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# Tax Compliance (Active Tax Payers) and Non-Oil Tax Revenue in Nigeria: Exposition of Fiscal Exchange Theory and Expectation Proposition

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***Abstract***
*The paper investigated the tax compliance (active tax payers) and non oil revenue in Nigeria in relation to fiscal exchange theory and expectation proposition. The study adopted ex post facto research design; secondary data for nineteen years (2003 - 2022) were collected from various issues of the Federal Inland Revenue Services (FIRS) statistical bulletin and annual reports. Tax compliances as regressand variable was measured with number of actual annual total non oil tax revenue in Nigeria and Tax compliances among active tax payers of company income tax (CIT), Petroleum profit tax (PPT), Capital gain tax (CGT), Value Added Tax (VAT) and Personal Income Tax (PIT) as regressors. The data was analyzed using multiple regression analysis to establish the relationship between the dependent and independent variables. The findings revealed that tax compliance have significant effect on boosting tax revenue generation and that tax default can cause significant variation in government revenue. The variable in the model is significant at the 5% critical level and the regression coefficient reveals that 72.8% of the total variation in revenue is accounted for by tax compliance with other variables in the stochastic term accounting for the remaining 27.2%. Specifically, Tax Compliance (Active Tax Payers) is significantly and positively related to Active Tax Payers on Value Added Tax (ATVAT) (1.827925), Active Tax Payers on Company Income Tax (ATCIT) (2.84599) and Active Tax Payers on Petroleum Profit Tax (ATPPT) (2.286043), while Tax Compliance (Active Tax Payers) is negatively and insignificantly correlated with Active Tax Payers on Personal Income Tax (ATPIT)( -0.236908) Active Tax Payers on Capital Gain Tax (ATCGT)( -0.236908). It is recommended that Federal Inland Revenue Service should open more offices across the federation to increase the ease of paying taxes, set performance targets for managers of tax offices and sanction for non-performance, improve on leadership accountability at all levels of government and ensure that tax revenue is transparently utilized so that taxpayers can see the benefits accruable from tax payment and take ownership of public infrastructures.*

***Keywords***: *Tax compliance, active tax payers, non oil tax revenue, fiscal exchange theory and expectation proposition.*

***JEL Codes***: *H29, E62, C12, H20, H22, C52.*

## 1.0 Introduction

Taxation is an important fiscal policy instrument at the disposal of governments to mobilize revenue and promote economic growth and development. The tax system is an avenue for government to use in collecting additional revenue needed in discharging its pressing obligations. A tax system is one of the most effective means of mobilizing a nation's internal resources and it lends itself to creating an enabling environment to promote economic growth.

There are certain objectives which the tax system is expected to achieve. These objectives include: Promoting fiscal responsibility and accountability-One of the primary objectives of the National Tax Policy is to create a tax system which ensures that the government transparently and judiciously accounts for the revenue it generates through taxes by investing in the provision of infrastructures, public goods and services. Where this is in place, Nigerians would have a tax system that they can fully relate to and which is a tool for national development. Facilitating economic growth and development: The overriding objective of the Nigerian tax system should be to achieve economic growth and development. As such, the system should allow for stimulation of the economy and not stifle growth, as it is only through sustained economic growth that the potential ability to offer improvements in the well-being of Nigerians will arise. The tax system should therefore not discourage investment and the propensity to save.

Taxes should not be a burden, but should be applied proactively with other policy measures to stimulate economic growth and development. To provide the government with stable resources for the provision of public goods and services: For Nigeria to pursue an active development agenda and carry out the basic functions of government, its tax system should generate sufficient resources for government to provide basic public goods and services (e.g. education, healthcare, infrastructure, security etc.). It is therefore a primary objective of taxation to provide the government with resources that it shall invest in judicious expenditure that will ultimately improve the well-being of all Nigerians.

From the standpoint of taxpayers, the supply of public goods and services is viewed as a contractual arrangement between them and the government, because taxpayers' interest is in what they receive from the government in exchange for what they pay in taxes (Fjeldstad *et al.*, 2012). This idea can also be considered to make tax payments conditional on the government's performance in providing essential goods and services. Taxpayers consider their tax payments as exchanging purchasing power for government products and services in the market. According to Fjeldstad *et al*. (2012), the presence of favorable benefits is likely to increase the likelihood of voluntary compliance by taxpayers, resulting in a positive impact on tax revenue, because it entails citizens and businesses receiving goods and services from the government in exchange for the government extracting money from them. The taxpayers' view of the government determines the validity of the social contract between them and the government. Citizens and businesses will be more eager to be tax compliant if they have a favourable opinion of the government's utilization of tax receipts.

## 1.1 Statement of the Problem

Compliance to tax laws typically means the true reporting of the taxable income, appropriate computation of the tax payable, filling of the returns and timely payment of tax liability (Franzoni, 1999). Key challenges confronting the Nigeria tax system including: low tax to GDP ratio; fragmented database of taxpayers and weak structure for exchange of information; multiplicity of taxes and revenue agencies; poor accountability for tax revenue; use of aggressive and unorthodox methods for tax collection; failure by tax authorities to honour refund obligations to taxpayers; the non-regular review of tax legislation, which has led to obsolete laws, that do not reflect and current economic realities

If tax payers feel that their interests are served by the government, their willingness to pay tax may grow. In developing countries such as Nigeria characterized by government insensitivity to the plight and aspirations of the citizens, fiscal recklessness, corruption, low standard of living and infrastructural decay, the willingness to pay tax is at the lowest ebb. Taxpayers feel they have not benefited from the taxes paid. The problem of increasing taxpayer compliance is a classic problem that is as old as the tax problem itself. No one volunteered to pay taxes. For this reason, the research should be geared towards investigating the impact of tax compliance by way of number of active tax payers of tax components on the non oil tax revenue in Nigeria.

## 1.2 Research Questions

The following research questions will be answered in this study**:**

i. What is the causal effect of Active Tax Payers on Value Added Tax on actual annual Total Tax Revenue in Nigeria?
ii. How does Active Tax Payers on Company Income Tax affect actual annual Total Tax Revenue in Nigeria?
iii. What is the effect of Active Tax Payers on Petroleum Profit Tax on actual annual Total Tax Revenue in Nigeria?
iv. What is the influence of Active Tax Payers on Personal Income Tax on actual annual Total Tax Revenue in Nigeria?
v. What is the influence of Active Tax Payers on Capital Gain Tax on actual annual Total Tax Revenue in Nigeria?

## 1.3 Objectives of the Study

The broad objective of the study is to investigate the effect of revenue and budget risk factors on actual annual Total Tax Revenue in Nigeria, while the specific objectives are to:

i. investigate the effect of Active Tax Payers on Value Added Tax on actual annual Total Tax Revenue in Nigeria;
ii. examine the relationship between Active Tax Payers on Company Income Tax and actual annual Total Tax Revenue in Nigeria;
iii. evaluate the effect of Active Tax Payers on Petroleum Profit Tax on actual annual Total Tax Revenue in Nigeria; and
iv. assess the influence of Active Tax Payers on Personal Income Tax on actual annual Total Tax Revenue in Nigeria.
v. explore the influence of Active Tax Payers on Capital Gain Tax on actual annual Total Tax Revenue in Nigeria.

## 1.4 Research Hypotheses

This study is designed to test the following null hypotheses:

$H_{0\,1}$ - Active Tax Payers on Value Added Tax has no significant effect on actual annual Total Tax Revenue in Nigeria;
$H_{0\,2}$ - Active Tax Payers on Company Income Tax has no significant relationship with actual annual Total Tax Revenue in Nigeria;
$H_{0\,3}$ - Active Tax Payers on Petroleum Profit Tax has no significant effect on actual annual Total Tax Revenue in Nigeria;
$H_{0\,4}$ - Active Tax Payers on Personal Income Tax has no significant influence on actual annual Total Tax Revenue in Nigeria.
$H_{0\,5}$ - Active Tax Payers on Capital Gain Tax has no significant influence on actual annual Total Tax Revenue in Nigeria.

## 2.0 Conceptual Review

Tax compliance is defined as the administrative rules of loading and paying tax effectively as at when due (Murphy, 2008). Tax compliance is also defined as the ability of persons to act of filing their tax return, declaring all the necessary taxable income accurately and disbursing all the payable taxes within the stipulated period of time without waiting for follow-up from the tax authority (Jackson & Milliron, 2002). The level of compliance has to do with reporting the actual amount of tax to be reminted with the requirement and the procedural rules and regulation guiding the tax administration system. This compliance has to do with the filing of tax return in time, reporting all the income and claiming the right amount of deductions are made at the right specific time.

Measurement of tax compliance can be seen from several aspects: (i) taxpayer compliance in registering to obtain a Taxpayer Identification Number, (ii) taxpayer compliance in calculation, payment, and reporting of tax payable, and (iii) taxpayer compliance audited must fulfill the call to attend the Examination according to the specified time (Niway & Wondwossen, 2017).

Tax compliance is how taxpayers comply with tax laws. Tax compliance is the level of taxpayer compliance (or failure to comply) with state tax rules (Kirchler *et al.*, 2008). The process of tax compliance includes declaring income, reporting taxes, and paying taxes on time. Two theories underlie tax compliance, namely economic and non-economic based theories. The economic-based theory is related to costs and benefits when carrying out an action which in this case is referred to as tax compliance (Loo, 2006). The theory known as the deterrence theory states that taxpayers are maximising moral utility. In other words, taxpayers are influenced by economic motives such as profit maximisation. This theory implies that the cost of tax compliance affects tax compliance.

Tax compliance is the degree to which taxpayers comply with the tax law (James & Clinton, 2004) and full payment of all taxes due (Ahmed, E., & Braithwaite, V. (2005). Theoretically, it can be defined by considering three distinct types of compliance such as payment compliance, filing compliance, and reporting compliance (Brown & Mazur, 2003).

## 2.1 Company Income Tax Act (CIT)

The Company Income Tax Act; Cap C 21 Volume 3 Law of the Federation (LFN) 2004 (as amended), provides legal backing to the imposition of Income tax on companies in Nigeria. Section 9(1) of the act provide that Company Income Tax (CIT) is an annual tax, and for each year of assessment the tax shall be payable at the rate contained under Section 40 of the Act upon the profits of company accruing in, derived from, brought into, or received in, Nigeria.

## 2.2 Petroleum Profit Tax Act (PPT)

The Petroleum Profit Tax Act; Cap P13 Volume 13 LFN 2004 (as amended) governs the taxation of companies that engaged in the core activities of exploration and production of oil and gas under the ground or sea bed (i.e. upstream operations) in Nigeria.

## 2.3 Personal Income Tax Act (PIT)

The personal Income Tax Act; Cap P8 Volume 13 LFN 2004 provides the legal backing for the collection of Personal Income Tax (PIT) in Nigeria. The act was amended by the Personal Income Tax (Amendment) Act, 2011. Section 3 of PITA provides that every tax payer in Nigeria is liable to pay tax on the totality of his income whether derived from within or outside Nigeria. The salaries, wages, fees, allowances, and other gains or benefits, given or granted to an employee are chargeable to tax. An employer under the Act is expected to register with the relevant tax authority for the purpose of deducting income tax from his employees salaries with or without formal notification or direction by the relevant tax authority (Section 80(6)). Section 1 and 2 of the Act provides that PIT shall be collected on income of individuals, a corporate sole or body of individuals, Communities, Families and Trustees or Executors of any settlement. PIT is a direct tax payable by the tax payers in the state in which they reside. Taxes from the following persons are however excluded from state collectible taxes: (i) employees of the Nigerian forces (Army, Navy, Air force or Police) except those employed in civilian capacity; (ii) Officers of the Nigerian foreign service; (iii) Residence of the Federal Capital Territory, Abuja; and (iv) Persons residing outside Nigeria but who derives income or profit from Nigeria. Taxes from these categories of persons are collected by the Federal Inland Revenue Service (Section 2(1)(a)(b) PITA).

## 2.4 Value Added Tax Act (VAT)

The Value Added Tax Act; Cap. VI Volume 15 LFN 2004 (as amended) provides the legal backing to the imposition of Value Added Tax (VAT) in Nigeria. VAT is a consumption Tax paid when goods are purchased, and services rendered; it is a form of indirect tax borne by the final consumer as part of price paid for the goods or services. All procurements of movable goods and services are focus to a tax of 7.5 percent of the purchase price. The Internal Revenue Service administers this federal law (VATA) on behalf of three levels of government. Earnings are divided among the three divisions of government administration based on a formula set by the federal legislature from time to time. In 1993, this was implemented and it has been amended several times since then. The Value Added Tax (Amendment) Act of 2007 is the most recent amendment.

## 2.5 Capital Gains Tax Act (CGT)

Capital Gains Tax Act; Cap. C1 Volume 3 LFN 2004 (as amended) governs the imposition of Capital Gains Tax (CGT) in Nigeria. CGT is a tax passed on the gains made on the disposal of an asset being the difference between the original purchase price of the assets and the sales price.

## 2.6 Expectation Theory

Taxpayers will pay their taxes because they believe that the tax they pay will be responded to by the government by providing public services that they deem appropriate to the value they pay. The findings of Cowell & Gordon (1988) indicate that there are indications of the expectation of taxpayers that by paying taxes they will get better public services. This research will be hinged on Cowell & Gordon (1988) proposition that link influence of expectations on tax compliance. One reason why there is a low level of taxpayer compliance in fulfilling tax obligations is the absence of direct or indirect benefits through public services that are considered inadequate. Bărbuţă-Mişu (2011) says the economic factors that influence tax compliance are actual income levels, tax rates, tax benefits, tax audits, audit probabilities, fines, and penalties. The non-economic factors are people's willingness to pay taxes, public education, tax morale, tax information, attitudes toward taxes, personal, social and national norms, and perceptions of tax system justice.

## 2.7 Theory of Planned Behavior

The Theory of Planned Behavior (Figure 1) was proposed by Ajzen (1985) as an extension of the Theory of Reasoned Action, which had been proposed a decade earlier, by (Fishbein & Ajzen, 1975). According to the Theory of Reasoned Action, people are more likely to do a behavior if they evaluate the suggested behavior as having positive results (attitude) and if they think their significant others want them to perform the behavior (subjective norm). A high correlation of attitudes and subjective norms to behavior has been confirmed in many studies (Sheppard *et al.*, 1988). However, the same authors have raised a counterargument against the high relationship between attitude, subjective norms and behavior. They argued that because of circumstantial limitations, attitude and subjective norms do not always lead to behavior. To improve on the predictive power of the Theory of Reasoned Action Ajzen added a new component "perceived behavioral control" to help account for behaviors that arise where an individual's control over the behavior is incomplete. By this, he extended the Theory of Reasoned Action to include the role of non-volition in predicting behavior. The extended version is called the Theory of Planned Behavior.

Behavioral, Normative and Control beliefs: In addition, the three predictors are determined as follows: Attitude is a function of behavioral belief or salient information, which is the perceived likelihood that performing the particular behavior will lead to certain consequences, weighted by the extent to which these consequences are valued. Subjective norm is a function of normative belief which is the perceived pressure from specified referents to perform the target behavior, weighted by the motivation to comply with the people one cares about. Perceived behavioral control is determined by control belief which is the perceived access to the necessary resources and opportunities to perform a behavior successfully, weighted by the perceived power or effect of the particular control factor. Intention and Behavior: Intention is the cognitive representation of a person's readiness to perform a given behavior and is considered to be the immediate antecedent of behavior. Behavior is the translation of intention to action. The main hypothesis of the Theory of Planned Behavior is that there is one immediate determinant of behavior, namely the person's intention to perform or not perform it. This intention is itself, in turn, viewed as determined by three things: attitude, subjective norms and subjective control toward the specific behavior. More specifically, the Theory of Planned Behavior attempts to provide an account of the way in which attitude, subjective norms, subjective control and intentions combine to predict behavior.

## 2.8 Fiscal Exchange Theory

This illustrates that the government can enhance the level of tax compliance by providing goods and services to its people more efficiently and effectively (Cowell & Gordon, 1988). Further, which also provides a good link between the taxpayers and the government (Moore *et al.*, 2004).

Therefore, it is more justifiable to assume that taxpayers' behavior is influenced by either their level of satisfaction or level of dissatisfaction with the provision of public goods and the services.

Buchanan J.M. proposed fiscal exchange theory in his 1976 research, Taxation in Fiscal Exchange, to show that the two sides of the fiscal account (taxes and expenditure) must be evaluated simultaneously and from the perspective of the political framework. The fiscal exchange hypothesis is based on the premise that government expenditure is an important instrument for motivating people to pay their taxes. The government can generate more revenue by investing in delivering goods and services that citizens require in an efficient and accessible manner.

According to Syadullah& Wibowo (2015), when the provision of goods and services improves, tax revenue will increase as a result of compliance. Citizens would like to pay taxes in exchange for public amenities that they value since they are concerned about what they will receive in return for the levy they pay. The presence of positive advantages can improve the likelihood of the taxpayer happily complying.

Tax collectors corruption affects taxpayers' unwillingness to pay taxes, which contradicts the belief that taxpayers are unwilling to pay taxes, resulting in the decision to employ force (Lien, 2015). Several factors influence taxpayers' attitudes toward paying taxes, including the presence of tax morality, often known as the ethical component, which arises from good governance. According to Imam and Jacobs (2007), tax revenue production is solely the responsibility of tax administrators, and collection can be aided by excellent governance carried out by the executive branch of government.

## 2.9 Empirical Review

Ngozi and Obioma (2018) on the effect of TIN on non-oil tax revenue through a comparative analysis of pre and post TIN years of 2000 to 2015 revealed that there has been a significant increase in total non-oil tax revenue with the introduction of TIN. Data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin (2010). The study employed both descriptive and pairwise t-test statistical techniques for analyses with total non-oil tax revenue as the dependent variable while CIT, VAT, and TET were the independent variables. The study concluded that TIN could engender increase in revenue generation.

Asaolu *et al.* (2015) examined the impact of tax reforms on revenue generation in Lagos State. Using Time Series quarterly data between the period of 1999 and 2012, the ordinary least square (OLS) regression technique was used to analyze the secondary data collected from the Lagos State Internal Revenue Service (LIRS) in the form of taxpayer statistics and revenue status report. Findings showed that there is a long run relationship between tax reforms and revenue generation in Lagos State. Findings further revealed that the State depended on tax reforms more than other sources of revenue generation. It was therefore concluded that the states should work out modalities through other sources of revenue could be enhanced.

Okee and Isoso (2022) investigate the effect of voluntary tax compliance on petroleum profit tax revenue generation in Nigeria, for the periods 2007-2019. The population of the study was 26 twenty six (26) Federal Inland Revenue Service (FIRS) field offices in South - South region of Nigeria; Census was used for the study. Primary data were collected through questionnaire while secondary data were collected from FIRS planning, research and statistics Departments, Central Bank of Nigeria (CBN) statistical bulletin, articles and magazines. The data were analyzed using descriptive statistics of mean, standard deviation, frequency distribution and bar chart. Inferential statistics of linear regression was used to test the hypotheses in the study. These analyses were done with the aid of the Statistical Package for Social Sciences (SPSS) version 22.0. From the analyses, it was found that voluntary tax compliance has positive, strong and significant effect on petroleum profit tax revenue in Federal Inland Revenue Service of Nigeria, approximately 63%, of the changes in petroleum profit tax, are accounted for by voluntary compliance. Based on this finding, the study concludes that government should pay attention to the factors that influence the willingness of citizens to pay tax and improve on them, thereby improving taxpayer's willingness to pay tax, lending credence to the theory of reasoned action (TRA) which explains an individual's decision, a voluntary behavior to engage in a particular way based on the outcomes the individual expects will come as a result.

Umar *et al.*, (2017) evaluated the challenges of tax revenue generation in developing countries. The study identifies tax noncompliance as a key factor for the current underperformance of tax revenue in developing countries. They advocate for the carrot and stick model in tackling challenges of tax compliance in developing countries. It argues that an optimal mix of the carrot and stick model will go a long way in tackling the tax revenue challenges of developing countries. Citizens engagement in tax policy formulation and tax service quality are the carrot factors that encourage high compliance in tax payment while, sanction of tax defaulters in line with extant law is the stick factor.

Niway and Wondwossen (2017) investigate the determinants of voluntary tax compliance behavior in self-assessment system in Ethiopia. The researchers argued that taxpayer's voluntary compliance with the tax system is influenced by economic, institutional, social, individual and demographic variables. The researchers employed a cross sectional survey method of research design, using the target population of five cities of Southern Nation, Nationalities and Peoples` Regional State (SNNPRS), Ethiopia. A sample of 377 Category "A" taxpayers were randomly taken from the selected cities. Both primary and secondary data were collected. In order to analyze and present the results of this study, Pearson correlation matrix and logistic regression model were employed. Their result revealed that tax knowledge, simplicity of tax returns and administration, perception on fairness and equity, perception on government spending, probability of auditing, and the influence of referral group were determinant factors that influence voluntary compliance behavior of tax payers in self-assessment system.

Madugba *et al.* (2015) investigated the relationship between corporate tax and revenue generation: Evidence from Nigeria. The study employed petroleum tax income (PTI) and companies' income tax (CIT) to regress against revenue generation, measured by total consolidated revenue (TCR). Pearson correlation and simple regression was used to analyze the data gotten from Central Bank of Nigeria Annual Statistical Bulletin of various years. The result of the correlation showed a positive significant relationship between Petroleum Tax Income and TCR. Also it showed a positive significant relationship between Companies' Income Tax (CIT) and Total Consolidated Revenue (TCR).

### 2.10 Gap in Empirical Studies

Several studies have tried to analyzed the impact of tax compliance on non oil tax revenue (such as (Arif & Rawat, 2018; Asaolu *et al.*, 2015; Gitaru, 2017; Madugba *et al.*, 2015; Meagher, 2018; Ngozi & Obioma, 2018; Niway & Wondwossen, 2017; Okee & Isoso, 2022; Oluyombo & Olayinka, 2018; Sapiei *et al.*, 2014; Umar *et al.*, 2017) and arrive at the contradictory results making it difficult to establish with certainty the logic, nature and significance of the impact of tax compliance on non oil tax revenue growth in Nigeria. The implication is that empirical investigations fail to provide conclusion result about the growth in non oil tax revenue. The empirical evidence is mixed across economics, data and methodologies, with some finding a negative impact, while others find little or no significant growth effect of taxation as a source of revenue. Also, the pattern of flow and the intervening relationship between taxation revenue and tax compliance by active tax payers has remain an inconclusive discourse particularly for developing and emerging markets such as Nigeria, where most studies conducted did not make use of aggregated data of tax compliance as against disaggregated tax compliance components among corporate, enterprise and individual tax compliant tax payers which this study seek to examine.

## 3.0 Methodology

### 3.1 Research Design

The study adopted ex post facto research design of annual time series analysis.

### 3.2 Source of Data

Secondary data for nineteen years (2003 - 2022) were collected from various issues of the Federal Inland Revenue Services (FIRS) statistical bulletin and annual reports. Tax compliances as regressand variable was measured with number of actual annual total non oil tax revenue in Nigeria and Tax compliances among active tax payers of company income tax (CIT), Petroleum profit tax (PPT), Capital gain tax (CGT), Value Added Tax (VAT) and Personal Income Tax (PIT) as regressors. The data was analyzed using multiple regression analysis to establish the relationship between the dependent and independent variables.

### 3.3 Variables of the Study

Dependent Variable: Non Oil Revenue proxied by actual annual Total Tax Revenue (NORN)
Independent Variable: Tax Compliance (Active Tax Payers)
Tax Compliance (Active Tax Payers) is segregated into Active Tax Payers on Value Added Tax (ATVAT), Active Tax Payers on Company Income Tax (ATCIT), Active Tax Payers on Petroleum Profit Tax (ATPPT), Active Tax Payers on Personal Income Tax (ATPIT) and Active Tax Payers on Capital Gain Tax (ATCGT).

### 3.4 Model Specification

Objective: to assess the influence of Tax Compliance (Active Tax Payers) on Non Oil Revenue proxied by actual annual Total Tax Revenue (NORN) in Nigeria;

The model (1, 2) below is adapted from work of Madugba *et al.*, 2015; Ngozi & Obioma, 2018) i.e. Non Oil Revenue =*f*(Tax Compliance (Active Tax Payers)).

Tax Compliance (Active Tax Payers) is segregated into Active Tax Payers on Value Added Tax (ATVAT), Active Tax Payers on Company Income Tax (ATCIT), Active Tax Payers on Petroleum Profit Tax (ATPPT), Active Tax Payers on Personal Income Tax (ATPIT) and Active Tax Payers on Capital Gain Tax (ATCGT).

NORN=*f*(ATVAT,ATCIT,ATPPT,ATPIT,ATCGT)………………………………..(1)
$NORN=\beta_0+\beta_1 ATVAT+\beta_2 ATCIT+\beta_3 ATPPT+\beta_4 ATPIT+\beta_5 ATCGT+U$…………….(2)
Where: $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ and $\beta_5$ are regression coefficients to be estimated; $\varepsilon$ is Error term.

## 4.0 Data Analysis

### 4.1 Descriptive Statistics and Normality Tests Multivariate Time Series Data

The following descriptive statistics, mean, median, percentage, variance, standard deviation, standard error and coefficient of variation, will be used to summarize the data. Normality of the data will be tested by skewness, kurtosis, Shapiro-Wilk test, Kolmogorov-Smirnov test and Jarque-Bera (JB) test.

### 4.2 Diagnostic Tests

The study will use the following diagnostic test to resolve the following econometric time series problems: Nonstationarity (Unit root)-Dickey Fuller (DF), Augmented-Dickey-Fuller (ADF), Phillips-Perron (PP) and Kwiatkowski–Phillips–Schmidt–Shin (KPSS) tests; Heteroscedasticity-Breusch-Pagan test, White test and Ramsey-Reset test; Autocorrelation-Durbin-Watson test; Multicollinearity-Variance Inflation Factors (VIF).

### 4.3 Method of Data Analysis

The following regression, cointegration and causality tests will be conducted on the time series data: Regression: ARDL Bound test, Johansen approach and Error-Correction Mechanism (ECM) models. Time series regression (estimating standard error of regression (S), R-squared, adjusted R-squared and predicted R-squared) using heteroscedasticity models for prediction applying Generalised Auto-Regressive Conditional Heteroscedasticity (GARCH) model.

$\text{Log NORN} = \log \beta_{0,} + \log \beta_1 \text{ ATVAT} + U$ ……………………………….2a
$\text{Log NORN} = \log \beta_{0,} + \log \beta_2 \text{ ATCIT} + U$ ………………………………...2b
$\text{Log NORN} = \log \beta_{0,} + \log \beta_3 \text{ ATPPT} + U$ ………………………………...2c
$\text{Log NORN} = \log \beta_{0,} + \log \beta_4 \text{ ATPIT} + U$ …………………………………2d
$\text{Log NORN} = \log \beta_{0,} + \log \beta_5 \text{ ATCGT} + U$ ………………………………..2e

The study is concerned with the parsimonious model that is more interpretable as shown on Table 4.3.

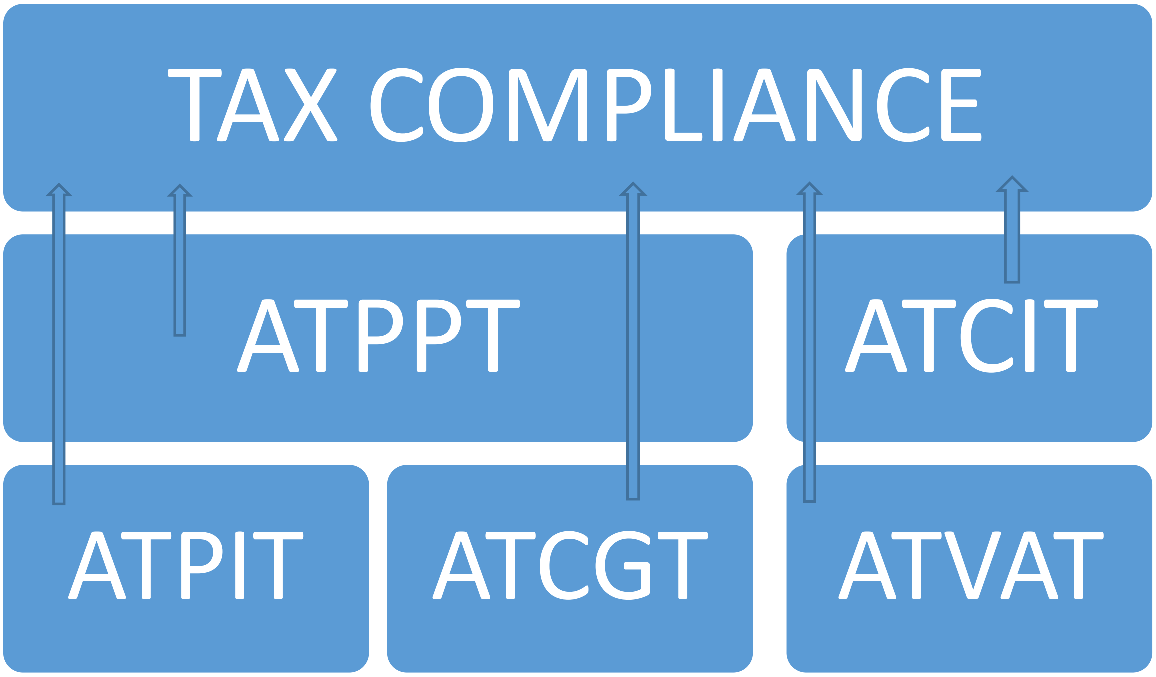
**Table 4.3: Parsimonious Model for Non Oil Revenue proxied by actual annual Total Tax Revenue (NORN) in Nigeria.**

| Variables | Coefficient | Std. Error | t-statistic | Prob |
|---|---|---|---|---|
| D(LOG(ATVAT)) | 0.683842 | 0.970672 | 3.704504** | 0.0045 |
| D(LOG(ATVAT (-1)) | 1.827925 | 1.459066 | 1.252805* | 0.0067 |
| D(LOG(ATCIT)) | 0.360590 | 0.472622 | 2.762956** | 0.0344 |
| D(LOG(ATCIT)(-1)) | 2.845995 | 4.045041 | 4.703576** | 0.0455 |
| D(LOG(ATPPT)) | 2.940964 | 4.6350609 | 3.634429** | 0.0000 |
| D(LOG(ATPPT (-1)) | 2.286043 | 3.554049 | 0.643222* | 0.0000 |
| D(LOG(ATPIT)) | 0.511542 | 0.627890 | 1.914700* | 0.2345 |
| D(LOG(ATPIT (-1)) | -0.236908 | 0.573915 | -0.412793* | 0.2567 |
| D(LOG(ATCGT)) | 0.511542 | 0.627890 | 1.914700* | 0.4589 |
| D(LOG(ATCGT (-1)) | -0.236908 | 0.573915 | -0.412793* | 0.3452 |
| ECM (-1) | -0.033045 | 0.022750 | -2.452452* | 0.0000 |
| C | 17.38039 | 1.421629 | 12.22569 | 0.1035 |
| R-square | 0.732006 | | | |
| Adjusted R2 | 0.727985 | | | |
| F-statistic | 42.82064 | | | |
| Durbin-Watson Stat. | 1.947024 | | | |
| Prob. (F. statistic) | 0.00003 | | | |
| * not significant at 5 percent level. | | | | |
| ** Significant at 5 percent level. | | | | |
| Dependent variable: Log (GDP) | | | | |

Source: Authors computation, using Eview 4.0 software.

### 4.4 Conceptual Framework

The conceptual framework examines the many concepts of governance quality as an independent variable and tax revenue mobilization as a dependent variable in great depth. This framework also explains the notion, which improves the comparability of the variables in this study. A conceptual framework represents the researcher's synthesis of the literature on explaining a phenomenon. Given his prior knowledge of other researchers' points of view and observations on the area of research, it lays out the actions that must be taken during the investigation. In other words, the conceptual framework is the researcher's understanding of how the variables in his study connect (Regoniel, 2015).




The findings revealed that tax compliance have significant effect on boosting tax revenue generation and that tax default can cause significant variation in government revenue. The variable in the model is significant at the 5% critical level and the regression coefficient reveals that 72.8% of the total variation in revenue is accounted for by tax compliance with other variables in the stochastic term accounting for the remaining 27.2%. It is recommended that Federal Inland Revenue Service should open more offices across the federation to increase the ease of paying taxes, set performance targets for managers of tax offices and sanction for non-performance, improve on leadership accountability at all levels of government and ensure that tax revenue is transparently utilized so that taxpayers can see the benefits accruable from tax payment and take ownership of public infrastructures.

Tax Compliance (Active Tax Payers) is significantly and positively related to Active Tax Payers on Value Added Tax (ATVAT) (1.827925), Active Tax Payers on Company Income Tax (ATCIT) (2.84599) and Active Tax Payers on Petroleum Profit Tax (ATPPT) (2.286043), while Tax Compliance (Active Tax Payers) is negatively and insignificantly correlated with Active Tax Payers on Personal Income Tax (ATPIT)( -0.236908) Active Tax Payers on Capital Gain Tax (ATCGT)( -0.236908).

## 5.0 Conclusion and Recommendation

The paper investigated the tax compliance (active tax payers) and non oil revenue in Nigeria in relation to fiscal exchange theory and expectation proposition. The study adopted ex post facto research design; secondary data for nineteen years (2003 - 2022) were collected from various issues of the Federal Inland Revenue Services (FIRS) statistical bulletin and annual reports. Tax compliances as regressand variable was measured with number of actual annual total non oil tax revenue in Nigeria and Tax compliances among active tax payers of company income tax (CIT), Petroleum profit tax (PPT), Capital gain tax (CGT), Value Added Tax (VAT) and Personal Income Tax (PIT) as regressors. The data was analyzed using multiple regression analysis to establish the relationship between the dependent and independent variables. The findings revealed that tax compliance have significant effect on boosting tax revenue generation and that tax default can cause significant variation in government revenue. The variable in the model is significant at the 5% critical level and the regression coefficient reveals that 72.8% of the total variation in revenue is accounted for by tax compliance with other variables in the stochastic term accounting for the remaining 27.2%.

Specifically, Tax Compliance (Active Tax Payers) is significantly and positively related to Active Tax Payers on Value Added Tax (ATVAT) (1.827925), Active Tax Payers on Company Income Tax (ATCIT) (2.84599) and Active Tax Payers on Petroleum Profit Tax (ATPPT) (2.286043), while Tax Compliance (Active Tax Payers) is negatively and insignificantly correlated with Active Tax Payers on Personal Income Tax (ATPIT)( -0.236908) Active Tax Payers on Capital Gain Tax (ATCGT)( -0.236908). It is recommended that Federal Inland Revenue Service should open more offices across the federation to increase the ease of paying taxes, set performance targets for managers of tax offices and sanction for non-performance, improve on leadership accountability at all levels of government and ensure that tax revenue is transparently utilized so that taxpayers can see the benefits accruable from tax payment and take ownership of public infrastructures.

The following suggestions are made based on the findings of this study: Federal Inland Revenue Service can improve compliance, willingness, and enthusiasm of taxpayers to pay taxes by: (1) making the tax collection system more simple, clear, easy and to take a short time; (2) Increase public trust in the government. If the government can be trusted and use tax money correctly, anyone will be willing to pay taxes; This study recommends that Government should continue to encourage taxpayer's willingness to pay by doing those things that will motivate voluntary payment of taxes and filing of returns without the use of force. All states and the federal government should enact policies requiring the periodic publication of pertinent information on tax collection and taxpayer profiling. Hence it is suggested that tax authorities at different levels must be accountable in helping taxpayers to comply with the tax laws.

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