Determinants of Personal Income Tax Compliance Behaviour in Kaduna State, Nigeria: Slippery Theory Approach

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Abstract

This study examined the impact of public confidence in government and tax enforcement on personal income tax compliance behaviour in Kaduna State Nigeria. The study's data were obtained through a survey from a primary source. With a view to understand the characteristics of the study' data, and also to determine the most appropriate analytical tool to employ, Breusch-Pagan-Godfrey heteroskedasticity and Variance Inflation Factor tests were conducted. Analytical capacity of Weighted Least Square Regression Model was exploit to analyse the study's data. The study found that, income level has significant negative impact on personal income tax compliance behaviour in the state. While public confidence in government and tax enforcement have significant positive impact on the tax compliance level, however tax knowledge has insignificant positive impact on the compliance rate in the state. The study concluded that, income level, public confidence in government and tax enforcement are important determinant of personal income tax compliance behaviour in the state. The Kaduna State Internal Revenue Service (KADIRS), should enhance her efforts of enforcing compliance with the relevant provisions of tax laws and regulations in the state. The state government should also, doubled her financial and political support to the KADIRS, in order to maximise compliance with the provisions of the relevant tax laws and regulations in the state.

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1.0 Introduction

Personal Income Tax (PIT) plays a critical role for providing a reliable and sustainable source of tax revenue to many developed countries. According to Nasir (2022), PIT contributed 41.2% of the total tax revenue generated in United State of America in 2021. Similarly, Benedek, Benitez, and Vellutini (2022) opined that, PIT is an important source of tax revenue throughout developed countries, however the contribution of PIT to total tax revenue in developing countries is insignificant. Enache (2020) said that, the average contribution of PIT to tax revenue in OECD Countries, African Countries, South Africa, Ghana and Nigeria, between 1990 and 2018 is 23.91%, 17.47%, 34.55%, 26.75% and 9.78% respectively. Nasir (2022) argued that, the ratio of PIT to total tax revenue in Nigeria, is lower than the African average. Moreover, Ibrahim (2022) opined that, the main factor responsible for lower tax revenue in Nigeria, relative to other countries is low tax compliance rate, tax compliance level in Nigeria is between 18.5% and 21.5%.Similarly, lower PIT compliance rate, in Kaduna State is a fact, which is confirmed by several empirical studies. According to an empirical study conducted by Usman (2018) tax compliance rate in the state, is between 9.68% and 13.85%. According to a records from Kaduna State Internal Revenue Service (KADIRS) (2021): the State Internally Generated Revenue (IGR), IGR related to taxes, PIT, PAYE and Direct Assessment collected in 2020 are N50.77 Billion, N27.16 Billion, N12.88 Billion, N12.58 Billion, and N297.3 Million respectively. This means that, the contribution or ratio of PIT to the state IGR is 0.2537 (25.37%), the ratio of PAYE to the state IGR is 0.2478 (24.78%), while the ratio of Self-Assessment to the state IGR is 0.0059 (0.59%).However, the ratio of self-assessment collected to PAYE collected in the same period is 0.0236 (2.363%).

Consequently, for almost four decade tax administrators, tax experts and public finance analyst have been working closely to identify the main causes of tax evasion or tax non-compliance in different economies, with a view to have a common push that may provide a tool that can be used to eradicate or minimize the systemic problem. In this regard two main approaches were developed, which are economic deterrence approach (relies on the employment of coercive (enforcement) means to tackle non-compliance) and sociological approach (relies on the employment of persuasive means to tackle non-compliance).

According to economic deterrence theories, taxpayer's decision to comply or not with the provisions of tax laws, is primarily determined by economic factors, such as the income level of the taxpayer, tax rate, penalty rate, probability of detecting tax fraud and other relevant economic sanctions. The main aim of the taxpayer or the economic agent is utility maximization by weighting cost and benefit of his action. Consequently, tax authorities have to apply economic sanctions such as frequent tax audit (with a view to increase the probability of detecting tax fraud), higher tax rate and higher penalties rate to deter or prevent tax non-compliance behaviours. Among the theories under economic deterrence approach are A-S Model, Expected Utility Theory and Rational Choice Theory.

However, Sociological or Psychological approach, claims that tax compliance behaviour of a taxpayer is primarily determined by his perception of the fairness of a tax system, accountability and transparency in spending tax revenue and respect for the taxpayer by tax authorities and government. The approach requires application of the following tools to enhance tax compliance behaviours: taxpayer's education, provisions of desired public services, transparency and accountability in governance, equal treatment to all taxpayers, and respect for taxpayers among others. The aim of the taxpayer is to get fiscal and social justice. Among the theories that are under the influence of the sociological approach are Fiscal Exchange theory, Psychological Tax Contract theory and social contract theory among others.

In view of the above, in recent years, the leadership of Kaduna State Inland Revenue Service (KADIRS) has taken many steps from different front with a view to improve tax compliance level in the state. KADIRS managements engages in a massive taxpayers' education campaign in both English and local languages, automates tax administration processes ranging from registration, filing of tax returns, payments of taxes due, application and generation of tax clearance certificate, with a view to reduce tax compliance cost. The agency holds several meetings and symposiums with different business organisation. KADIRS organised the first tax dialogue in 2022. From enforcement point of view several business

premises were sealed up, many recalcitrant taxpayers were taking to court and bank accounts of some non-compliant taxpayers were put on lien, all with a view to improve taxpayers compliance level in the state.

Having realised the paramount role that a political authority can play in improving tax compliance rate in a particular tax environment. With a view to improve transparency and accountability in public spending, Kaduna State Fiscal Responsibility Commission was created in 2016, and a designated website was developed, which allows general public to access information about the state's revenue and expenditures, with a view to burst public confidence on the political system. In 2020 Institute of Chartered Accountant of Nigeria (ICAN) Accountability Index Report ranked Kaduna State first, in term of open information on fiscal strategy and budgeting. The state government embarks on urban renewal projects which entails, massive construction of roads, renovation of hospitals, schools, government offices, and digitalization of public services in the state.

Even though, both the state political and revenue authorities have express satisfaction with the level of improvement in the rate of tax compliance in the state, comparing the state's IGR before the aforesaid reforms and the present state's IGR. However, some public finance experts who are closely monitoring tax revenue generation in the state, argued that the efforts of the state political and revenue authorities have not yielded a significant improvement on the tax compliance rate in the state, particularly in the area of self-assessment regime. For example in the year 2020, tax revenue from self-assessment regime generated by the state is just N297.3 million, which is equivalent to just 1.09 percent of the total taxes collected by the state within the period.

In view of these contrasting views, this study assessed the impact of enforcement (coercive) and public trust (persuasive) on self-assessment personal income tax compliance behaviours in Kaduna State.

2.0 Literature Review

2.1 Conceptualization

PIT was defined by Kwame (2019), as the taxes payable by individuals or households in a particular tax jurisdiction. PIT can also be conceptualized as any tax imposed on the income of taxable individuals, partnership, families or communities.

Transparency International (2021) defined, corruption as the abuse of power entrusted on a person for a personal gain. Corruption debilitates public trust, cripple democracy, slows economic growth and development and escalates poverty and income in equality. According Melgar, Rossi and Smith (2010) corruption and corruption perception are two closely related phenomenon. Corruption perception is the general view or believe that public have about the spread of corruption in a particular economy; they further claimed that corruption perception has more devastating effect on social, economic or political life than the corruption itself. Corruption perception create a distrust toward all or a particular government institution and provide incentive for encouraging and accepting corruption as normal culture. This paper views corruption perception as the general public opinion about the level of corruption in a particular political entity.

Similarly, OECD (2020), defined trust in government as the level of citizens' satisfaction with the degree of a government fairness in managing public resources, for the public interest. Therefore fair and reliable public services provisions, create public trust. Similarly, Gamson (1968), views trust in government as the hope that citizens are having, that a government or its institution will produced the best outcome for the public. Christensen and Laegried (2002), opined that trust in government is usually measured in term of citizen's satisfaction with the level of provisions of a specific public service (s), unlike general support which is determined by political and demographic factors.

Moreover, Adeniran, Ekeruche and Onywkwena (2021) viewed tax enforcement, as the administrative steps taken by revenue authority to coerce taxpayers to meet their required tax obligations. While Tanko (2015) described tax enforcement, as the act of compelling taxpayers to comply with the provisions of the relevant tax laws, which involve imposing fines, search and seizure. Oladele, et al (2019) identified two forms of tax enforcement, which are enforcement of tax laws and enforcement of Judgement. Enforcement of tax laws has to do with ensuring that all taxpayers adhere to

the provisions of tax laws as at when due, while enforcement of judgement ensures non-compliant taxpayer obey the decision that a court made against him.

2.1 Theoretical Literature

Slippery Slope Framework Theory (SSFT)

The issue of tax compliance has been a subject of controversies and debates not only among tax authorities but also among scholars in the field of public finance. Consequently two main approaches were developed by scholars (Such as Allingham and Sandmo (1972), Yitzhaki (1972), Gowell and Gordon (1998) and Latane (1981)) to analyse the factors that are driving tax compliance behaviours and also the possible methods that can used to tackle the problem. The approaches are economic and sociological. Some theories under economic deterrence approach are A-S Model, Expected Utility Theory and Rational Choice Theory, while Fiscal Exchange Theory, Social Impact Theory and Psychological Tax Contract Theory are among the theories inside the envelop of sociological approach.

Economic approach assumes that taxpayer is a rational economic agent, who always aspire to maximize his utility. The taxpayer's decision to comply or not to comply is guided by the value of the probability of detecting tax fraud and the quantum of the economic sanction that may be impose on him after the detection, through fine and penalty. According to the economic approach, the economic agent decision to comply or not to comply is based on the cost and benefit that may accrue or borne by him. If the benefit of non-compliance outweigh the cost, the economic agent will definitely decide not comply, no matter how the decision will affect other people. Proponents of economic approaches assumed that, the only tool that can be used to tackle tax evasion is economic sanctions, such as imposition of penalties and other enforcement efforts, to this approach tax compliance behaviour is influence by extrinsic (external) factors.

While sociological approach assumes that tax compliance behaviour is influence by either social or psychological factors, such as societal influence, peer group influence perception about the trust, honesty, transparency and fairness of government. Cordial relationship between government and citizens also matter. According to the proponents of this approach, tax compliance behaviour is largely influence by intrinsic (internal) factors, because perception of the taxpayer about certain social variables matters, therefore the best method to control non-compliance behaviour under this approach is to build trust and cordial relationship between the taxpayer and the government.

The idea of Slippery Slope Framework Theory (SSF) was initiated by Kirchler, Hoelzt and Wahl in 2008. The theory combine both economic and sociological approaches in one model, to analyse how the application of the approaches simultaneously can influence tax compliance behaviour. The theory viewed that none of the approaches can stand alone and provide adequate analyses or explanation of tax compliance behaviour. For example no matter how effective economic deterrence measures are, if the taxpayers' perception about government is bad, if they thinks that the government is corrupt ,extravagant, and unfair, they may device many means to evades taxes, because they have more information about their taxable activities than the government/revenue authority. Similarly, economic sanctions is still valid and will impact on the tax compliance behaviour of some economic agents, such as free riders, whose decision is largely influence by their selfish interest. No matter how good government is, whatever efforts the government is making to provide the required public services or how honest and transparent the government is, yet free riders will evade tax, as far as they got the opportunity. The below figure will provide graphical explanation of this framework.
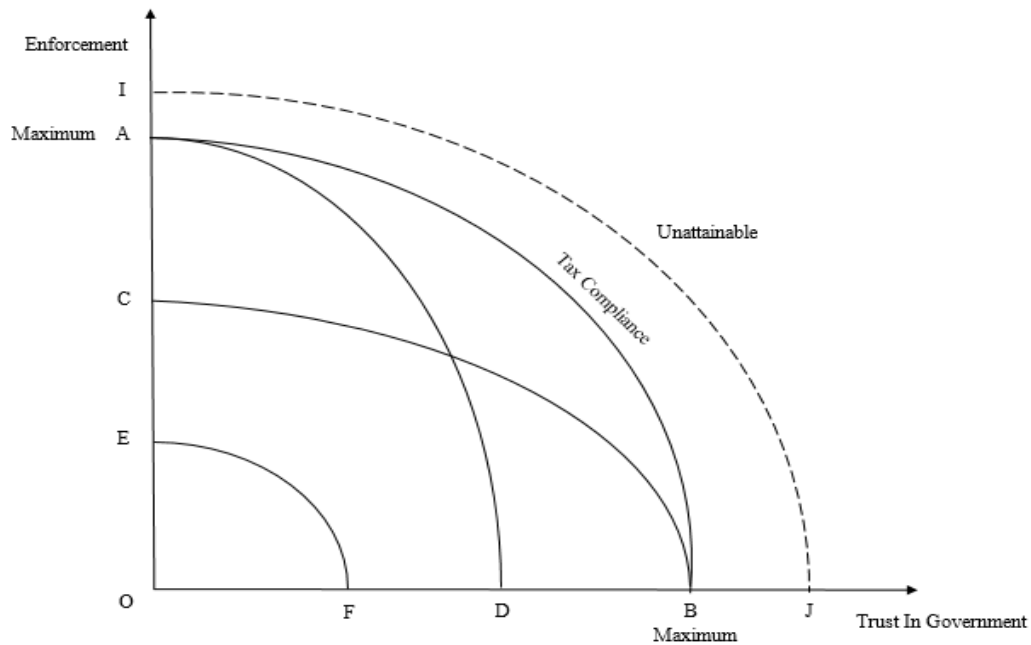
Adapted from Production Possibility Frontier

Figure 1:
Trust vs Enforce Relationship Curve

From the above figure, enforcement (economic approach) is presented at the vertical axis of the curve. While trust in government (sociological approach) is presented at the horizontal axis of the curve. When enforcement (economic approach) and trust in government (sociological approach) were very low, tax compliance level will also be very low. The tax compliance level is represented by the area of the arc EOF. This provide a clear picture of the tax compliance situation in many developing countries, where the Revenue Authorities are weak and unable to discharge their duties and the trust in government is also very low, many taxpayers in those environment believed that the governments are corrupt and undemocratic.

When enforcement is at maximum at point A of the vertical axis, and trust in government is low at point D of the horizontal axis, the tax compliance level is represented by the area of the arc AOD. And when trust in government is at maximum at point B of the horizontal axis, and enforcement is low at point B of the vertical axis, the tax compliance level is represented by the area of the arc BOC. From this it can be seen that, when one of the variable it at maximum level and the other is below the maximum, the tax compliance level will fall below the possible or attainable maximum level.

When the enforcement level which is largely depend on the soundness of the tax laws and the ability of the tax authority to implement the tax laws is at maximum level at point A of the vertical axis of the curve and the trust in government which is largely depend on the transparency, honesty, competency and the respect the government have for the general public is at maximum at point B of the horizontal axis, the tax compliance level will attained the maximum possible level with is represented by the area of the arc AOB. Based on this maximum tax compliance level can only be achieve if government employed the tools of the two approaches that is stick and carrot method. If we assumed the government uses tax revenue to provide public services, then maximum public services can only be available when the tax compliance level is at maximum level. Therefore achieving maximum tax level is very important.

The desired tax compliance level is represented by the area of the arc IOJ, but unfortunately it cannot be achieve, no matter how efficient a tax system is, and how transparent the government is, due to the problem of asymmetric information and principal agent issues, some taxpayers will still escape been in the tax net completely, some may

understate their income and some may overstate their expenses. Therefore this problem will prevent any economy to attain the desired tax compliance level. That is why tax non-compliance is a global issue, the extent of the problem depend on how an economy managed to utilise these two approaches, which is economic and sociological approaches. Depending on one or given undue attention on either will yield a tax compliance level that is below the maximum level.

Slippery Slope Framework provide a very powerful and important insight on the determinant of tax compliance level and how the problem of tax non-compliance can be tackle or minimise. It explains why tax compliance level is very low in many developing economies like Nigeria in general or Kaduna State in particular.

2.3 Empirical Literature

Kwame and Ali (2022) carried on a research to assess the impact of trust in government, income level and corruption perception on tax compliance behaviour in some West African states. The study's data was obtained from a secondary source. Generalized methods of moments (GMM) was employed to analyse the study's model variable. Study's empirical outcome confirmed a significant negative relationship between tax compliance rate in the States and corruption perception, trust in government has insignificant positive impact on tax compliance rate. Using panel data to examine tax compliance behaviour , particularly when a variable in all the countries are not moving in the same direction, may lead to the presence of outliers, which may affect the reliability of the result

A similar study was conducted was conducted by Oyewole (2022) with a view to assess the factors driving personal income tax compliance behaviour in Ogun State, Nigeria. The study's data were obtained from a primary source,   while the technique of multiple regression model was utilised to analyse the cross sectional data. It was found that, probability of detecting tax fraud, probability of tax enforcement and income level have positive impact on tax compliance rate in Ogun State. However corruption perception and tax burden has a significant negative influence on Personal Income Tax compliance level in the state. Using multiple regression to analyse cross-sectional, heteroskedasticity problem may affect the validity of the result.

Abdul-Rashid, Mohamed, Palila and Amira (2021) carried on a study to assess the impact of enforcement powers and trust in government on tax compliance behaviours in Malaysia. The study's data was obtained from a primary source, and the data is quantitative ordinal, while structural equation model was used to estimate the parameters. The study's outcome, confirmed a strong relationship between tax enforcement and enforce tax compliance behaviour. While voluntary tax compliance is influence by persuasive and trust in authority. Ngozi (2021) examined the factors that are driving income tax compliance behaviour among small scale traders in Anambra State. Survey method was employed to obtain the study's data. Binary logit regression model was used to analyse the data. It was found that income level, trust in government and fairness of the tax system have a positive impact on the tax compliance behaviour in Anambra State. While tax rate, tax burden and tax compliance cost have a significant negative impact on tax compliance behaviour in the state.The validity of the study's outcome may be affected by the problem of heteroskedasticity.

Aliu (2020) assessed the influence of public goods provisions and corruption perception on tax compliance rate in Edo State, Nigeria. The study's data was obtained from a primary source, while statistical techniques of multiple regression model was employed to analyse the ordinal data. The statistical result confirmed an insignificant negative relationship between corruption perception and tax compliance behaviour in the state. While transparency in public spending and public service provisions shows a significant positive impact on tax compliance behaviour in the state. Boly, Konte, and Shimeles (2020) conducted a study, to examine the influence of corruption perception on tax compliance behaviour in selected thirty six African countries. The study's data was retrieved from a secondary source, Afrobarometer survey data for the period of 2011 to 2015 were used, while probit regression technique was employed to analyse the relationship. The study's outcome found that perception of low corruption among tax authorities and executive arm of government and perception of good governance have a significant positive impact on tax compliance behaviours in the countries. Using

panel data to examine tax compliance behaviour , particularly when a variable in all the countries are not moving in the same direction, may lead to the presence of outliers, which may affect the reliability of the result

Dissanayake and Premaratna (2020) carried on a research, to determine the factors that are influencing personal income tax compliance behaviour in Sri Lanka. The study's data were retrieved from a primary source, and Kendall's Tau-B and Spearman's correlation coefficient were used to process the study's data. It was found that, income level is a strong determinant of tax compliance behaviours in Sri Lanka. While a strong positive correlation was found between voluntary tax compliance and income level and also a strong negative correlation between enforced compliance and income level. Koumpias, Leonardo and Martinez-Vazquez (2020) conducted a research, to examine the impact of trust in government on tax morale globally. The research relied on secondary world values survey cross country data from 92 countries between 1981 and 2014. Logit regression model was used to analyse the study's data. It was found that trust in government has a significant positive impact on tax morale. While public institutions that produces output such as public goods and services have more impact on tax morale than public institutions that produces input such as laws and government policies. Using panel data to examine tax compliance behaviour , particularly when a variable in all the countries are not moving in the same direction, may lead to the presence of outliers, which may affect the reliability of the result.

3.0 Methodology

The essence of this study is to test hypothesis about the statistical relationship between the dependent and the independent variables, from the data obtained from a survey. Therefore this study selected a survey research design as its research design. The population of this research, is the number individual registered personal income taxpayers in Kaduna State, according to a record from Kaduna State Internal Revenue Service (KADIRS), as at 31st December, 2022, there are 662,000 registered individual taxpayers. Therefore the population of the study is 662,000 individual registered taxpayers. With a view to obtain the statistical required sample size, that will enable a good representation of the study population and making an accurate inferences about the parent population, the study employed Krejcie and Morgan (1970) method of sample size estimation.

The method is given as:
$$S = X^2 NP (1 - P) \div (e^2 (N - 1) + X^2 P (1 - P))$$
S = required sample size
X^2 = the table value of chi-square for one degree of freedom at the desired confidence level is 3.841
N = the population size of the study = 662,000
P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size)
e = the degree of accuracy expressed as a proportion (0.05)
 S = 383.88
Therefore the research sample size is approximately 384 respondents.
In an attempt to ensure the possible maximum efficiency and accuracy of the outcome of this research, Cluster Sampling Method was selected as the study's sampling technique. The intention of this selection, is to ensure that all the members of the population, who are geographically dispersed are adequately drawn, so as to improve the reliability and accuracy of the study's findings.

There are three senatorial zones in the state, therefore, three clusters were considered for the purpose of the research. The clusters are Kaduna, Kafanchan and Zaria representing zone 2, zone 3 and zone 1 respectively. The questionnaires allocated to each cluster is determined by the number   of registered taxpayers in each cluster.

The study's data were retrieved from a primary source, which were collected through questionnaires, which were distributed to registered personal income taxpayers. The employment of primary data source was necessitated by the desire of the study to get information directly from the taxpayers, who their voluntary compliance is required.

Employment of primary survey data is very common in tax compliance researches, due to inadequate or lack of data on tax compliance behaviours in many tax jurisdiction. Tax authorities and international organisations such as United Kingdom, Switzerland, and Organisation for Economic Cooperation and Development among others used primary survey data to study tax compliance behaviours.

3.1 Theoretical Framework

The study employed the Slippery Slope Theory (SST) as it, theoretical base. The theory was chosen due to its relevance to the study's model. The theory captured all the study's variables. The theory required the incorporation of all the study's variables in a single model. The model of the study comprises both economic (such as income and enforcement probability) and social variables such as public confidence in government and corruption perception. The SST was propounded by Kirchler, Hoelzt and Wahl in 2008 , and it was intensively discussed under theoretical literature of this study, the theory claimed that tax compliance behaviour of an individual is influence by both economic and social factors, therefore tackling non-compliance behaviour requires the employment of both economic measures (such as enforcement by imposition of fine and penalties on tax evaders) and sociological measures (such as good governance, which include transparency, accountability, and respect to citizen among others). The theory felt that utilisation of either measures will lead to a compliance level below the maximum level. Therefore both measures have to be used simultaneously so as to achieve maximum tax compliance level in an economy.
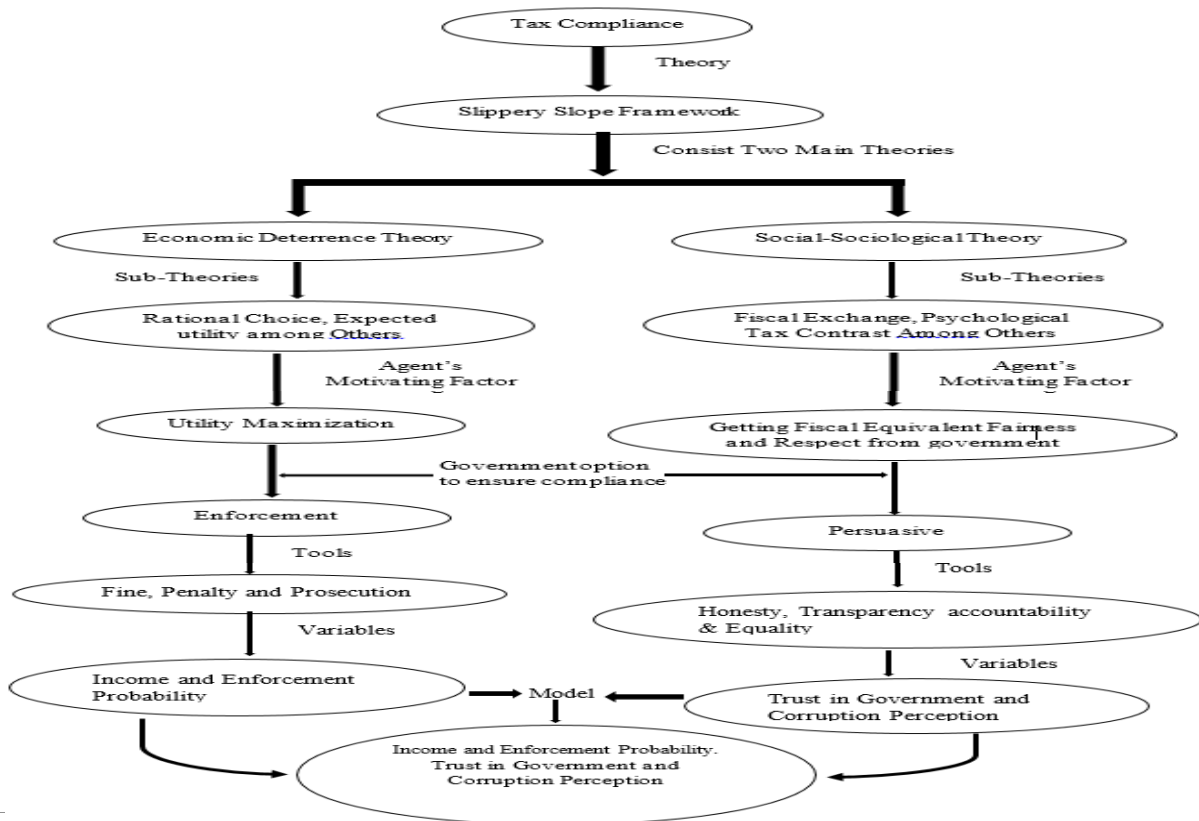
3.2 Technique of Data Analysis

As a result of presence of heteroskedasticity in the data, in addition to the nature of the study's variables and data, the employment of Weighted Least Square (WLS) regression model as the technique of data analysis is necessary. The WLS regression model is an important reliable technique for the determination and analysis of causal relationship between dependent and independent variables, especially, when the data is cross sectional and the variance of the error terms is not constant. The WLS regression model, has further capacity of removing heteroskedasticity and other problems associated with cross sectional data and will lead to the production of best and efficient estimators.

3.3 Model Specification

$$TC = f(IL, PC, TE \text{ and } TK) \hspace{4cm} 1$$

Most of the behavioural economics models are non-linear, for example, utility function .Yaniv (2009), conducted a study, which proved that tax compliance model is non-linear, and its graph is downward slopping from left to right and convex to the origin as a result of diminishing marginal rate of substitution between tax compliance and tax non-compliance appetite. The shape of the curve is similar to the shape of Indifference Curve, which it models are usually in multiplicative form, for example; $U = AX^a Y^b$

$$TC = B_0 IL^{B1} PC^{B2} TE^{B3} TK^{B4} \hspace{3cm} 2$$

$$InTC = B_0 + B_1 InIL + B_2 InPC + B_3 InTE + B_4 InTK \hspace{1.5cm} 3$$

$$wInTC = B_0 + wB_1 InIL + wB_2 InPC + wB_3 InTE + wB_4 InTK \hspace{1cm} 4$$

$$InTC = b_0 + b_1 InIL + b_2 InPC + b_3 InTE + b_4 InTK \hspace{1.5cm} 5$$

$$InTC = b_0 + b_1 InIL + b_2 InPC + b_3 InTE + b_4 InTK + InE_i \hspace{1cm} 6$$

Where TC = Tax compliance rate.

IL = Represent the income level of the respondents.

PC = Public confidence in government.

TE = Tax enforcement.

TK = Tax knowledge.

E = Error term.

3.3.1 Variable Measurement

Table 1: Variable Measurement

S/no	Variable	Measurement
1	Tax Compliance (TC)	This represents the amount of money that, the respondent claimed he paid as Personal Income Tax in 2021 calendar year.
2	Income Level (IL)	This represent the income earned by the respondent in 2021 calendar year, as claimed by the respondent.
3	Tax Knowledge (TK)	This represent the respondent basic Personal Income Tax Knowledge. The respondent was asked seven (7) questions with respect to Personal Income Tax, which the study feels are basic. The number of questions that the respondent correctly answered represent his tax knowledge for the purpose of the study.
4	Public Confidence in Government (PC)	This represent the respondent level of satisfaction about the efforts of Kaduna State Government in discharging its constitutional responsibilities. The respondent was asked to rank his satisfaction from lowest one (1) to the highest ten (10).
5	Tax Enforcement (TE)	This represent the respondent perception about the possibility of imposing necessary sanctions against him, if his tax evasion tactics was detected by the Kaduna State Internal Revenue Service (KADIRS). The respondent was asked to rank the perception from lowest one (1) to the highest ten (10).

3.3.2 Apriori Expectation

Below Table provides summarized explanation with respect to the expected direction of each of the independent variables of the study on the dependent variable and the theory that underpinned the direction.

Table 2: Aprior Expectation

S/no	Variable	Expected sign(s)	Theory
1	Public confidence in government (PC)	Positive	Slippery Slope Theory suggested a positive relationship between CP and tax compliance rate. If public confidence in government is high, citizens tax compliance behaviour will improve, even if the amount of public services receives is less than the taxes paid, because the see tax payments as a contribution for common good.
2	Probability of tax enforcement (TE)	Positive	Slippery Slope Theory suggested a positive relationship between tax enforcement and tax compliance behaviour.

4.0 Presentation and Analysis of Result
Even though the required sample size of this study is 384 respondent, with a view to increases the efficiency and reliability of the study, 1,000 copies of questionnaires were distributed, 682 copies were returned and 523 copies were analysed.

4.1 Pre-Estimation Test

4.1.1 Multicollinearity: Variance Inflation Factors Test

Multicollinearity is a situation where two or more independent variables are highly and significantly correlated. Presence of multicollinearity will increase the size of an error term of a regression coefficient, and this may undermine the significance of an independent variable. Variance Inflation Factor (VIF) Test was employed to determine the presence or otherwise of multicollinearity. The decision rule is that, if Centered Variance Inflation Factor (CVIF) of a variable is greater than 10, then there is a presence of multicollinearity, otherwise multicollinearity do not exist.

Table 3: Variance Inflation Factor Result

Variable	Coefficient Variance	Uncentered VIF	Centered VIF	
C	2.302094	231.1083	NA	
LOG(IL)	0.00866	210.8591		1.123024
LOG(PC)	0.065775	12.55344		1.554475
LOG(TE)	0.081149	6.726564		1.480426
LOG(TK)	0.037972	5.596235		1.010811

Author's Computation 2023, from eviews 10.0

Since the centered VIF value of each of the four variables is less than 10, then the study confirmed that multicollinearity is not presence in the study's model, therefore the model is free from the problem of multicollinearity.

4.1.2 Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity is a situation where the variance of error terms is not constant. Even though a presence of heteroskedasticity will not affect the biasness of a regression estimator, however will be standard error is wrong, which may affect the reliability and efficiency of the regression outcome.
 Breusch-Pagan-Godfrey Test was employed to determine the presence or otherwise of heteroskedasticity. The decision rule is that, if probability value of the Chi-square is less than 0.05 then, there is a presence of heteroskedasticity, otherwise it do not exist.

Table 4: Breusch-Pagan-Godfrey Test: OLS Regression Model

F-statistic	52.02914	Prob. F(4,518)	0.0000
Obs*R-squared	149.9001	Prob. Chi-Square(4)	0.0000
Scaled explained SS	125.3863	Prob. Chi-Square(4)	0.0000

Author's Computation 2023, from eviews 10.0

The output of table 4, was generated from an OLS estimation of the study's model two, since the probability value of the Chi-square is 0.0000, which is less than 0.05, then the study confirmed the presence of heteroskedasticity.

Table 5: Breusch-Pagan-Godfrey Test: Weighted Least Squares Regression Model

F-statistic	59.65241	Prob. F(4,518)	0.1621
Obs*R-squared	164.9369	Prob. Chi-Square(4)	0.2421
Scaled explained SS	206.6419	Prob. Chi-Square(4)	0.0764

Author's Computation 2023, from eviews 10.0

The result of table 5 was generated from the regression result of a Weighted Least Squares Regression Model. The Weighted Least Squares Regression Model was employed with a view to remove the heteroskedasticity. Since the probability value of the Chi-square greater than 0.05, therefore the study confirmed that, the study's data is homoscedasticity and the problem of heteroskedasticity earlier detected was removed.

4.2 Presentation and Analysis of Weighted Least Square Result

Table 5: The Weighted Least Square Result

Dependent Variable: LOG(TC)

Included observations: 523

Weighting series: PC^(-0.5)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.2260	1.7719	-4.6424	0.0000
LOG(IL)	-0.4874	0.1106	-4.4050	0.0000
LOG(PC)	4.4949	0.2452	18.3341	0.0000
LOG(TE)	2.5363	0.30739	8.250955	0.0012
LOG(TK)	0.8859	0.220439	4.018884	0.0501
R-squared	0.6429	F-statistic		233.1424
Adjusted R-squared	0.6401	Prob(F-statistic)		0.0000
Akaike info criterion	2.1012	Durbin-Watson stat		2.0104

Author's Computation 2023, from eviews 10.0

The coefficient of the variable income level (IL) is -0.4874, this indicates a negative relationship between income level and tax compliance behaviour in Kaduna State Nigeria. Moreover, if the income level increased by 1 percent, then personal income tax compliance level will fall by 0.4874 percent. The probability value of the variable's coefficient is 0.0000, which is less than 0.05, this is a confirmation that, the influence of income level on1 personal income tax compliance rate in Kaduna State Nigeria is statistically significant. This result is supported by Expected Utility Theory (EUT), which postulates a negative relationship between income level and tax compliance behaviour. Moreover, empirical studies conducted by Abdallah and Usman (2018) and Kefas (2019) each found a negative relationship between income level and tax compliance behaviour in Kaduna and Taraba State Nigeria respectively.

The coefficient of the variable public confidence in government (PC) is 4.4949, this implies a positive relationship between public confidence in government and tax compliance behaviour in Kaduna State Nigeria. Moreover, if the public confidence increased by 1 percent, then personal income tax compliance level will also increase by 4.4949 percent. The probability value of the variable's coefficient is 0.0000, which is less than 0.05, this is a confirmation that, the influence of the public confidence on personal income tax compliance rate in Kaduna State Nigeria is statistically significant. The negative hypothesis claiming that, public confidence in government has no statistical significant impact on personal income tax compliance rate in Kaduna State Nigeria, is therefore rejected. This finding is supported by Psychological Tax Contract Theory (PTCT), which postulates a positive relationship between the public confidence and tax compliance behaviour. In addition, empirical studies conducted by Abdul-Rashid et al (2021), Koumpias, Leonardo and Martinez-Vazquez (2020), Batrancea, et, al. (2019), Lisi (2019), Kamasa, Adu, and Oteng-Abayi (2019), Otindo (2019) and Ngozi (2021), each found a positive relationship between public confidence in government and tax compliance behaviour in Malaysia, 92 countries, 44 nations across five continents, Italy, 29 Sub-Saharan African countries, Kenya and Anambra State Nigeria. This result is implying that, if the public confidence fall by just percent, tax compliance rate will fall by about 4.5 percent.

The coefficient of the variable tax enforcement (TE) is 2.5363, this implies a positive relationship between tax enforcement and tax compliance behaviour in Kaduna State Nigeria If the tax enforcement rate increased by 1 percent, personal income tax compliance level will increase by 2.5363 percent. The probability value of the variable's coefficient is 0.0000, which is less than 0.05, this is a confirmation that, the influence of the tax enforcement on personal income tax compliance rate in Kaduna State Nigeria is statistically significant. The negative hypothesis claiming that, tax enforcement has no statistical significant impact on personal income tax compliance rate in Kaduna State Nigeria, is therefore rejected. This finding is supported by Expected Utility Theory (EUT), which postulates a positive relationship between the public confidence and tax compliance behaviour. Moreover, empirical studies conducted by Abdul-Rashid et al (2021), Mathew (2020), Oyewole (2022), Oladele,Ndalu, and Micah,(2021) and Nura (2019) each found a positive correlation between tax enforcement and tax compliance rate in Malaysia, Uganda, Ogun State Nigeria , Nigeria and Yobe State Nigeria respectively. This finding implies that, if the ability of Kaduna State Internal Revenue Service to enforce the provisions of the relevant tax laws falls by 1 percent, then personal income tax compliance behaviour will fall by 2.54 percent.

The coefficient of the variable tax knowledge (TK) is 0.8858, this implies a positive relationship between tax knowledge and tax compliance behaviour in Kaduna State Nigeria. Moreover, if the tax knowledge increased by 1 percent, then personal income tax compliance level will increase by 0.8859 percent. The probability value of the variable's coefficient is 0.0501, which is more than 0.05, this is a confirmation that, the influence of tax knowledge on personal income tax compliance rate in Kaduna State Nigeria is statistically insignificant. A positive relationship between tax knowledge and tax compliance behaviour was postulates by Psychological Tax Contract Theory. Moreover, this kind of relationship was supported by a study conducted by Deyganto (2018), Nura (2019), and Ahmed (2018) in Ethiopia, Yobe State Nigeria and Kaduna State Nigeria. Tax knowledge can be used to improve tax compliance or tax evasion behaviour, all depending on the honesty, social, economic and political grudges of the taxpayer.

Moreover, the F-statistics value of the model is 233.1424, with a corresponding P.Value of 0.0000. This confirms that the combination of all the variables of the model are statistically significant in explaining tax compliance behaviour in Kaduna State Nigeria. The model's result is supported by Slippery Slope Framework Theory. The R-Squared of the model is 0.6429, this explained that, the study's model has the capacity to explain 64.29 percent variation of tax compliance behaviour in Kaduna State Nigeria. In addition Akaike information criterion and Durbin-Watson statistics, they all implies that the study's model is good.

4.3 Post Estimation Test

The essence of this sub-chapter is to conduct some diagnostic tests, with a view to further confirm the reliability and efficiency of the study's model.

4.3.1 Stability and Specification Diagnostic Test: Ramsey Reset Test

This test was conducted with a view to ascertain, whether the study's models were well specified, mis specification error may affect the stability and reliability of any regression model. Therefore the Ramsey Reset test was conducted to confirm the stability of the study's models or otherwise.

Table 6: Ramsey Reset Test

Ramsey RESET Test
Specification: LOG(TC) C LOG(IL) LOG(PC) LOG(TE) LOG(TK)
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	8.831578	517	0.0821
F-statistic	77.99676	(1, 517)	0.0731
Likelihood ratio	73.48835	1	0.4216

Author's Computation 2023, from eviews 10.0

The probability value of t-statics, F-statistics and likely-hood ratio of the test, are 0.0821, 0.0731 and 0.04216 respectively, which are all greater than 0.05, consequently the null hypothesis claiming that, the study's model is well-specified is therefore accepted. This mean that the study's model is stable.

5.0 Conclusion and Recommendation

This study concluded that, income level, public confidence in government and tax enforcement are important determinants of personal income tax compliance behaviour in Kaduna State Nigeria.
In view of the study's findings, the following recommendations were proposed to the Kaduna State Government and Kaduna State Internal Revenue Service (KADIRS) with a view to improve personal income tax compliance rate in the state. The Kaduna State Internal Revenue Service (KADIRS), should review it efforts and strategies of making sure that, every

taxable persons in the state is paying the tax based on his level of income, and in line with the provisions of the relevant tax laws and regulations, with a view to change the negative relationship between the income level and the compliance rate to a positive one.The Kaduna State Government and all its relevant agencies should enhance their level of transparency and accountability, with a view to reduce the level of corruption perception and improve the level of public trust in the government, in order to improve tax compliance rate in the state. The Kaduna State Internal Revenue Service (KADIRS), should enhance her efforts of enforcing compliance with the relevant provisions of tax laws and regulations in the state. The state government should also, doubled her financial and political support to the KADIRS, in order to maximise compliance with the provisions of the relevant tax laws and regulations in the state

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