



# **EXPLORING ROAD TAX IN CUSHIONING THE EFFECTS OF DOWNPLAYING REVENUE GENERATION IN SOUTH WESTERN STATES, NIGERIA**

**Adebite, Tajudeen Adejare<sup>1</sup> & Azeez Bolanle Aminat<sup>2</sup>**

<sup>1</sup>Department of Accounting, Al-Hikmah University, Ilorin  
Kwara State, Nigeria

<sup>2</sup>Department of Finance, Ekiti State University,  
Ado-Ekiti, Ekiti State, Nigeria

<sup>1</sup> & <sup>2</sup>Emails: [adetajud@yahoo.com](mailto:adetajud@yahoo.com); [aminaotulana@yahoo.com](mailto:aminaotulana@yahoo.com)

## **ABSTRACT**

Most of the residents in Nigeria trivializes with roads tax because of nonchalant attitude of state to collect this tax. Even, some state considered it as irrelevant to the revenue of the state due to the facts that income realized on daily basis from road tax are minute compare to other taxes. This study examined the effect of road tax on revenue generated by southwest state in Nigeria from 2010 to 2019. It employed panel data through fixed and random model to analyze the data collected from respective state board internal revenue from 2010 to 2019. Findings show that all variable have positive significant effect on revenue generated in all the states sampled in Nigeria. An increased in road tax significantly, statistically and positively influence influx in revenue generated by all the sampled state. In conclusion road tax has positive significant impact on revenue generation. This exposed that income realized from road tax upsurge revenue generation among selected state in Nigeria. It is advocated that much efforts should be expended by government to check the road tax evasion so as to upsurge revenue generation for effective fulfillment of government responsibilities.

**Keywords:** Revenue, Taxation, Nigeria, Road tax, South Western States

## **1. INTRODUCTION**

During the recession, the unavoidable and pertinent lesson taught from the recession by both the federal government and state government was to look inward on the varieties of generating revenue for sustainability on both recurrent and capital expenditure. It was then that varieties of revenue generation emanated from



each state. Some state developed and amplified the existing revenue source in the state. Road tax, especially, has been magnifying by all the state in Nigeria for the purpose of fulfilling their responsibilities as the controller of state within their purview. Road tax has been redesigned to reduce or minimize tax evasion in terms of collections, administration and monitoring so that the revenue realized are magnified to offset anticipated responsibilities by the government. Road tax (also called motor vehicles tax) is levied on the basis of numerous factors which include seating capacity, engine capacity, cost price and unladen weight. Each state with different regulations and rules in charging road tax in Nigeria which also includes registration of a motor vehicle, that is every motor vehicle brought into Nigeria, other than temporarily by a visitor, must be registered with state inland revenue within thirty (30) days arrival in the country.

Road taxes may affect people's resolutions on the kind of vehicles, maintenances, and expected cost to be expended. This is imperative because motoring ignites increment in social costs which are not reflected in purchase prices of the vehicle such as services, congestion, maintenances, air pollution, accidents, gas emissions, and noise. Clever-designed Road taxes can be employed to sway these behaviours and lessen social costs connected with driving.

The pertinent responsibility of any component of tax is to upsurge revenue generation in such state (Ogbodo & Nweze, 2021). For decade ago, road tax has been neglected in many states because of crude oil proceeds disbursed to the state by federal government. Many road users have been circumventing the payment of road tax while some road users did not even register their car and motorcycle which has been on the road for many years. Also, most of the residents in Nigeria trivializes with roads tax because of nonchalant attitude of state to collect this tax. Even, some state considered it as irrelevant to the revenue of the state due to the facts that income realized on daily basis from road tax are minute compare to other taxes. But recently, to circumnavigate, minimizes or eradicate road tax evasion, because of paucity of crude oil proceeds, automated registration and renewal of the vehicle license has been invested in which it is difficult for the road users to evade road tax. Automated registration and renewal of the vehicle had also assisted in several areas such as vehicle owner's security, and disengagement of parochial data processing system. With the current development in collecting road tax by the state government in Nigeria, the notion in mind in this study is to gauge the significance of the road tax on the revenue generation in south western states, Nigeria.

## **2. LITERATURE REVIEW**

### **Road Tax Administration in Nigeria**

Road tax refers to a tax compulsory paid on wheeled vehicles using public roads. All states require an annual registration fee for vehicle owners in order to permit the usage of such vehicle on roads. The road tax levy varies from state to state which depends on vehicle kinds, and also based on the capacity, engine, and categories of vehicle. These categories of vehicle are passenger cars, taxis, lorry, truck, bus, motorcycle, tractors, van and tricycle. Annually, the vehicle owners, which based on engine displacement, and manufactured years, pay annual road tax to government so that their contribution are felt by the government for effective discharge of fiscal roles. In Nigeria, the states collect annual vehicle road tax which possesses fixed rate on vehicle categories as determined by each state. This tax is payable to revenue collectors in different ways which include

- Vehicle registration tax which is encompassed in the new motor vehicle's retail purchased price
- Motor vehicle imported from abroad which is taxed by the government and paid by the owner applying for registration.

The Nigerian law has compulsory all vehicles (trucks, cars, tricycle, and motorcycle) that use Nigerian roads to get their vehicle registered for easy tracking of owners of the vehicles.

### **Vehicle Registration Procedure in Nigeria**

The car owner of the vehicles must possess all the required documents such as purchase receipt, and custom duties papers for the vehicle registration process in Nigeria, and then process to fill the application form online which has to do with the following procedure:

- a. Online registration form (MVA01) is to be filled and completed on visit the Federal Road Safety Corp National Vehicle Identification
- b. Completed form must be printed and attached with relevant vehicle documents
- c. Proceed to State Board of Internal Revenue (SBIR) or Motor Licensing Authority (MLA) office to collect allocation of number plate form, Number plate Tag, CMR and Police clearance. Payment for vehicle number plate should be done at SBIR/MLA.
- d. After that, vehicle must be taken to Vehicle Inspection Office (VIO) for physical assessment and Roadworthiness certificate collection, if it is satisfied by VIO officer.

- e. After that, the vehicle owner proceeds to Road safety for documents' verification. The vehicle documents to be verified are Driver's License such as Insurance Policy Number, Means of Identification, and Proof of Address (e.g. Utility Bill). After due scrutiny and verification, the document will be forwarded to the police in the unit to confirm and assent the documents with official stamp. Thereafter, certain amount will be instructed by the officer saddled with registration of number plate to pay into the bank, and proceed for registration.
- f. After the fulfillment of the payment in bank, proof of Ownership Certificate (POC), Vehicle Identification Tag (VIT), and Vehicle Number Plate will be issued to the vehicle owner. Original documents earlier collected by the government representative must be returned to the owner.
- g. Lastly, car insurance is also important which is in two forms that is Comprehensive Auto Cover and Third-Party Auto Insurance Policy (TPAP) in order to safeguard the owner against future risk. TPAP is always done by the insurance company to safeguard car owners from future losses that may be caused while driving on others.

## **Government Revenue**

Government revenue refers to income realized by the government from different varieties like government monthly allocation, grant, privatization, crude oil disposal, and tax revenue. Revenue are extracted from varieties sources like taxes from individuals, private organization, and trade, revenue from foreign aid, and royalties from natural resources. Tax revenue is seen as income forcefully collected from income, profits, goods and services, payroll taxes, ownership, and disposal or transferred property (Adegbite, 2020). It can also be perceived as the income gained or realized by the government through taxation. This taxation revenue has been considered as the primary and the pertinent income source for the state. Total tax revenue as a ratio of GDP specifies the country's output share that is realized by the state through taxes such as road tax, PIT, direct assessment, capital gained tax, corporation tax, stamp duties just to mention few. It can also be regarded as one the parameters of the extent in which the government superintend economy's resources. This revenue can be utilized to control the affair of the country in terms of employment generation, economic stability and growth and development of neglected area of economy. It is therefore hypotheses as:



*H<sub>01</sub>: Road tax has no significant impact on Revenue generated by South Western states of Nigeria*

*H<sub>02</sub>: PAYE has no significant impact on Revenue generated by South Western states of Nigeria*

*H<sub>03</sub>: Direct assessment has no significant impact on Revenue generated by South Western states of Nigeria*

## **Theoretical Review**

### ***The benefits-received theory***

Benefits-received theory speculates that there is principally a contractual and exchange relationship between taxpayers and government. The state make available specific goods and services to public in which the taxpayers have to contribute to the state purse in the proportion to the benefits received. Government provide public goods and services in which construction of roads is among. This road which has been plying by the road users (vehicle owners) needs periodic maintenance from government ends. This can be supported by the revenue realized from road tax which are payable by the road users. This theory further states that taxpayers must also make available funds in terms of tax to assist the government as the replenishment of services benefited from government. But this theory failed to display the issues of equitable distribution of income and wealth but considers the benefit received as a parameter to distribute tax burden. It is also failed to displaying the varieties of implementing tax policy for the attainment of economic growth and stabilization in the affected states (Adegbite, 2021).

### ***The cost-of-service theory***

Cost of service theory is benefits-received theory alike in which it emphasizes that there is semi- commercial connection between taxpayers and state to a greater extent. According to this theory citizen is not entitled to any benefits unless tax has been paid. Government is mandated to provide welfare functions, protection, and other social amenities like roads in the state in which taxpayers are to pay in returns. In the process, but this theory failed to display the issues of equitable distribution of income and wealth. No effort is being displayed to improve income distribution (Adegbite, 2020).

This study harnesses on the benefits-received theory and cost of service theory because of the pertinent contractual relationship that existed between taxpayers and



the state. The state constructs road to the citizens, and citizens pay tax in returns to support the government to fulfill their responsibilities (Adegbite, 2020).

### **Empirical Review of Related Studies**

Samuel and Tyokoso (2014) assessed taxation effect on Nigeria revenue generation. Special consideration were given to selected states and FCT. The study highlighted the concept, nature, objectives, and taxation classification of taxes. It was also extended to other pertinent taxation issues such as major taxes in Nigeria. To fully achieve the study objective, both primary and secondary sources were involved with adoption of regression analysis. They discovered positive significant contribution of taxation on revenue generation in selected states and FCT but limited by tax evasion and avoidance. They further recommended that stringent punishment should be expended on corruptive personnel, and those whoever circumvent the payment of taxation irrespective the prominent such defaulters are in order to serve as detriment to others. However, this study did not singlehandedly expose the effects of road that on tax revenue in which this study specifies.

Aminu and Eluwa (2017) examined tax reform impact on Nigeria revenue generation. The study examined the tremendous contribution of personal income tax, custom duties and company tax on Nigeria total revenue collection. Schaffer's multiple techniques of comparison and variance method analysis were utilized to analyse tax reform impact on Nigeria revenue generation. It was emphatically discovered that tax reform impact was significantly visible on Nigeria revenue generation. Nonetheless, tax reform impact was investigated on revenue generation, but not extended to road tax.

In another study, Adegbite (2017) examined Personal income tax effect on Oyo state revenue generation from 1990 to 2015. PAYE and other data were discovered in Oyo State government approved budgets from 1990 to 2015. PPMC and multiple regressions were utilized to determine the relationship amid Revenue Generation in Oyo State PAYE, Road Tax, Capital Gain Tax, and Other Taxes. Findings decreed that PAYE, Road Tax, and Other Taxes had positive significant effect on Oyo state Government Revenue. The study in its outcomes recommended that government of Oyo state should examine further on increment of internal revenue so as to minimize inadequate income in the state. This study was categorically examined PAYE but policy on this study cannot be strengthened to road tax.

Fasina, Adegbite and Alabi (2018) in their study evaluated personal income tax effect on internally generated revenue (IGR) of Ekiti state government. Ekiti State



components of IGR was also identified to analyze the relationship that ignited between Ekiti state government revenue and personal income tax. Data such as PAYE, Road Tax, Direct Assessment, and government development stock, Other Revenue, and Government Expenditure from 2003 to 2012 were gathered through Ekiti state Board of revenue which were analyzed using Mean and standard deviation and multiple regression analysis technique. Findings indicated that PAYE, Direct assessment and Road tax had positive significant effect on Ekiti state Revenue generation. Strict enforcement on personal income tax should be embarked so as to discover more taxable entity into the tax net so that it will enhance revenue generation in the state were recommended by this study. But this study was restricted to one state in south west as different to this study.

Emmanuel (2018) ascertained tax administration effect on Gombe state revenue generation. Primary data were collected and analyzed with descriptive statistics. The study further involved Cronbach's Alpha for instant reliability of questionnaire. After testing Three Hypotheses with Pearson correlation, linear regression and Spearman's Rank correlation, it was established that the state tax Administration inefficient and ineffective. The study further revealed divulged that state generated revenue is absolutely low to fulfill its objectives because of inadequate tax payers' enlightenment and persistent tax evasion and avoidance. The study recommended, among others recommendations, that Gombe state government with state board should embark tax enlightenment campaign on the essence of paying tax, and tax personnel should be motivated so as to boost up their efficiency and their service quality. Nevertheless, the study was confined to Gombe state which is one of Northern state in Nigeria but was not on southwestern states.

Neway, Kenenisa and Woldemicael (2018) examined Ethiopia tax revenue determinants from 1999 to 2016. Multiple regression and descriptive statistics were using to analyse time series data collected through concerned bodies. It was discovered that industry sector, trade openness and per capita income had positive and significant effect on tax revenue. But agriculture sector inflation rate had negative significant effect on tax revenue in Ethiopia. This study emanated from Ethiopia in which the recommendation advocated cannot be implemented in Nigeria.

Olaoye and Ayeni (2019) gauged the relationship among value added tax, customs duties and Nigeria revenue generation. Granger causality tests, and autoregressive Distributed Lag (ARDL) were utilized to analyse data singularly sourced through FIRS from 2000 to 2016. Autoregressive Distributed Lag (ARDL) were used as the



estimation techniques. The findings revealed that there was absence of long-run correlation among value-added tax, and revenue generation. It was further revealed that causality did not emerge among value-added tax, customs duties, and revenue generation. But Olaoye and Ayeni (2019) failed to investigate the road tax effect on south western state revenue generation.

In the same vein, Ganyam, Ivungu and Anongo (2019) also examined tax administration effect on revenue generation but restricted their study to Benue state, Nigeria. Their study extended to reforms exhibited by tax administration of Benue state from 2015 to 2018. Data of 187 respondents were obtained through administered questionnaires Benue state staff of State Internal Revenue Service (BIRS). Descriptive statistic, T-test statistics, standard deviation and Mean were employed fully as data analyses tools. Findings discovered that electronic tax payment system improved Benue state tax accountability and revenue generation significantly. Ganyam, Ivungu and Anongo (2019) finally established that Benue state tax administration significantly enriched revenue generation. They recommended that Government should support and cooperate with relevant tax authorities for effective management of Benue state tax system for effective and desired output. However, this study was also confined to Benue state in North central, Nigeria.

Omondi (2019) also gauge custom and excise duties (CED) effects on Kenya economic growth from 1973 to 2010. According to the author, collection of CED revenues were inconsistent in Kenya. Wide gaps in the knowledge were caused by inadequate empirical literature in Kenya. Correlation research adopted displayed that there was correlation between custom and excise duties and revenue generation in Kenya. This study was also limited to Kenya, therefore CED policy making was not transferable to Nigeria road tax.

Wadesango, Bizah and Nyamwanza (2020) examined the viability and impact of tax amnesties on tax compliance improvement of SMEs and Zimbabwe tax revenue realization. Quantitative method was employed to launch the connection between tax compliance and tax amnesties. The drawn sample population from SMEs in the Region of ZIMRA. Multivariate regression model was adopted to gauge connection between tax compliance and tax amnesty. The results, after thorough analysis divulged inverse relationship and connection between tax compliance and tax amnesty. However, the policy galvanized in this study cannot be effectively utilized because the study was strictly done in Zimbabwe.





Ogbodo and Nweze (2021) established Tax Revenue effect on Economic Development in Nigeria from 2000 to 2019. Pertinent data were realized from FIRS CBN, Statistical Bulletin, and World Bank. Ordinary Least Square (OLS) method, Granger Causality test were adopted as analytical tools. The study established that petroleum profit tax and companies’ income tax had significant positive effect on economic development of Nigeria. Government of Nigeria are advised to underpin strengthen supervisory, transparency practices and public financial management reforms, and, increase tax administration to combat tax evasion. This study, however examined tax revenue on economic development.

The literature gaps discovered was that road tax collection has lacked effective implementation and administration in the world not to talk of Nigeria alone. Extant literatures on road tax are scanty in the world but not visible in Nigeria. Therefore, this study exploits the opportunity to widely publicize the impact of road tax implementation and administration, collection to south western states’ revenue in Nigeria.

### **3. METHODOLOGY**

This study examined the effect of road tax on revenue generated by Southwest State in Nigeria from 2010 to 2019. The dependent variable or endogenous variable is total revenue, which is a macro-economic variable proxied by total revenue generated by each state in quarter, that is total revenue generated by six (6) south western states, while the independent variables are road tax, PAYE, direct assessment and other taxes. Panel data through fixed and random model are employed to analyze the data collected from respective state board internal revenue and national bureau of statistics from 2010 to 2019.

#### **Model Specification**

Total revenue generated by six states in quarter is regarded as dependent variable while the independent variables are road tax, PAYE, direct assessment and other taxes. The implicit mathematical model that expresses the effect of road tax on revenue generation as prescribed by the revenue variables (TR) are expressed as:

$$TR = f(RT, DA, PAYE, OTHS \text{ uit}) \dots\dots\dots(1)$$

#### **Fixed Effect Model**

This is explored to examine the connection amid predictor (independent variables) and dependent variable within an employed entity. Therefore, it is stated as:



$$TR_{it} = \beta_1 RT_{it} + \beta_2 DA_{it} + \beta_3 PAYE_{it} + \beta_4 OTHS_{it} + \alpha_i + u_{it} \dots\dots\dots(2)$$

When binary variable is involved, it becomes

$$TR_{it} = \beta_0 + \beta_1 RT_{it} + \beta_2 DA_{it} + \beta_3 PAYE_{it} + \beta_4 OTHS_{it} + \alpha_i + \beta_k X_{k,it} + TR2E2 + \dots + TRnEn + u_{it} \dots\dots\dots(3)$$

It should be noted that equation (2) and 3 are equivalents:

When time is added it becomes

$$TR_{it} = \beta_0 + \beta_1 RT_{it} + \beta_2 DA_{it} + \beta_3 PAYE_{it} + \beta_4 OTHS_{it} + \dots + \beta_k X_{kit} + TR2E2 + \dots + TRnEn + \delta_2 T_2 + \dots + \delta_t T_t + u_{it} \dots\dots\dots(4)$$

### Random Effects Model

The rationale involved in random effects model is that the difference across all entities is presumed to be random and uncorrelated with the independent variables involved in the model

Random effects model is stated as:

$$TR_{it} = \beta_1 RT_{it} + \beta_2 DA_{it} + \beta_3 PAYE_{it} + \beta_4 OTHS_{it} + \alpha_i + u_{it} + \epsilon_{it} \dots\dots\dots(5)$$

Where;

i = State, t = time,  $\beta_k$  is the coefficient,  $u_{it}$  is the error term, En is entity (State) n. if binary (dummies) n-1 entities included in the model.  $\gamma_2$  is coefficient for the binary regressor (entities).  $T_t$  is time as binary variable (dummy), so, t-1 is time periods while  $\delta_t$  is the coefficient for the binary time regressor.

The basis for employing panel data through fixed effect model and random effects model is that the data collected are quarterly data which is not limited to a state but incorporated six states which emanated from southwest, Nigeria. That is, the data collected are the combination of cross sectional and time series data.

- TR - Total revenue generated,
- RT - Road tax,
- DA - Direct assessment
- PAYE - Pay as you earn.
- OTHS - Others

#### 4. RESULTS AND DISCUSSION

**Table 1**  
**Descriptive Statistics on the Effect of Road Tax on Revenue Generated By Southwest State in Nigeria**

	LDA	LOTHS	LPAYE	LRT	LTR
Mean	19.61853	20.47680	22.02980	18.85015	22.70807
Median	19.21005	20.55721	21.66472	18.55587	22.44819
Maximum	22.37801	23.61414	25.13199	21.89014	25.45948
Minimum	15.02369	16.36889	17.59732	14.54953	18.41642
Std. Dev.	1.605955	1.797024	1.541292	1.515881	1.478993
Skewness	-0.074795	0.099979	0.263559	0.250488	0.130643
Kurtosis	2.684713	2.389708	3.454041	3.261464	3.141394
Jarque-Bera	0.517578	1.752869	2.057031	1.357195	0.375118
Probability	0.771986	0.416264	0.357537	0.507328	0.828980
Sum	2001.090	2088.634	2247.040	1922.716	2316.223
Sum Sq. Dev.	260.4881	326.1589	239.9336	232.0874	220.9295
Observations	102	102	102	102	102

Source: Researchers' Compilation (2021)

The descriptive statistics is presented in table 1 above with 102 observations. it shows that Total revenue (LTR) has the highest mean, median, maximum and minimum of 22.70807, 22.44819, 25.45948 and 18.41642 respectively followed by LPAYE, LOTHS, LDA and LRT. The distribution also shows that the variables LDA and LOTHS displays that kurtosis is below 3 (Platykurtic distribution) that is distribution is flat in relation to normal. The Jarque-Bera indicates the data normality distribution, probability as shown indicates that Jarque-Bera statistic greater than the observe value under the null hypothesis. It shows all variables are not distributed normally as all the Jarque-Bera values are greater than 0.05. Volatility rate was divulged by standard deviation shows the rate of the volatility of the variables has been reduced because the logarithms of the five variables have been taken and that is the reason the standard deviation of all the variables are less than 2. Skewness is a degree of distribution asymmetry. The negativity of one of the variables and positivity of the other four variables of the skewness figures of the lagged variables simply suggests the right tailed of the distribution.

**Table 2**  
**Correlation on the Relationship between Road Tax and Revenue Generated by Southwest State in Nigeria**

Variables	LTR	LRT	LPAYE	LOTHS	LDA
LTR	1.000000				
	-----				
LRT	0.3823	1.000000			
	0.0000	-----			
LPAYE	0.6341	0.5681	1.000000		
	0.0000	0.0000	-----		
LOTHS	0.4534	0.4838	0.5327	1.000000	
	0.0000	0.0000	0.0000	-----	
LDA	0.2049	0.4049	0.6658	0.7511	1.000000
	0.0000	0.0000	0.0000	0.0000	-----

Source: Researchers' Compilation (2021)

Table 2 presented the correlation ignited between TR and independent variables. It is shown from the analysis that all the independent variables has positive correlation which is significant with TR. There is absence of multicollinearity because none of the coefficient of the variable reached threshold of Multicollinearity which is 0.8. This advocates the existence of strong positive relationship between the regressor and independent variables.

**Table 3**  
**Summary of Unit Root Test**

TESTS	LDA		LOTHS		PAYE		LRT			
	At level	Prob.	At level	Prob.	At level	Prob.	At level	Prob.	At level	Prob.
<b>A</b>	-5.971	0.000	-3.484	0.000	-9.786	0.000	-12.01	0.000	-6.730	0.000
<b>B</b>	-3.677	0.000	-2.950	0.001	-5.721	0.000	-5.809	0.000	-3.757	0.000
<b>C</b>	36.43	0.000	31.951	0.001	49.856	0.000	29.028	0.004	41.569	0.000
<b>D</b>	35.99	0.000	38.149	0.000	52.984	0.000	33.776	0.001	29.069	0.004
<b>Remark</b>	1(0)		1(0)		1(0)		1(0)		1(0)	

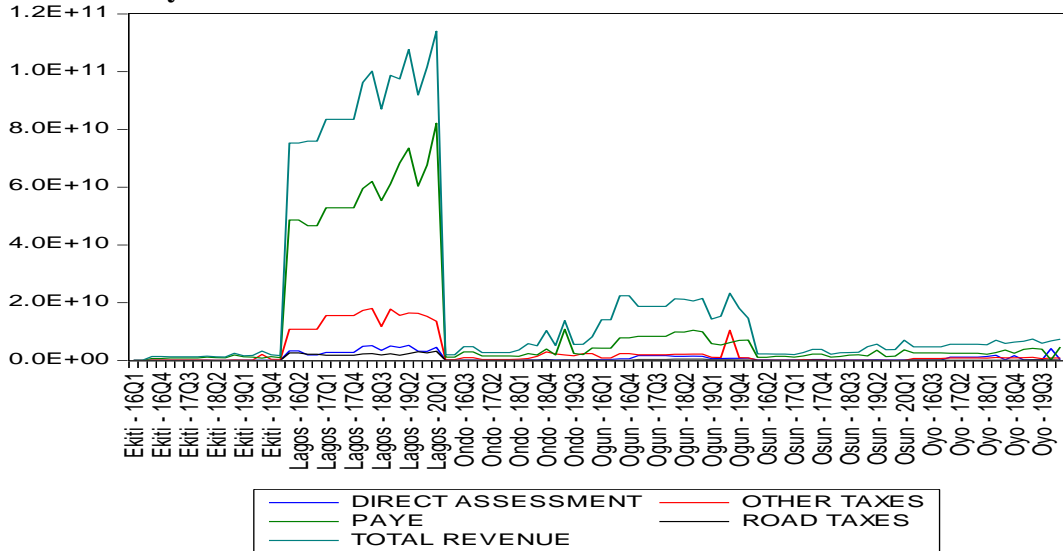
**A**= Levin, Lin & Chu t\*; **B**= Im, Pesaran and Shin W-stat; **C**= ADF - Fisher Chi-square; **D**= PP - Fisher Chi-square.

Source: Researchers' Compilation (2021)

The Table 3 above shows the summary of the Augmented Dickey-Fuller (ADF), unit root test of Levin, Lin & Chu t, and Im, Pesaran and Shin W-stat unit root were

used. The generated results from these tests advocated that stationary emerged in all variables at level.

### Trend Analysis



**Fig. 1:** Graph of the Trend Analysis

The graph of the trend of Road taxes (RT), Pay as you earn (PAYE), Direct assessment (DA), Other taxes (OT) and Total revenue (TR) of south western Nigeria states is shown in figure 1 above; the Y-axis shows the revenue while the X-axis shows the States and month. It is discovered that road tax has not been explored to cushion the effect of dwindling revenue in all the states in South West Nigeria. Lagos state realizes the highest revenue from road tax, PAYE, direct assessment and other taxes. Ogun state is the next state in internally generated revenue followed by Ondo state, Oyo state, Osun state and Ekiti state. PAYE is the highest source of revenue which is moving upward in all the states quarterly, and concurrently with the revenue of the each state in South West. Other taxes are also moving upward in line with revenue generation quarterly by each state as Shown with red colour but below the PAYE. Direct assessment is the next internal generated revenue which also significantly enhanced revenue of the state more than the road tax. Road tax has been the lowest income to the state according to the above Fig.1. This divulges that government in all the sampled states has not been effectively utilized road tax as the pertinent source of revenue to the state.

**Table 4**  
**Fixed Effect Model on the Effect of Road Tax on Revenue Generated by Southwest State in Nigeria.**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LRT	0.141771	0.054598	2.596636	0.0110
LPAYE	0.399045	0.044231	9.021768	0.0000
LDA	0.176138	0.032288	5.455204	0.0000
LOT	0.159112	0.040781	3.901599	0.0002
C	4.531109	0.852836	5.312991	0.0000
R-squared	0.982739			
Adjusted R <sup>2</sup>	0.981051			
F-statistic	582.0032			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	0.751692			

Source: Researchers' Compilation (2021)

Table 4 divulged the effect of Road tax on state revenue generation using fixed effect model. It was divulged that all the variables have positive significant effect on revenue generated in all the states sampled in Nigeria. An increased in road tax, PAYE, direct assessment and other tax significantly, statistically and positively influence influx in revenue generated by all the sampled state ( $\beta = 0.141771, 0.399045, 0.176138, 0.159112$ ;  $t = 0.01, 0.0000, 0.0000, 0.0002 < 0.05$  respectively).

**Random Effect Model on the Effect of Road Tax on Revenue Generated by Southwest State in Nigeria**

The test is required to ascertain if the variation across the entity is anticipated to be random as well as uncorrelated with the independent variables or predictor involved in the model. This also employed to determine whether the differences across organizations have some encouragement on the dependent variable or not. But its influence exists, random effects model is adopted.

**Table 5**  
**Random Effect Model on the Effect of Road Tax on Revenue Generated by Southwest State in Nigeria**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LRT	0.149658	0.053404	2.802347	0.0061
LPAYE	0.413409	0.043260	9.556293	0.0000
LDA	0.188078	0.031269	6.014779	0.0000
LOTHS	0.157664	0.039001	4.042607	0.0001
C	3.861418	0.703502	5.488853	0.0000
R-squared	0.884749			
Adjusted R <sup>2</sup>	0.879996			
F-statistic	186.1604			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	0.725693			

Source: Researchers' Compilation (2021)

Table 5 divulged the effect of Road tax on state revenue generation using random effect model. It was divulged that all variable also has positive significant effect on revenue generated in all the states sampled in Nigeria. An increased in road tax, PAYE, direct assessment and other tax significantly, statistically and positively influence increment in revenue generated by all the sampled state ( $\beta = 0.149658, 0.413409, 0.188078, 0.157664$ ;  $t = 0.0061, 0.0000, 0.0000, 0.0001 < 0.05$  respectively).

### Hausman Test

To ascertain the appropriate model between the two models tested that is the fixed effect model and the random effect model, there is a need for the Hausman test. Since the P-value of the Hausman test is greater than 0.05. This means that null hypothesis must be accepted and the alternative hypothesis must be rejected. Hence the Random effect model is more appropriate.

**Table 6**  
**Hausman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.087956	4	0.5432

Source: Researchers' Compilation (2021)

Since, the findings have shown that the random effect model is the most appropriate, Table 5 shows the Panel data using the random effect. The result of

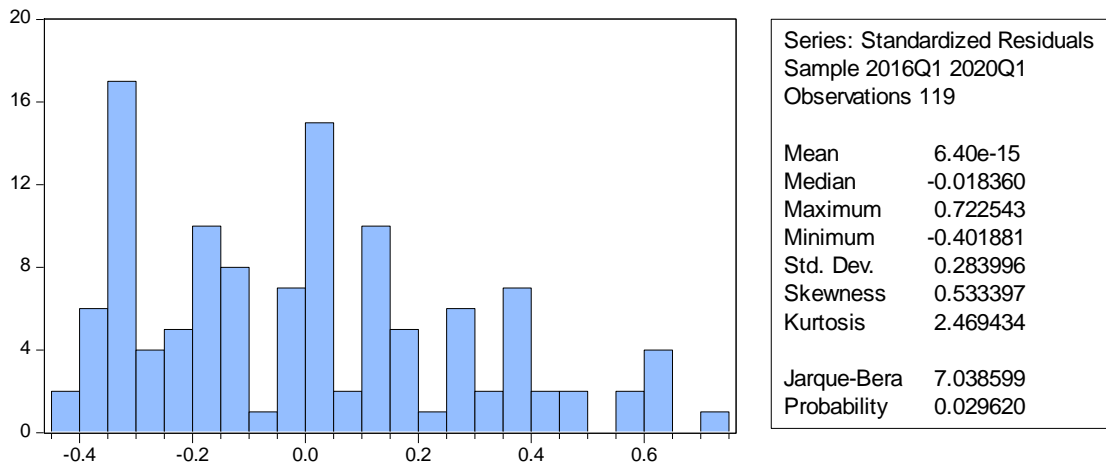
panel data random method estimates show that all the dependent variables are significant at 1% with the range of their probability falling between 0.0000 to 0.0061 and given that half of their coefficients are greater than the standard error and the t-test results are more than 2.0.

The  $R^2$  shows that about 88% of variation in Total revenue (TR) in the South western states of Nigeria are explained by the four types of taxes that is the explanatory variables in the model only while 12% is explained by the omitted variables. The adjusted  $R^2$  also shows that the model is a good fit since about 88% of the total variation in Total revenue (TR) is accounted for by other tax (OT) Pay as you earn (PAYE), Road tax (RT) and Direct assessment (DA) after removing the effect of insignificant estimators from the model.

The F-Statistics (186.1604) and its probability (0.00000) indicate that the goodness of fit is highly significant at 1% level. Hence other tax (OT) Pay as you earn (PAYE), Road tax (RT) and Direct assessment (Da) have significant impact on Total revenue of South western states in Nigeria.

### Post Estimation Test

Normality test result shows in the figure underneath that the residual of the variables is normally distributed because probability value (0.029 below 5 percent significant level).



Source: Researchers' Compilation (2021)

**Figure 2:** Graph of Post Estimation Test





### **Discussion of Findings**

This study examined the impact of road tax on the total revenue generated by the South western States of Nigeria in the period 1<sup>st</sup> quarter of 2010 to the last quarter of 2020 using the Total revenue generated by the 6 States in review proxied by TR as the dependent variable while Direct assessment (DA) Pay as you earn (PAYE) Road taxes (RT) and other taxes (OT) which were made the explanatory variables.

From our findings it is realized that road tax has a significant impact on total revenue generated by the southwestern states in Nigeria, there is an indication that the null hypothesis be rejected from the Jacque-Bera probability result in the descriptive statistics also the random effect model also shows a probability 0.0061 indicating that road tax have a significant impact at 1% level of significant on total revenue generated. Also, from the findings, road tax doesn't have the greatest impact on total revenue considering the fact that the coefficient of Road tax from the random effect model shows that for every #1 increase in road tax, there will be 14.9% increase in total revenue, compared to 18.8% from direct assessment, 15.7% from other tax and 41.3% from PAYE. This is also an indication that road tax doesn't have the greatest impact on total revenue generated by the south western states in Nigeria.

Finally, our findings also shows that 88% of the variance in total revenue is caused by the independent variables used for this study while other revenue variables like Grants, loans and other revenue that form the total bulk of revenue of the south western states is responsible for the 12% differential.

### **5. CONCLUSION**

This study examined the effect of road tax on revenue generated by southwest state in Nigeria from 2010 to 2019. It employed panel data through fixed and random model to analyze the data collected from respective state board internal revenue from 2010 to 2019. Findings show that road tax has positive significant impact on revenue generation. This uncovered that income realized from road tax upsurge revenue generation among selected states in Nigeria. It is advocated that much efforts should be expended by the state government to check and track road tax evasion so as to upsurge revenue generation for effective fulfillment of government responsibilities.

This paper is exposed to numerous limitations, such as data unavailability, analysis constrain, and nonchalant attitude of the tax authority to unhidden unavoidable data at appropriate schedules.



## **6. RECOMMENDATION**

The findings of this study are based on empirical data and scientific literature which make it unique to extant literatures. Therefore, future research on road tax and revenue generation can be extended to North central of Nigeria which can be questionnaire inclusive. Also, the impact of direct assessment which is the subset of PIT can be investigated on revenue generation in Nigerian south western state.

## **REFERENCES**

- Adegbite T.A. (2017). Personal Income Tax and Government Revenue: Evidence from Oyo State. *International Journal of Social and Administrative*, 2(2), 45-51.
- Adegbite T.A. (2020). An Investigation on the Influence of Taxation on Economic Growth in Nigeria. *Academic Journal of Economic Studies*, 6(2), 12-20.
- Adegbite T.A. (2021). Non-Oil Taxation and Government Expenditure in Nigeria: Feedback from Co-Integration Analysis. *The Journal of Economic Research & Business Administration*, 137(3), 15-24.
- Aminu, A.A., & Eluwa, D.I. (2017). The Impact of Tax Reforms on Government Revenue Generation in Nigeria. *Journal of Economic and Social Development*, 1(1), 1-10.
- Emmanuel S. N. (2018). The Impact of Tax Administration on Revenue Generation in Gombe State, Nigeria. *Scholedge International Journal of Management and Development*, 5(8), 86- 95.
- Fasina H. T., Adegbite T. A. & Alabi W.O. (2018). The Evaluation of the Effect of Personal Income Tax on Revenue Profile of Ekiti State Government. *International Journal of Research in Economics and Social Sciences*, 8(7), 1-10.
- Ganyam A.L., Ivungu J.A. & Anongo E. T. (2019). Effect of Tax Administration on Revenue Generation in Nigeria: Evidence from Benue State Tax Administration (2015-2018). *International Journal of Economics, Commerce and Management*, 7(7), 394- 414.
- Neway, G., Kenenisa, L.D., & Woldemicael, S. (2018). Determinants of Tax Revenue in Ethiopia. *Journal of Economics*, 6(1), 58-64.



- Ogbodo O. C. & Nweze C. L. (2021). Effect of Tax Revenue on Economic Development: Evidence from Nigeria. *Research Journal of Management Practice, 1*(2), 17-32.
- Olaoye, C.O., & Ayeni, O.F. (2019). Another Approach to Evaluating the Productivity of Value Added Tax in Nigeria. *Developing Country Studies, 4*(15): 39- 45.
- Omondi, B. O. (2019). The Effect of Custom and Excise Duties on Economic Growth in Kenya. *International Journal of Scientific and Research Publications, 9*(1), 530 -546.
- Samuel, S. E. & Tyokoso, G. (2014). Taxation and Revenue Generation: An Empirical Investigation of Selected States in Nigeria. *Journal of Poverty, Investment and Development, 4*(10), 12- 21
- Wadesango N., Bizah S. & Nyamwanza L. (2020). The Impact of Tax Amnesty on Tax Compliance and Tax Evasion Behavior among SMES. *Academy of Entrepreneurship Journal, 26*(3), 1-10.