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# The Impact of State Internally Generated Revenues on Total State Revenues and Financial Viability: A Case Study of Lagos State, Nigeria

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***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

Internally Generated Revenue (IGR) has been a focus of attention in public financial management because of its key role to Total State Revenue and Financial Viability (TSR&FV). Constant neglect of IGR in states due to over reliance on federal allocation has led to shortage of TSR&FV for funding and governance. Researches have been conducted on IGR in public sector with focus on transport infrastructures, personal income tax, tax administration and tax evasion but with less emphasis on the impact of IGR on TSR&FV. Therefore, this study examined the probable impact of state IGR on TSR&FV of Lagos State, Nigeria. The study adopts ex-post facto research design. Secondary data were extracted from Nigeria Bureau of Statistics annual report of 2011 to 2021. Data were analyzed with descriptive and inferential statistics at 5% level of significance. The study revealed that state IGR positively impact TSR&FV (Adj.R2=0.99250, F(5,10)=244.1106, p=0.000).

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The study concluded that IGR have significant influence on TSR&FV and that IGR contribute maximally to TSR&FV. Moreover, Pay As You Earn tax has the highest contribution (63.9%) to state IGR while direct assessment and road tax have the least contribution of 3.9% and 2.1%, respectively. The study recommends that State government should ensure better revenue management and good governance to boost tax morale and tax compliance. Government should also put more policies on revenue generation, training of revenue officers, and funding of revenue agencies. Similarly, new revenue base should be identified and pursued within the ambit of the law to drive TSR&FV.

*Keywords: Internally generated revenue; public financial management; financial viability; public goods; tax compliance; tax morale.*

**JEL Classification Code H2**.

## 1. INTRODUCTION

Nigeria is a decentralized nation with three tiers of government: Federal, States (36) and Local governments (774). Revenue generation by each tier of government is also decentralized in line with the Federal constitution and Joint Tax Board (JTB). Prior to crude oil discovery in 1970s, taxation and agricultural produces were the main sources of revenue to government but today, crude oil is major, contributing at least 80% revenue to the federation account. But in recent times, crude oil revenue has become unsustainable due to volatility of crude oil prices in the global market, impact of COVID-19 pandemic, economic regression, and political crisis. State revenue can be categorized into two: Externally (Statutory allocation and Value Added Tax (VAT)), and Internally Generated Revenues (IGR). Adekoya, Oyebamiji and Lawal [1]; BudgiT [2] reported that many states in Nigeria rely heavily on externally generated revenue for survival and Financial Viability (FV). This source contributes at least 75% of total revenues of many states and makes them over dependent on statutory allocation for survival and FV. However, daily increase in cost of governance, discovery of crude oil in more countries with likelihood of reduction in crude oil revenue, external sources has become unsustainable. Therefore, there is need to formulate policies and strategies to boost state IGR and enhance Total State Revenues (TSR) and FV.

IGR has been a focus of attention in public financial management because of its key role to TSR. Therefore, infrastructural development, sustainable budget implementation, and sustainability of states in Nigeria depends on adequate finance. Finance is the fuel of administration, whether in private or public institutions, it constitutes the lubricants for the wheel of good governance or administration [3]. Ability to generate such finance from IGR to supplement the allocated revenue from the federation account is key to TSR. TSR means all incomes accruing to the state from both IGR and external (Statutory allocation and VAT). IGR are revenues which the state generate within its area of jurisdiction, these are taxes, levies, fees, fines and charges. These form of revenues broadening and widening TSR. Section 162 (10) of Nigeria 1999 constitution CAP C25 LFN 2004 defined revenue as any income or returns accruing to or derived by the government from any sources such as receipts arising from operation of the law, receipt from property held by government and any form of returns such as interest from loan or dividend from shares in any company or statutory body.

The thirty-six states in Nigeria differ in terms of socio-demographic, geographical, economic, political, cultural/religious, population, and fiscal characteristics. However, many of these states are faced with challenges of wide gap between citizens' demands and the financial resources needed to meet such demands. According to Adekoya [3], this gap occurred mostly due to population increases; leakages in IGR arising from (corruption, pilferages, and inefficiency of revenue officers); rising cost of governance; political crisis; and economic regression. In addition, many states have arrears of unpaid staff salaries, infrastructural decayed, and high debt profile due to shortage of funds and financial mismanagement. Besides, some states have inaccurate taxpayers' data, incidence of misrule, mistrust, corruption and unfair rule of law, this affect taxpayers' morale, TSR and state FV.

Revenue is a generic terms for tax and non-tax sources. A tax revenue is a compulsory payment

by taxpayers on income, profit, or property while non-tax revenue are payments charge on usages or activities, such as fees, fines, rates, tolls, licences, permits and other miscellaneous revenues [4]. IGR has been a tropical issue in recent time because of its importance to FV and funding support for sustainable development. Lagos state did domestic tax policy and administrative reforms between 1999 and 2007 to enhance its IGR. This idea was followed by successful administration with increased investment in technology and creation of enable and conducive environment for business to strive. According to BudgiT [2] Lagos with index of 0.82 was ranked 1st as less dependence state on federally allocated revenue but rather, boost its IGR to support funding for its operations. On yearly basis, there has been gradual increase in Lagos IGR after tax policies and administrative reforms for good governance. The application of tax revenues on projects likes Bus Rapid Transit System (BRT), light rail project, water way transport system, security, education, health, and social welfare build trust among the citizens and enhances tax morale with positive impacts on IGR.

Many research had been conducted on IGR in public sector but with different focus of studies likes IGR and: transport infrastructures [5]; sustainable budget implementation [6], tax revenue and infrastructural development [7], tax evasion [8], tax administration [9], tax compliance (Isimoya, 2020); COVID-19 pandemic [1]; personal income tax [10], signage and advertisement [11,12], taxpayers identification number [13], with less emphasis on the impact of state IGR on TSR and FV. This study fills this gap by examining how state IGR can boost TSR and FV using Lagos state, Nigeria, as case study. The study attempts to answer the question: Does state IGR impacts on TSR and FV of Lagos state, Nigeria? The hypothesis drafted in null forms and tested at 5% level of significance for the study is:

### 1.1 State IGR, does not have Significant Impact on TSR and FV of Lagos State, Nigeria

The objective of the study is to increase the body of knowledge on state IGR and its contribution to TSR&FV. The study will contribute to the frontier of knowledge on IGR and TSR&FV for sustainable development and economic growth. Moreover, for better understanding, the rest of the paper is divided into four parts, part two of the paper is review of extant literature, part three methodology, part four focus on discussion and data analysis, while the last part deals with summary, conclusion and recommendations.

## 2. REVIEW OF EXTANT LITERATURE

### 2.1 Conceptual Review

#### 2.1.1 Internally Generated Revenue (IGR)

IGR is the revenue generated by each tiers of government within their area of jurisdiction. Omodero, Ekwe and Ihendinihu [14] defined IGR as fund needed by tier of government to finance its programme and activities on yearly basis. IGR serves as critical means of social contract, social engineering, and a tool of economic development. It aid reliable budgeting and boost the state economy for growth and development. IGR helps the government to be more responsive and responsible to the needs of the citizens, keeps society together, and ensure conducive atmosphere for business to grow. State IGR are classified into various sources for administrative conveniences. These are:

1. **Ministries, Departments and Agencies (MDAs) Revenues:** These are IGR administratively generated by State MDAs in the course of providing various services to citizens in the State.
2. **Direct assessment:** Direct Assessment is the personal income tax assessable on self-employed individuals. It also relate to various direct assessment on informal businesses by the state government determine by the size or volume of activities.
3. **Pay As You Earn (PAYE):** Is the personal income tax deducted directly from employee wages and salaries in the formal sector by employer and remit to tax authorities. All employers of labour in Nigeria are saddle with the responsibilities to deduct PAYE taxes from their employees' earnings.
4. **Road taxes:** These are daily levies paid by commercial transporters who operates within the states. It also involves yearly vehicle licenses fees paid by vehicles owner within the state.
5. **Other taxes:** These are various taxes, levies and fees on market traders, development levies on individuals, land registration and other land related fees, stamp duties on individuals, and pool betting or lottery or gaming fees.

### 2.1.2 Problems of IGR in states

IGR faces the challenges of:

1. Tax avoidance, evasion and non-compliance
2. Corruption
3. Poor financial management
4. Ineffective strategies and over dependence on federal allocation
5. Mistrust, misrule and bad governance
6. Lack of transparency and accountability
7. Budget indiscipline
8. Lack of updated taxpayers data and minimal TIN allocation
9. Non adoption of modern technology to drive IGR
10. Shortage of experienced and professional revenue officers.

### 2.1.3 Total State Revenues (TSR)

TSR is the combination of external sources (statutory allocation from the federation account or Federal Account Allocation Committee (FAAC) and Valued Added Tax (VAT)) and the IGR excluding any form of loans, grants or donations. Statutory allocation from the federation account is 26.72% of the total amount to the credit of federation account shared among the 36 states and federal capital territory based on approved sharing formular. Also VAT allocation of 50% of the total amount to the credit of VAT account shared to each state and federal capital based on approved parameters.

### 2.1.4 Lagos State, Nigeria

Lagos state was created on 27th May, 1967 by state creation and transitional provision decree No 14 of 1967. Lagos state is a state in the South-west geopolitical zone of Nigeria, and also the commercial capital of the nation, it contribute 22.7% to Nigeria GDP and also received 86.91% of Nigeria capital importation in 2021 [2]. According to 2006 census figure, it has a population of over 9million with projection of annual increase of 600,000. Presently it has a population of at least 17 million people and account for at least 30% of economic activities of Nigeria. It is the economic nerve center with two leading port. It is the fifth largest economy in Africa and seventh fastest growing economy in the world. The state has the largest cluster of formal and informal workers in Nigeria. It is the financial hub of the country with presence of major banks and financial institutions, and over 50% of Nigeria non-oil industries. Lagos collects taxes, fees, rates, levies and others from both formal and informal sector as IGR.

## 2.2 Theoretical Review

The study anchored on ability to pay theory and benefit theory.

### 2.2.1 Ability to pay theory

Ability to pay theory rest on individual or firm capability to pay taxes, rates, levies or fees. The theory came from the principle of affordability to pay taxes. It is one of the influential theories in public finance, an extension of the canon of tax justice, fairness, and equity proposed by Adam Smith. It view tax payment based on taxpayer ability to pay measure by wealth, income or usage. Batt [15], opined that ability to pay theory means taxpayer capability to pay levies, fees, rates or taxes based on proportion of income, profit or services enjoyed. The theory allow the rich to pay more tax to the government than the poor in the society. In the same vein, Zhou and Madhikani [16] reported that ability to pay theory is a function of taxpayer's wealth, income or services derived, and capability to pay. Also, Kendrick [17], postulated that ability to pay theory is perfect with honest mind. That means taxpayer must be honest, fair, and have willingness to pay however, government must also exhibit transparency, trustworthiness, and accountability on tax revenue.

### 2.2.2 Benefit theory

The theory was developed by Swedish economists John Gustaf K. Wiksell (1851-1926) and Erik Lindahl (1891-1960). However, the theory was popularized by Richard Musgrave in 1959 and Paul Samuelson in 2000. It originated from taxation aspect of public finance theory. The theory viewed taxpayer willingness to pay taxes on the principle of benefits received from the government. This brings about tax justice, fairness, and equity on taxes, levies, and rates according to Adam Smith. The theory emphasizes value exchange between the government and citizens (taxpayers). It can also be reported as voluntary exchange theory based on the cordial relationship that exist between the taxpayers and the state. Nevertheless, government role is to provide public goods for the citizens while the citizens in return pay tax, levy, fees or rates in proportion to the benefit received.

## 2.3 Empirical review

Various studies had been carried out on IGR with differs conclusion and recommendation likes:

Folayan, Dosumu and Amusa [8] studied tax evasion and government revenue generation in selected states in South-west, Nigeria. The study revealed that tax evasion has negative effect on IGR and inevitable impact on government performance. In addition, Azende and Ganyam [9] examined the effect of tax administration on tax revenue of states in African countries. The study revealed a significant mean differences in PAYE and road taxes, and insignificant mean difference in direct assessment and miscellaneous before and during the implementation of tax administrative reform. Furthermore, Ajike et al. [5] studied IGR and its impact on transport infrastructural development in Lagos state. The study revealed that IGR enhances transport infrastructural development and state economic development. Moreover, Adamu. Mahdi and Yakubu [18] studied the effect of revenue generation on infrastructural development of Gombe state. The study revealed that IGR by the state was very minimal to influence state budget without reliance on federal allocation. Besides, Salman et al. [13] studied the effect of Taxpayers' Identification Number (TIN) on revenue generation in Lagos state, Nigeria. The study revealed that TIN has significant positive relationship with internally IGR and tax compliance. The study recommends grassroots tax education and issuance of TIN to grassroots potential taxpayers.

Izevbigie and Ebohon [19] examined IGR and state viability with comparative analysis of two states in Nigeria. The study revealed that tax compliance and revenue generation is higher in Lagos state than Edo state. In addition, Fatile and Ejalonibu [6] studied IGR and sustainable budget implementation with comparative study of Lagos and Oyo state. The study revealed that persistent shortfall in state revenue inevitably affects the sustainability of budget implementation. Furthermore, Oti and Odey [20] studied Nigeria's revenue profile and development mesh. The study revealed shortfall in revenue and recommended that national and Sub-national government should modify economic policy that will increase revenue generation and economic development. Moreover, Adegbite [21]; Adedeji and Akindele [10] examined the effect of personal income tax on revenue generation. The study revealed that personal income tax has significant and positive correlation with IGR. Furthermore, Isimoya [22] studied tax compliance and revenue generation in Lagos state. The study revealed that tax compliance is statistically significant with revenue generation.

## 3. METHODOLOGY

The study adopts *ex-post facto* research design. Secondary data on IGR and TSR were extracted from the Nigerian Bureau of Statistics (NBS) annual report for the period of 2012 to 2021. Data was analyzed with descriptive statistics of percentage, bar chart, tabulation, mean, standard deviation and inferential statistics of Ordinary Least Square (OLS) and Analysis of Variances (ANOVA) for the aggregate model. F-statistics at 5% level of significance was used to assess the combined effect of the explanatory variables on the criterion for rejection or acceptance decision. Also, a purposeful sample technique was adopted to select Lagos as study state. The selection was based on the following criteria's: most populous state in Nigeria with over 17million population in 2020; it is the economic nerve center; the largest cluster of formal and informal sector, and the financial hub with at least 70% of the country's industrial and commercial activities [23].

### 3.1 Model Specification

The model shows the functional and conceptual relationship between the dependent variable and the independent variables. The dependent variable is TSR while the independent variable is the IGR. The study expects that IGR would enhanced TSR, this mean that IGR would increase the total FV of the state. The mathematical expression of the regression model is given as:

$Y = f(X)$ Y= Dependent variable; X= Independent variable

$X = (x_1, x_2, x_3, x_4, x_5)$

TSR = $f$ (PYE, DAS, RTS, OTS, MOR)

Where:

TSR = Total State Reveue;
PYE = Paye;
DAS= Direct Assessmet
RTS = Road Taxes;
OTS= Other Taxes;
MOR = Mda's & Other Revenues

The model specification will be:

$$Y = \beta_0 + \beta_1 X_i + \text{----------} + \mu_1$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 \text{----------} + \mu_i$$

Y= Total state revenues

X = individual revenue

X = X1, X2, X3, X4, X5

$TSR = \beta_0 + \beta_1 PYE + \beta_2 DAS + \beta_3 RTS + \beta_4 OTS + \beta_5 MOR + \mu_1$

$\mu$ = Error term, $\beta_0$ = Intercept or the constant

$\beta_1 - \beta_5$ = Partial regression coefficient of the explanatory variables.

**A priori Expectation**

$\beta_1 - \beta_5$ are expected to be greater than zero and positively signed.

## 4. DATA ANALYSIS AND DISCUSSION OF FINDINGS

Data collected from NBS (secondary data) were analyzed and interpreted with descriptive statistic while the hypothesis was tested using the multiple regression analysis and Analysis of Variance (ANOVA).

### 4.1 Descriptive Analysis of the Test Items

Secondary data gathered are analyzed with descriptive statistics of bar chart, percentage, standard deviation, tabulation and others.

Fig. 1 shows the graphical illustration of IGR on yearly basis for DAS, MOR, OTS, PYE, RTS, and TSR between 2012 and 2021. Bar chart for DAS shows a steady growth in revenues from ₦1.9billion in 2012 to ₦29.3billion in 2021, a growth rate of 1442%. Conversely, MOR grew from ₦40.5billion in 2012 to the highest revenue in 2014 (₦108.6billion). This was followed by declined in revenue from 2015 to 2020 before it increased to ₦84.4billion in 2021. Furthermore, OTS had nil revenue between 2012 and 2015. However, in 2016, OTS revenue was ₦43.2billion, this followed with yearly increase in revenue with ₦106.3billion generated in 2021. PYE revenue improves significantly from ₦172.4billion in 2012 to ₦313.1billion in 2021. Besides, RTS revenue between 2012 and 2014 was very low, at average of ₦4.3billion, but in 2015 and 2016, revenue remain constant at ₦9.5billion respectively. However, this declined to ₦7.1billion in 2017, but, further increased to ₦14.3billion in 2021. Lastly, TSR has a step like revenue shape, from ₦337.7billion in 2012, there was gradual and steady increases on yearly basis with ₦740.2billion generated in 2021. These figures shows the FV of the state on yearly basis, an indication of positive contribution towards citizens' demand and sustainable development.

Table 1 shows the percentage of individual IGR to TSR performance from 2012 to 2021. The highest contribution for PYE, DAS, RTS, and MOR were 78.7% (2012), 5.4% (2021), 3.5% (2015), 19.5% (2021), and 39.3% (2014), respectively. Conversely, the least contribution were 55.6% (2014), 0.9% (2012), 1.7% (2014), 0.0% (2012-2015), and 9.9% (2019) for PYE, DAS, RTS, and MOR respectively. On yearly basis, PYE has the highest revenue generated among all the IGR variables. Overall, PYE has the highest contribution of 63.9%, this was followed by MOR (18.3%) and OTS (11.8%). DAS and RTS have the least contribution of 3.9% and 2.1% respectively. The study revealed that PYE contribute heavily to state IGR and TSR on yearly basis while RTS and DAS had minimal contribution. This align with the position of Ademola, Adeyinka and Emenike [24] that tax is the main sources of IGR to states in Nigeria.

#### 4.1.1 Interpretation

*4.1.1.1 Pre-estimation results*

Breusch-Godfrey Serial correlation LM test is a test of auto correlation. The null statement for this test is that the series has no serial correlation. The p-value is 33%, this is more than the statistical threshold of 5%. Therefore, the null cannot be rejected. The series is then not auto correlated. This mean that the figure of a particular year cannot be used to correctly predict that of future years. The null statement of heteroscedasticity test shows that the variables were not heteroscedastic but are homoscedastic. At the p-value (44%) the result is higher than 5%, the null hypothesis cannot be rejected. This means that all the variables are homoscedastic which is a good result. Ramsey Reset test is a robustness formal test which helps to test the linearity of our model. A regression criterion is that the model must be linear, and besides the

result shows that the Null hypothesis cannot be rejected indicating that the model is linear because the p-value is 0.84, which is more than 0.05. This shows that study model was correctly specified with no specification bias.

In addition, the probability value of Jarque-Bera (0.76) is more than 0.05, thus we do not reject the null hypothesis as the residuals are normally distributed because the P-value is 0.76. The guideline is that the residuals should be normally distributed which is in line with our result which shows that the residuals of our model is normally distributed. The standard deviation which is a measure of dispersion from mean was 7.595. IGR was negatively skewed at -0.292, this implied that distribution was negatively skewed to the left tail extreme. Similarly, kurtosis which shows the degree of peakedness of distribution when compared with normal distribution was 2.04, since the value is less than 3, the distribution was platykutic, this mean they are less peaked than the normal curve. All the post estimation test results presented have helped to prove that the model for this study meet the criteria for deriving a good regression model. These criteria are that the series residuals must be normally distributed, there must not be auto correlation, the series must be homoscedastic and that the model must be linear. Since all these criterions had been reasonably satisfied, it means that the results/findings from the models are useful for forecasting and therefore reliable.

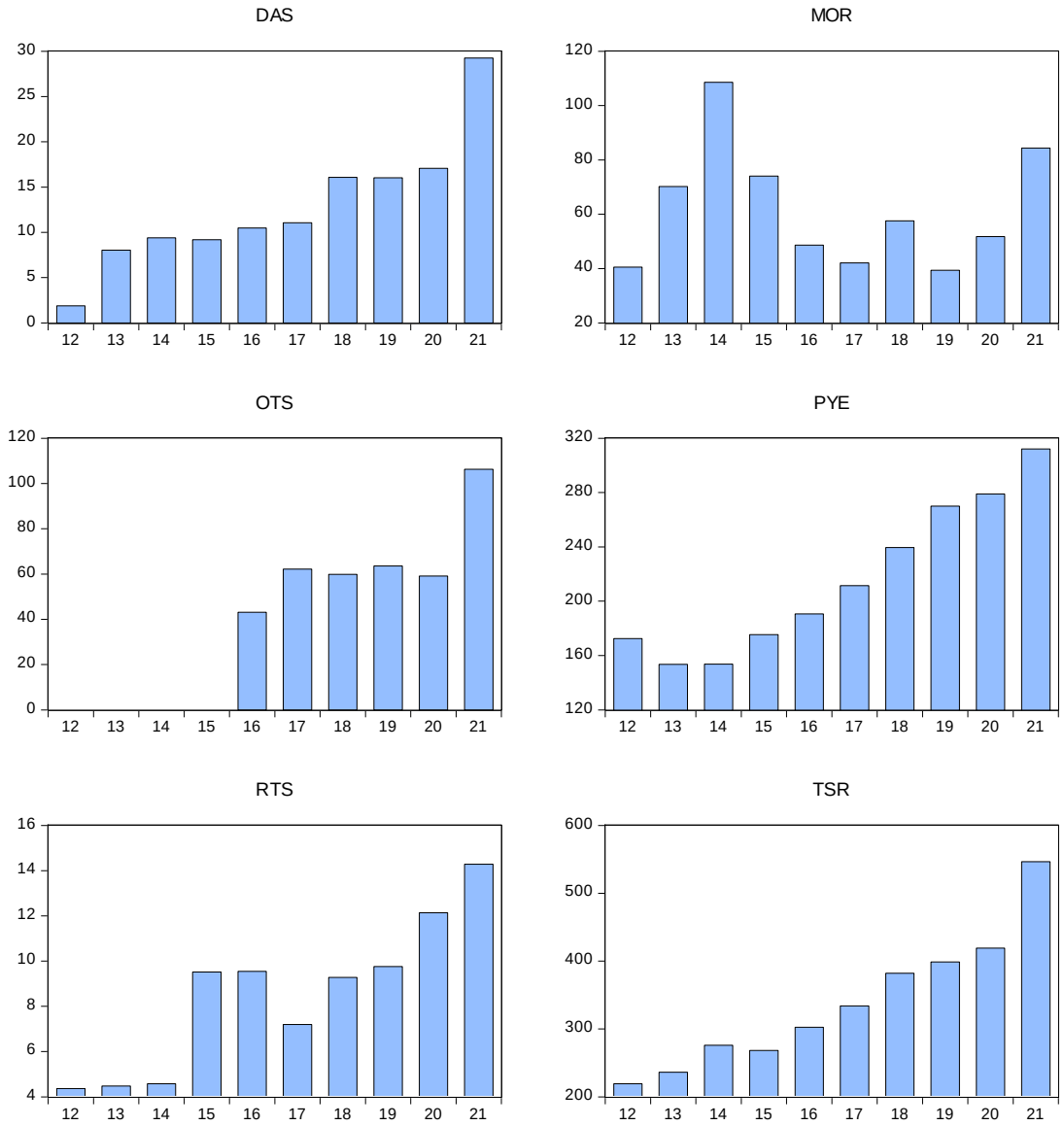


**Fig. 1. Graphical illustration of revenue generated (2012-2021)**

**Table 1. Individual Revenue percentage Contributions to Total IGR (2012-2021)**

| Year | PYE % contr to TIGR | DAS % contr to TIGR | RTS % contr to TIGR | OTS % contr to TIGR | MOR % contr to TIGR | Total |
|---|---|---|---|---|---|---|
| 2012 | 78.7 | 0.9 | 2.0 | 0.0 | 18.5 | 100 |
| 2013 | 65.0 | 3.4 | 1.9 | 0.0 | 29.7 | 100 |
| 2014 | 55.6 | 3.4 | 1.7 | 0.0 | 39.3 | 100 |
| 2015 | 65.4 | 3.4 | 3.5 | 0.0 | 27.6 | 100 |
| 2016 | 63.0 | 3.5 | 3.2 | 14.3 | 16.1 | 100 |
| 2017 | 63.3 | 3.3 | 2.2 | 18.6 | 12.6 | 100 |
| 2018 | 62.7 | 4.2 | 2.4 | 15.7 | 15.1 | 100 |
| 2019 | 67.7 | 4.0 | 2.4 | 15.9 | 9.9 | 100 |
| 2020 | 66.6 | 4.1 | 2.9 | 14.1 | 12.4 | 100 |
| 2021 | 57.1 | 5.4 | 2.6 | 19.5 | 15.4 | 100 |
| Overall Average | 63.9 | 3.9 | 2.1 | 11.8 | 18.3 | 100 |

*Source: Authors' Computation from Nigeria Bureau of Statistics data (2023)*

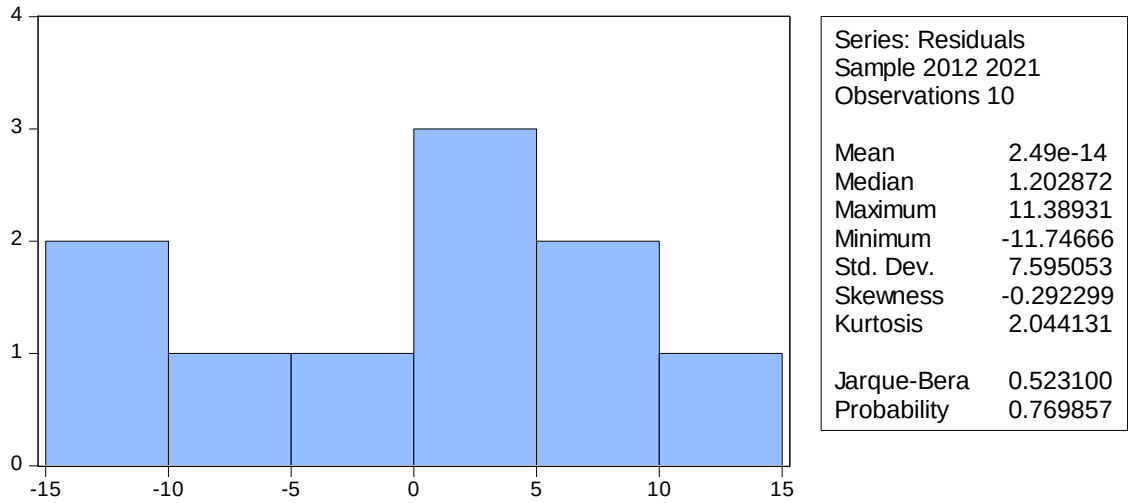


**Fig. 2. Normality test**

**Table 2. Serial correlation test**

| **Breusch-Godfrey Serial Correlation LM Test:** | | | |
|---|---|---|---|
| F-statistic | 2.021627 | Prob. F(2,2) | 0.3309 |
| Obs*R-squared | 6.690524 | Prob. Chi-Square(2) | 0.0353 |
| **Heteroscedasticity test** | | | |
| Heteroskedasticity Test: Breusch-Pagan-Godfrey | | | |
| F-statistic | 1.192218 | Prob. F(5,4) | 0.4448 |
| Obs*R-squared | 5.984375 | Prob. Chi-Square(5) | 0.3077 |
| Scaled explained SS | 0.499878 | Prob. Chi-Square(5) | 0.9921 |
| **Ramsey RESET test** | | | |
| Ramsey RESET Test | | | |
| Equation: UNTITLED | | | |
| Specification: TSR C PYE DAS RTS OTS MOR | | | |
| Omitted Variables: Squares of fitted values | | | |
| | **Value** | **df** | **Probability** |
| t-statistic | 0.209580 | 3 | 0.8474 |
| F-statistic | 0.043924 | (1, 3) | 0.8474 |
| Likelihood ratio | 0.145351 | 1 | 0.7030 |

## 4.2 Test of Hypothesis

**$H_o$:** State internally generated revenues, does not have significant impact on total revenues and financial viability of Lagos State, Nigeria.

### 4.2.1 Regression equation results

Table 3 shows the outcomes of regression analysis on the impact of state IGR on TSR and FV of Lagos State, Nigeria. The results shows that PYE (1.8426), DAS (4.0425), OTS (0.5436) and MOR (0.7711) have positive relationships with TSR and FV of Lagos State, Nigeria. Conversely, RTS (-5.5142) has negative relationships with TSR and financial viability. The study revealed that state IGR has impact on TSR and FV of Lagos State, Nigeria (*Adj* $R^2$ =0.992650), F (5, 10) = 244.1106; P=0.000047. There was evidence that PYE has significant relationships with TSR and FV of Lagos State, Nigeria (PYE = 1.8426, *t*- test= 6.7281, p= 0.0025. Conversely, DAS, RTS, OTS, MOR respectively, exerted insignificant relationship with TSR and FV of Lagos State, Nigeria (DAS = 4.0425, *t*- test= 1.1073, p = 0.3303; RTS = -5.5142, *t*- test= -2.0081 p = 0.1150; OTS = 0.5436, *t*- test= 1.2591, p = 0.2765; MOR = 0.7711, *t*- test= 1.5464 p = 0.1969). This implies that PYE was significant factors that effects changes in TSR and FV of Lagos State, Nigeria while DAS, RTS, OTS, MOR respectively, were insignificant factors that effects changes in TSR and FV of Lagos State, Nigeria. The nature and the extent of the effect of each of the measures of the explanatory variables on the dependent variable (TSR) are shown in the values of the coefficients. The coefficient values revealed that PYE positively impact TSR (β = 1.8426) indicating that an increase in the value of PYE would yield 1.8426 percent increase in TSR; likewise, as DAS increases by 1 percent, the TSR would increase by 4.0425 percent (β = 4.0425). Furthermore, RTS exerted negative effect on TSR (β = -5.5142) meaning that a percent increase in the value of RTS would yield 5.5142 percent reduction in TSR. Finally, an increase in OTS and MOR by 1 percent will lead to 0.5436 percent and 0.7711 percent increase in TSR, respectively.

The Adjusted $R^2$ measures the proportion of the changes in TSR and FV of Lagos State, Nigeria as a result of changes in PYE, DAS, RTS, OTS, and MOR. The Adjusted $R^2$ of 0.9927 explained about 99.27 percent changes in TSR and FV of Lagos State, Nigeria, while the remaining 0.73 percent were other factors explaining changes in TSR and FV of Lagos State, Nigeria but were not captured in the model. The F- test of 244.1106 is statistically significant with p = 0.000047. This shows that variables used in the model have a goodness of fit which was a good predictor of the main variable and that PYE, DAS, RTS, OTS, and MOR jointly explains changes in TSR and FV of Lagos State, Nigeria. The F-statistic of 244.1106 is statistically significant with p =0.000047. This indicates that on the overall, the statistical significance of the model showed that the null hypothesis that state IGR does not have significant effect on TSR and FV of Lagos State, Nigeria was rejected. Thus, the alternative hypothesis that state IGR have significant effect on TSR and FV of Lagos State, Nigeria was accepted at 5 percent level of significance.

**Table 3. Regression and post-estimation results**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 2.477123 | 55.40344 | 0.044711 | 0.9665 |
| PYE | 1.842595 | 0.273864 | 6.728149 | 0.0025 |
| DAS | 4.042504 | 3.650852 | 1.107277 | 0.3303 |
| RTS | -5.514247 | 2.745981 | -2.008116 | 0.1150 |
| OTS | 0.543557 | 0.431699 | 1.259113 | 0.2765 |
| MOR | 0.771075 | 0.498612 | 1.546444 | 0.1969 |
| R-squared | 0.996734 | Mean dependent var | | 474.0120 |
| Adjusted R-squared | 0.992650 | S.D. dependent var | | 132.8892 |
| S.E. of regression | 11.39258 | Akaike info criterion | | 7.987511 |
| Sum squared resid | 519.1635 | Schwarz criterion | | 8.169062 |
| Log likelihood | -33.93755 | Hannan-Quinn criter. | | 7.788350 |
| F-statistic | 244.1106 | Durbin-Watson stat | | 2.986015 |
| Prob (F-statistic) | 0.000047 | | | |

*Dependent Variable: TSR; @5% significance level*
*Source: Researcher's Work (2023)*

### 4.3 Discussion and Implication of Findings

Empirical findings from the test of hypothesis on state IGR and TSR and FV of Lagos State, Nigeria revealed that PYE, DAS, OTS, and MOR have positive relationships with TSR and FV of Lagos State, Nigeria. Conversely, RTS has negative relationships with TSR and FV of Lagos State, Nigeria. The F-statistic of 244.1106 is statistically significant at p= 0.000047 therefore, the study revealed that state IGR have significant influence on TSR and FV of Lagos State, Nigeria at 5 per cent level of significance. In the aggregate model, our findings shows that there is a direct relationship between IGR and TSR and FV of Lagos State, Nigeria. Also, PYE has the highest contribution of 63.8% to IGR of the state while RTS (2.1%) and DAS (3.9%) have the least. This shows that PYE contribute heavily to state IGR and TSR on yearly basis while RTS and DAS have minimal contribution. In all, IGR contributes maximally to the growth of TSR and FV of Lagos State, Nigeria. The outcome of the study align with the work of Isimoya [22]; Adegbite [21]; Ajike et al. [5]; Izevbigie & Ebohon [19]; Fatile & Ejalonibu [6]; Salman et al. [13]; Adedeji & Akindele [10] that IGR has positive impact on TSR and state FV.

## 5. SUMMARY, CONCLUSION AND RECOMMENDATION OF FINDINGS

### 5.1 Summary and Conclusion

This study examined state IGR and its impacts on TSR and FV of Lagos state, Nigeria over the period of 10 years (2012-2021). The study revealed that PYE, DAS, OTS, and MOR have positive relationships with TSR and FV of Lagos State, Nigeria. Conversely, RTS has negative relationships with TSR and FV in Lagos State, Nigeria. The finding also revealed that PYE has significant relationships with TSR and FV in Lagos State, Nigeria. Conversely, DAS, RTS, OTS, MOR respectively, exerted insignificant relationship with TSR and FV in Lagos State, Nigeria. Besides, PYE was significant factor which influenced changes in TSR and FV of Lagos State, Nigeria while DAS, RTS, OTS, MOR respectively were not significant factors that influenced changes in TSR and FV of Lagos State, Nigeria. Also, PYE contribute heavily (63.9%) to state IGR and TSR on yearly basis while RTS (2.1%) and DAS (3.9%) contribute minimally. In conclusion, empirical discoveries revealed that state IGR have impacts on TSR and FV of Lagos State, Nigeria. These outcome align with the principle of ability to pay and benefit theory which stipulated that revenues generation is based on taxpayers' capability to pay and ratio of benefit received from government.

### 5.2 Recommendations

State government should ensure better revenue management on RTS and DAS to enhance state financial resources for sustainable development. Moreover, improvement can also be achieved for MOR and OTS with better monitoring and technological drive. Likewise, state government should put in more policies on IGR with the funding of tax authorities and other revenue generating agencies. Public enlightenment on revenue generation, improved services, and good governance that shun corruption, mistrust and misrule would boost tax morale and tax compliance of the citizens. In addition, continuous training and capacity building should be adopted for revenue officers. Moreover, data base for taxpayers should be updated with Tax Identification Number (TIN) while new revenue base should be identified and pursued within the ambit of the law to drive TSR and FV. In addition, future research could be conducted on the impact of personal income tax on IGR with focus on more states or comparison of statutory allocation and IGR for sustainable development.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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