicates that the independent variables (TKA and PFTS) accounted for about 57.7 percent of the variation in the dependent variable. This is an indication of a good degree of explanatory power of the model.

The F-statistic is 50.412, p-value 0.000 and it shows that the entire regression model is statistically significant. This implies that the independent variables in combination significantly impact on the dependent variable. Regression model shows that the independent variables have high relationships with the dependent variable and the findings are statistically significant. The model provides an adequate amount of the variance and goes on to indicate that associations are significant and not mere by chance.

## Test of Hypotheses

To evaluate the hypotheses that you have given on the basis of the regression findings, we must evaluate the statistical significance of the independent variables Tax Knowledge and Awareness (TKA) and Perceived Fairness of the Tax System (PFTS) against the dependent variable which as you stated is voluntary tax compliance among SMEs in the North Central zone of Nigeria.

H 0 1: There is no significant effect of tax knowledge and awareness on voluntary tax compliance among SMEs in North Central zone of Nigeria.

Based on the results of the regression, TKA has a coefficient of 0.351, t-value of 3.643 and a p-value of 0.003. The p-value is lower than the standard level value of significance of 0.05, which means that TKA makes a statistically significant difference on the dependent variable (voluntary tax compliance). Thus, we do not reject the null hypothesis H 0 1 and we accept the alternative hypothesis H 1 1. This implies that tax knowledge and awareness does play a significant role in voluntary tax compliance in the SMEs in North Central zone of Nigeria.

H 0 2: There is no significant difference in perceived fairness of the tax system with regard to voluntary tax compliance among the SMEs in the North Central zone.

In case of PFTS, the coefficient is 0.451 with t-value of 8.635 and p-value of 0.000. Once again, the p-value is lower than 0.05 which means that PFTS statistically significantly influences the dependent variable (voluntary tax compliance). This causes us to reject the null hypothesis H 0 2 and accept the alternative one H 1 2. Therefore, the perceived fairness of the tax system is relevant to voluntary compliance with tax among SMEs in North Central zone of Nigeria in a significant way.

## Discussion of findings

The regression results show that Tax Knowledge and Awareness (TKA) and Perceived Fairness of the Tax System (PFTS) have significant effect on voluntary

tax compliance of SMEs in North Central zone of Nigeria. The results confirm that both null hypotheses will be rejected:  $H_0 1$  (No significant impact of tax knowledge and awareness) and  $H_0 2$  (Perceived fairness of the tax system does not have a significant impact on compliance).

The outcomes demonstrate that TKA has a statistically significant impact on the voluntary tax compliance (coefficient = 0.351, t-value = 3.643, p-value = 0.003). This implies that the more informed or knowledgeable the SMEs are, the more they are likely to comply with the tax regulations. The findings are consistent with a literature that states the significance of tax knowledge in promoting tax compliance. Liu et al. (2019) opine that when people and businesses are better aware of the tax obligations, tax benefits, then they tend to adhere to tax laws. In the Nigerian case, Okoye and Oparaocha (2015) also discover that better tax education programs dramatically increase the compliance rates among SMEs, as they are able to know the tax system and the benefits it provides.

Nevertheless, this observation is not consistent with others, including Slemrod et al. (2019) who posit that tax knowledge might not be effective alone to promote voluntary compliance. They claim that despite the growth of knowledge, other elements like perceived fairness and trust, in the tax administration, can be even more relevant. This argument is also upheld by James and Alley (2004) who discovered that tax knowledge is not the only predictor of compliance because in most cases, emotional and psychological variables tend to shape the attitude of taxpayers towards tax payment.

Regression values indicate that there exists a significant positive effect of PFTS on voluntary tax compliance (coefficient = 0.451, t-value = 8.635, p-value = 0.000). It implies that the more the SMEs feel that the tax system is fair the more voluntarily they comply. This concurs with research that has been carried out in a vast amount. An example given by Torgler (2003), is that perceived fairness plays a significant role in defining the behavior of compliance in tax, as he says that when the taxpayers feel that the tax system is just and fair, then they are more likely to comply. Wenzel (2005) also adds

more weight to this by observing that the perception of fairness may also create trust in the government and tax authorities, and this may encourage taxpayers to pay their taxes.

This observation can also be observed in respect to Gilligan and Richardson (2005) who opine that taxpayers will tend to comply when they feel that the taxes are being collected and utilized justly by the government. On the same note, Bird and Zolt (2008) emphasize the issue of equity in encouraging a culture of tax compliance particularly in developing economies, whereby perception of corruption or inefficiency might scare taxpayers out of their duties. Conversely, Andreoni et al. (1998) warn that fairness perceptions may not necessarily increase compliance especially when the taxpayers believe that the tax system is unfairly favoring them. Where the perception of fairness is attained, it might not be as beneficial in the areas where people lack trust in the government or perceive that the taxation is being misused or abused. With regards to Nigeria, Alm and Torgler (2006) assert that though fairness is considered a key factor, corruption, and inefficient governmental services as well as lack of transparency can erode the positive relationship between fairness and tax compliance.

## 5. Conclusion and Recommendations

This research work supports the importance of Tax Knowledge and Awareness (TKA) and Perceived Fairness of the Tax System (PFTS) in the discussion of voluntary tax compliance among SMEs in the North Central region of Nigeria. These findings are agreeable with the efforts of numerous researchers who have focused on the influence of education and equity in promoting tax compliances. Nevertheless, there is evidence to show that these factors are not exclusive and therefore, other social, economic and psychological factors also need to be taken into consideration when explaining the tax compliance behaviour. The findings suggest that voluntary compliance level among SMEs can be improved by enhancing the level of tax education, as well as, the perceived fairness of the tax system, but one should also focus on the general issues, such as trust in the government and tax administration.

According to the results of this research, it is possible to offer the following two recommendations that will help to increase voluntary tax compliance among the SMEs in the North Central zone of Nigeria:

- i. Because Tax Knowledge and Awareness (TKA) was also observed to have a significant impact on voluntary tax compliance, it can be advised that the government agencies and tax authorities should invest more in tax education and awareness programs that are specifically designed to target SMEs. Such programs are supposed to enhance the knowledge of SMEs about their tax requirements, benefits, and the value of taxes in development of the country. The information on tax filing, tax incentives, and the repercussions of non-compliance can be provided by means of workshops, seminars, and online training platforms.
- ii. The authors determined that Perceived Fairness of the Tax System (PFTS) is a major determinant of voluntary tax compliance, such that the more the SMEs believe that the tax system is fair and just, the higher the chances that they will comply. As a way of enhancing trust and perceptions of fairness, it is advisable that the Nigerian government and tax authorities strive to bring about increased transparency in the tax administration. This might include the provision of better communication on how the tax collections are allocated, minimization of corruption in the tax system and creating fair tax rates to SMEs.

## References

- Abdul, K, Ajibade, F., I., P, & Moses.D.,K.,M (2025) Effect of Fuel Subsidy Removal on the Economy of Nigeria. *International Journal of Research and Innovation in Social Science* 9
- AS Jibrin, MU Salisu, & DM Ibrahim, (2015) Small Scale Business as a Key Factor to National Economic Growth in Nigeria *Sch. Bull* 1 (10), 280-284
- Badaru,I, M, & Moses,K, M (2025) Effect of marketing strategies on the performance of small and medium scale enterprises in Kano State. *ISA Journal of Business, Economics and Management (ISAJBEM)* 2 (4), 316-326
- Chamba, D , Moses,K.,M & Ubolo.O.,G, (2024) Dynamic Effect of Board Characteristics on Corporate Disclosures in Annual Report of Listed Industrial Goods Firms in Nigeria. *International Journal of Public Administration and Management Research* 10
- Ejura, B.,E, Musa, S., J, Karim,I., B, Mubarak, M.,S, & Ahmed Z,(2023) Impact Of Unsystematic Risk On Financial Performance Of Quoted Nigeria Insurance Firms. *Baltic Journal of Law & Politics* 16 (3), 2908-2918
- Ejura, S., B, Musa, S., J, Karim, M., I,Victoria, M, & Mubarak, A., D., L, (2023). Moderating Impact of Firm Size on Board Structure and Financial Performance of Quoted Insurance Companies in Nigeria. *Journal of Data Acquisition and Processing* 38, 2534-2545
- Ejura, S.,B., Musa, S., J., Karim, M.,I., Victoria, M., & Mubarak, A., D., L. (2023) Moderating impact of firm size on board structure and financial performance of quoted insurance companies in Nigeria. *Journal of Data Acquisition and Processing* 38 (3), 2534
- Haruna, R., A, Awogbade,A, & Ibrahim, K., M, (2021). Forensic accounting techniques and fraud prevention in listed insurance companies in Nigeria. *Journal of Forensic Accounting & Fraud Investigation* 6 (1), 98-140
- Hussain, H., T, Musa, B., S, & Musa, J., M, (2024) Tax revenue and economic growth in Nigeria. *ajap-amamihe Journal of Applied Philosophy* 22 (3)
- Tsegba, I, Musa, S, & Ibe, A, (2021) Impact of Tax Incentives on Investment Performance of Listed Manufacturing Companies in Nigeria. *Journal of Accounting and Management Sciences* 1 (1), 34-56
- Ibrahim, K., M. & Musa, S. J. (2022). Agency theory and corporate governance: A comparative

- study of Board diversity and financial performance in Nigeria. *Journal of Positive School Psychology*, 10364–10372-10364–10372.
- Ibrahim, K., M. & Musa, S. J. (2022). Agency theory and corporate governance: A comparative study of Board diversity and financial performance in Nigeria. *Journal of Positive School Psychology*, 10364–10372-10364–10372.
- Ibrahim, K., M. & Musa, S. J. (2022). Effect of corporate governance on risk management of selected deposit money banks in Nigeria. *International Journal of Health Sciences*, 6 (S6), 6193–6203.
- Ibrahim, K., M. & Musa, S. J. (2022). Effect of leverage on profitability of information and communication technology companies listed on the Nigeria stock exchange. *Journal of positive School Psychology*, 10386–10393-10386–10393.
- Ibrahim, K., M. & Musa, S. J. (2022). Moderating role of board expertise on the effect of working capital management on profitability of food and beverages companies quoted in Nigeria. *Journal of Positive School Psychology*, 10373–10385-10373–10385
- Ibrahim, K., M., Success, B., E., & Musa, S. J. (2022). Moderating effect of audit quality on value relevance of accounting information of listed firms in Nigeria. *Neuro Quantology* / 20 (7), 2639-2648
- Ibrahim, K., M., Abdullahi, S., R., & Friday, A (2022) Information content of annual financial reports and equities performance in Nigerian financial firms. *Journal of Accounting and Management Sciences* 3 (1), 159-17
- Ibrahim, K., M., John, O., O., & Okeh, P., E., (2024) Impact Of Artificial Intelligence On Optimising Revenue Management In Nigeria's Public Sector. ANUK College of Private Sector Accounting Journal 1 (1), 96-108
- Jibrin, M., S., Success, B, E, & Ibrahim, K., M., (2022). Investigating the entrepreneurial action of small scale enterprises for sustainable development in Nigeria. *International Journal of Health Sciences*, 6 (s4), 11154–11168.
- John, O., O. Ibrahim, K., M. & Okeh, E., P., (2024). Analyzing the complexities of transfer pricing regulations and their impacts on multinational corporations in Nigeria. *ANUK College of Private Sector Accounting Journal* 1 (2), 79-92
- Ifurueze, M, Jubrin, M., S, & Bernard, O., A, (2012) Fiscal Federalism and the Issue of Resource Control in Nigeria: The Challenges, Options & Strategies. *European Journal of Economics, Finance and Administrative Sciences* 51, 96-109
- Moses, I., K, Jibrin, S., M, Success, & B., E, (2022). Moderating effect of audit quality on value relevance of accounting information of listed firms in Nigeria. *Neuro Quantology* 20 (7), 2639-2648
- Moses, I., K., Jibrin, S., M., & Success, B., E., (2022) Investigating the entrepreneurial action of small-scale enterprises for sustainable development in Nigeria. *International Journal of Health Sciences*, 6 (s4), 11154–1116
- Moses, K., M., Haruna, R., A., & Udanwojo, A., A. (2018) Effect of corporate governance mechanisms on financial performance of listed foods and beverages companies in Nigeria. *Journal of Economics and Finance* 2 (2), 67-79
- Moses, K., I, Haruna, R., A, & Udanwojo, A., A, (2018) effect of corporate governance mechanisms on financial performance of listed foods and beverages companies in Nigeria. *Journal of Economics And Finance* 2 (2), 67-79
- Jibrin, M., S, Meshack, I., S, & Ejura, S., B, (2013) The Impact of Monetary and Fiscal Policies on the Naira Exchange Rate Between 1990 And 2009. *Asian economic and financial review* 3 (9), 1214
- Jibrin, M., S, Nkechi, O., T, & Ejura B., S, (2016) Auditing Procedures and Process in the Public Sector *Financial Risk and Management Reviews* 2 (2), 43-50

- Roselyn A., H, AS Akwu-Odo, S.,A.,S, Eni-Itan T,F, & Karimu M., I. (2021) Forensic Accounting Techniques And Fraudulent Practices In Nigerian Public Sector. *Journal of Forensic Accounting & Fraud Investigation (JFAFI)* 6 (1), 1-22
- Musa, S.,J, & Moses, K., M,(2022) Investigating the entrepreneurial action of small scale enterprises for sustainable development in Nigeria. *International journal of health sciences* 6 (S4), 11154-11168
- Success, B., E., Musa, S. J & Ibrahim, K., M., (2022) Effect of corporate governance on risk management of selected deposit money banks in Nigeria. *International Journal of Health Sciences* 6 (S6), 6193-6203
- Ibrahim, K., M., Success, B., E., & Musa, S. J (2022) Moderating Effect of Audit Quality on Value Relevance of Accounting Information of Listed Firms in Nigeria. *Journal of Accounting* 11, 154
- SJ Musa, SM Ifurueze, & BE Success (2013). The impact of monetary and fiscal policies on the Nigerian exchange rate between 1990 and 2009. *Asian economic and financial review* 3 (9)
- SO Oginni, J Gambo, KM Ibrahim (2014) Nexus of Gender Pay Gap and Economic Growth: evidence from Nigeria. *International Journal of Management Sciences and Business Research* 3 (4), 7-9
- Yunusa, A, & Musa, J., S, (2024) Board Independence Board Size Gender Diversity And Financial Performance Of Listed Insurance Firms In Nigeria. *IGWEBUIKE: African Journal of Arts and Humanities* 10 (2)