Tax Structure and Economic Development: An Infrastructural Viewpoint

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Abstract: Underdevelopment in Nigeria was attributed to the governments’ inability to invest in infrastructure, social inclusion, creation of jobs and youth empowerment, and improved the economy’s human capacity base. Therefore, this study examines Nigeria’s tax structure and economic development from the standpoint of infrastructural deficiencies. This study’s population consisted of 4,200 tax practitioners, senior management staff of the Federal Inland Revenue Service in Lagos State. Simultaneously, Taro Yamane’s formula was used to determine the sample size of 365. Cronbach Alpha reliability coefficients take values between 0.864 and 0.952, thus confirming the reliability of data used. The study employed a survey research design using a structured questionnaire administered to senior tax practitioners and senior staff of the Federal Inland Revenue Service. A total of 85% of the questionnaire administered were retrieved while descriptive and inferential statistics were used for the data analysis. The study found that the tax structure had a significant positive effect on infrastructure in Nigeria. The study recommended that investors critically and objectively study and understand the tax base dynamics and tax rates as they affect their taxable income from their investments.

Keywords: Economic development, employment rate, infrastructure, tax base, tax structure.

JEL Classification: H11, O11

Paper Type: Research

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1. INTRODUCTION

1.1 The Study Background

Over the years, economic development has gained prominence in tax revenue generation among the world’s nations. Improving standards of living and the level of human capital development had always been the priority of countries. However, the world’s advanced economies had gone far ahead, having realized the challenges of economic development earlier enough (Schultz, 2019). Desislava (2018) stated that the United States of America spent an average of 45% of her annual budget on skills and human capital development. International Monetary Fund (2016) stressed that economic development structure is pivotal as an ideal design of improving Gross Domestic Product per capita of nations. Desislava (2018) posited that people’s living standards largely depend on many European Union countries, and these factors differ from one country to another. Economic development policies in each country trail the line of each country’s policy objectives and the desire to raise enough revenue to execute social goods and improve citizens’ living standards (Al-tarawneh, Khataybeh & Alkhawaldeh, 2020; Baiardi, Profeta, Puglisi & Scabrosetti, 2019).

One of the problems of under economic development in Nigeria was attributed to the governments’ inability to invest in infrastructures, social inclusion, creation of jobs and youth empowerment, and improving the economy’s human capacity base (Babatunde, Ibukun & Oyeyemi, 2017). They maintained that there had never been any concerted effort and sincerity of purpose by the governments in improving human capital, investing in infrastructure, improving the business environment, and the inability to promote the needed economic environment for economic development. Folayan and Adeniyi (2018) submitted that the rightful position of Nigeria in the world ranking among the developing economies had not improved as expected as a result of the instability of the macro-economic environment, low achievement in agricultural and perennial food insecurity, challenges of ensuring energy sufficiency, inadequate improvement of transportation infrastructure, the inability of driving industrialization focusing on Small and Medium Scale Enterprises.

1.2 Statement of the Problem

The economic development problem evidently on Nigeria’s infrastructural decay had been far from an impressive one over the years. These have drastic and negative implications on the country’s economic development (Alade & Tule, 2017). Asaolu, Jayeola and Oladele (2018); Olaoye and Aguguom (2018) study documented that the economic development problems became compounded with the challenges in the oil sector, including sabotage of oil export terminals in the Niger Delta, which negatively affected government revenue and export earnings, as well as the fiscal capacity to prevent the economy from contracting. The capacity of government spending was equally constrained by lack of fiscal buffer to absorb the shocks, as well as leakages of public resources as a result of corruption, poor corporate governance, and unpatriotic dispositions by the leaders, and inefficient spending of the resources that could have an impactful economic development in Nigeria (Nedozie, Obasanmi & Ighata, 2014; Ogbuagu, Ubi & Effion, 2014). Ogbuagu et al. (2014) wrote on corruption, infrastructural decay, and visible evidence from Nigeria. Considering the preceding and extending the infrastructural perspective in Nigeria, this paper investigated the effect of tax structure on Nigeria’s economic development. The study’s remainder is presented in this form: Section 2
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presents an extant literature review from conceptual, theoretical, and empirical review. Section 3 considers the methodology and hypothesis development. In section 4, the data analysis, results, and discussion of findings are presented. In section 5, the study ended with a conclusion and recommendations.

2. LITERATURE REVIEW

2.1 Economic Development

Underdevelopment has degenerated over the years, which has brought lots of low capital formation, poor living standards, and increased poverty level in Nigeria. Owusu-Gyimah (2015) defined economic development as an increase in national output and changes in the technical and institutional arrangements by which it is produced. The study maintained that economic development is economic growth plus structural change, that structural change means changes in institutional and technological factors that cause a shift of labour from agriculture to modern manufacturing and service sectors and generate self-sustaining growth of output. Taci and Gerxhaliu (2018) made additional emphasis on the economic nexus between economic growth and economic development, that while economic growth measures an increase in the real gross domestic product (real output), that measures the total volume of goods and services produced in an economy economic development looks at a broader range of statistics than just GDP per capita. Hence, development is concerned with how people are affected in terms of living standards.

2.2 Economic Infrastructure

Infrastructure development is related to the quality of social services, especially in the aspect of healthcare facilities, good road network, power and energy, education, and other social welfare goods and services that could improve and enhance the quality of life of both the rural and urban dwellers (Manggat, Zain & Jamluddin, 2018). Sullivan and Sheffrin (2013) defined infrastructure as structural and physical amenities needed by the community in general for humanity’s welfare. The infrastructure includes industries, buildings, roads, bridges, health services, good corporate governance, and many others that affect and enhance acceptable living standards.

Olufemi, Olatunbosun, Olasode, and Adeniran (2013) documented that infrastructure development is the engine and powerhouse of economic development, that urban areas are often synonymous with adequate facilities or fundamental infrastructure, unlike rural areas. Infrastructural facilities as necessities, living standards, and economic development hover around infrastructural development (Egbunike, Ochuko & Gunardi, 2018). Oyede (2012) stated that communication, electricity, potable water, effective and efficient healthcare services, and good roads are essential features that can enhance economic development. According to Olaoye et al. (2017), tax revenue contraction negatively affected the government’s capacity to invest in infrastructure development due to the multinational corporations’ huge profit shifting activities in Nigeria.

Hadjimichael, Kemeny, and Lanahan (2014) stated that economic development is a deliberate intervention policy to improve citizens’ social and economic well-being. The study argued that it is concerned with improving the quality of living standards of the people, introducing new goods and services using innovations, and mitigating any associated risk and development of entrepreneurial skills for all classes of people in society. The main goal and objective of economic development are to create an enabling
environment for the urban and rural areas to develop new ways of producing goods in such quantities that may lead to exportation to other countries. Availability of financial resources from exportation leads to more investment in infrastructure for the benefit of the society and improvement in the living conditions of the people, in education, transportation networks, healthcare, water supply, sewage and sanitation conditions (Hadjimichael et al., 2014; Ofoegbu, Akwu & Olive, 2016; Olaoye & Aguguom, 2017).

2.3 Tax Rate

In Nigeria, most tax rates are published by the tax authorities; and institutions are mandated by the tax authorities to deduct at source and remit; withholding taxes are deducted at source in respect of companies as contained in section 78, 79, 80, and 81 of CITA Cap C21 LFN 2004 and provisions are dealing with dividends, rent, interest, royalties, commission, consultancy and professional services, technical services, directors emolument, etc. which has a tax rate of 10% while building construction. Contract of supplies has 5% each as collectable tax rates by the Federal Inland Revenue Service (FIRS).

2.4 Tax Base

According to Amadi and Alolote (2019), Nigeria’s tax base is the total taxable assets, properties, or taxable income of personal or corporate organizations. Egbunike, Ochuko, and Gunardi (2018) further stressed that this includes total revenues accruable to the government from taxpayers’ taxable assets, property, and income. This is the total tax portfolio of countries: In the United States, tax portfolios include sales tax, property tax, corporation tax, and income tax (Krugman, 2019). In Nigeria, this consists of Personal income taxes (PIT), Company income taxes (CIT), and Petroleum profit tax (PPT), Custom, and excise duties (CED).

2.5 Theoretical Framework

2.5.1 Tax Revenue Theory

Bhartia propounded the tax revenue theory in the year 2009 (Bhartia 2009). The author of the theory derived the tax revenue theory because there is no need and unnecessary for an association between tax payment and the derivable benefit from government activities. The author also brought to light some other theory he considered related to tax revenue theory. There are supporters of the tax revenue theory, as well as critics. While the study of Desislava (2018) supports the theory, it posited that the tax revenue theory encourages the citizens to see tax as a civic responsibility and should be patriotic in faithfully discharging their civic obligations to the government. It said that no tax payment amount will ever equate to the benefits being derived from the government.

On the contrary, the study of Gasteratos, Karamalis, and Koutoupis (2016) in line with an earlier postulation of Anyanfo (1996) who vehemently opposed to the theory, this assertion is not consistent with earlier postulated benefit received theory that believed that tax should be paid in line with the amount of benefit being derived from the government (Anyanfo, 1996). The study opined that the state is the sole custodian of the public enterprises that are generating revenue. Hence, there is no real rationale for imposing taxes on the same masses that do not see the state’s collective enterprise’s accounts being managed by a few government officials. The theory is suitable for this study since
tax payment, and service delivery is connected to tax revenue theory. In most countries of the world, when the government considers her total revenue, a reasonable amount of that revenue comes from taxation, thus making tax revenue relevant to economic development for society’s benefit.

2.5.2 Empirical Review

Adegbola, Nikollaos, and Ibe (2018) investigated the effect of infrastructure quality index on urban development and economic growth. The study used primary data obtained using a structured questionnaire and employed multivariate geostatistical data obtained from World Bank’s enterprise survey, United States Agency for International Development’s demographic health survey, and NBS General household survey-panel survey. However, the World Bank enterprises were chosen as the appropriate dataset for the study’s pilot test. Apart from providing comparative indices across all the 36 states of Nigeria and the Federal Capital Territory, the survey allowed for benchmark comparator against other countries. The study found that access to electricity, aggregate energy use, electricity connection, electricity consumption power availability, transportation availability, internet use, cyber-security telecommuter penetration, teledensity, and uptake of high-speed Internet are insufficient and negatively affecting economic growth and development of all the states in Nigeria including the Federal Capital Territory.

Yan (2012) examined revenue diversification’s effect on revenue volatility, which varies in terms of the instability of a state’s economic base. To this effect, the study empirically examined the effect of the independent variable on the dependent variable in an attempt to answer the question, an econometric model that explores a series of factors that could affect revenue stability is estimated using panel data on state governments for a period of 19 years (1996-2004). The study then found that revenue diversification reduced revenue instability for economically stable states. However, diversification diminishes the revenue-stabilizing effect as the state’s economic instability increases for the study period under consideration.

Mbanefoh (2012) studied taxation principles to compare the proportion of the combined revenues collected by each of the federal and state governments for 24 years (1970-1993). The study revealed that the state government’s independent revenue as a proportion of the federal and state government average about 6.6 percent. This explains why the state governments depend on the federal government for over 70 percent of their recurrent revenue. On average, state governments generated only 22.5 percent of their total recurrent revenue from internal sources. Only 18 percent of state government total expenditures are financed from their independent revenue sources from 1970 to 1993.

Furthermore, there is an observed horizontal fiscal imbalance between the per capita distribution of income and wealth and the volume of business transactions among the states. These differences resulted in wide disparities in per capita revenue collection potentials of the states. These disparities reflect the possible differences in each state’s fiscal capacity, fiscal need, and fiscal comfort or stress.

Anyanwuu (2014) studied monetary economics, theory, policies, and institutions. The focus was on the effects of taxes on Nigeria’s economic growth using the Ordinary Least Square technique and Cochrane- Orcutt and data set for 16 years (1981 to 1996). The study concluded that both companies’ income tax, customs, and excise duties positively and significantly associated with Gross Domestic Product. In contrast, the petroleum profits
tax is positively but insignificantly related to economic growth. The study found that that personal income tax had an insignificant negative effect on economic growth.

3. METHODOLOGY

This study investigated the effect of tax structure on economic development from the infrastructural perspective. This study’s population consisted of all the 4,200 tax practitioners and senior management staff of the Federal Inland Revenue Service in Lagos State. At the same time, Taro Yamani’s formula was used to determine the sample size of 365. The formula is:

\[ n = \frac{N}{1 + N * e^2} \]

Where
- \( n \) = the sample size
- \( N \) = the population size
- \( e \) = the acceptable sampling error

*95% confidence level and \( p = 0.5 \) are assumed

Therefore,
- \( n = \frac{4200}{1 + (4200 (0.05)^2)} \)
- \( n = 4200 / 11.5 \)
- \( n = 365.22 \)

Similarly, Cronbach’s Alpha reliability coefficients take values between 0.864 and 0.952. The study employed a survey research design, using structured questionnaires administered to senior members of Federal Inland Revenue Service and senior tax practitioners in Lagos State. A total of 85% rate of the questionnaire administered were retrieved while descriptive and inferential statistics were used for the data analysis.

3.1 Model Specification

**Research Question:** Does Nigeria’s tax structure causes economic development from the standpoint of infrastructural deficiencies?

**Research Objective:** To examine the effect of Nigeria’s tax structure and economic development from the standpoint of infrastructural deficiencies.

**Research Hypothesis (H0):** Nigeria’s tax structure does not affect economic development from the standpoint of infrastructural deficiencies.

**Research Equation**

\[ Y_i = \beta_0 + \beta_1 X_i + \mu_i \] \hspace{1cm} Equation (1)

Where:
- \( Y \) = Dependent Variable: Economic Development (ED)
- \( X \) = Independent Variable: Tax Structure (TS)
- \( INF = f(TAXB, TAXR) \) \hspace{1cm} Equation (2)
Models

\[ \text{INF}_i = \beta_0 + \beta_1 \text{TAXB}_i + \beta_2 \text{TAXR}_i + \mu \]

Where:
- \( \beta_0 \) = regression intercept which is constant
- \( \beta_1 \) = the coefficient of the explanatory variables
- \( \mu \) is the error term of the model
- \( i \) = Cross-sectional
- INF = Infrastructure
- TAXB = Tax Base
- TAXR = Tax Rate
- ED = Economic Development

4. DATA ANALYSIS, RESULTS, AND DISCUSSION OF FINDING

Table 1 presents the regression Model Summary and ANOVA table. In the regression model, the predictors are Tax Base (TAXB) and Tax Rate (TAXR), while the dependent variable is Infrastructure (INF).

<table>
<thead>
<tr>
<th>Model Summary and ANOVA</th>
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<tbody>
<tr>
<td><strong>R</strong></td>
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<tr>
<td>0.834</td>
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</table>

**ANOVA**

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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<tbody>
<tr>
<td>Regression</td>
<td>294.536</td>
<td>2</td>
<td>147.268</td>
<td>413.700</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>128.864</td>
<td>362</td>
<td>0.356</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>423.400</td>
<td>364</td>
<td></td>
<td></td>
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</table>

Source: Author's Computation, 2020; underlying data from Field Survey.
Note: Predictors are (Constant), Tax Base (TAXB), and Tax Rate (TAXR). Dependent variable is Infrastructure (INF).

From the computed value, F-statistics = 413.700; Sig. value = 0.000. Consequently, these values depict that the overall effect of the tax structure proxies (Tax Base (TAXB) and Tax Rate (TAXR)) on Infrastructure (INF) is statistically significant at 1 percent level. As well, the value of the adjusted R\(^2\) is 0.696. This is an indication that about 69.6 percent of changes in Infrastructure (INF) are jointly caused by Tax Base (TAXB) and Tax Rate (TAXR). These depict that the model that investigates the effect of tax structure proxies (Tax Base (TAXB) and Tax Rate (TAXR)) on Infrastructure (INF) is adequate.

The summary of the regression results that investigates the effect of Tax Structure on Infrastructure is presented in Table 2.

\[ \text{INF}_i = \alpha + \beta_1 \text{TAXB}_i + \beta_2 \text{TAXR}_i + \varepsilon_i \]

\[ \text{INF}_i = -1.296 + 0.033 \text{TAXB}_i + 1.169 \text{TAXR}_i + \varepsilon_i \]

<table>
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<tr>
<th>Table 2. Regression Coefficients</th>
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<tr>
<td>Unstandardized Coefficients</td>
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<tr>
<td>B</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>TAXB</td>
</tr>
<tr>
<td>TAXR</td>
</tr>
</tbody>
</table>

Note: Predictors are (Constant), Tax Base (TAXB), and Tax Rate (TAXR). Dependent variable is Infrastructure (INF).
INF\textsubscript{i} = -1.296 + 0.033TAXB\textsubscript{i} + 1.169TAXR\textsubscript{i} + \varepsilon\textsubscript{i} ............................................ Model

Based on Model one results in Table 2, \((INF\textsubscript{i} = -1.296 + 0.033TAXB\textsubscript{i} + 1.169TAXR\textsubscript{i} + \varepsilon\textsubscript{i})\), the result from the study revealed that each of the coefficients of tax base and tax rate was positively signed and consistent with the study expectations \((\beta_1 = 0.033; \beta_2 = 1.169) > 0\). This implied that a unit change in tax base and tax rates would bring about an increase of 0.033 and 1.169, respectively, in infrastructure in Nigeria.

From the regression model that investigates the effect of Tax Structure (i.e., Tax Base (TAXB) on Tax Rate (TAXR)) and Infrastructure (INF), the estimated coefficients are reported in Table 4.2.8. According to the results, the unstandardized coefficient of Tax Base (TAXB) shows a positive sign, but it is statistically insignificant \([\beta =0.033; \text{Sig. - value} = 0.607]\). The inference from this result is that Tax Base (TAXB) has a positive effect on Infrastructure (INF). However, the positive effect is not statistically significant. Therefore, one may conclude that the effect of Tax Base (TAXB) on Infrastructure (INF) is not a statistically significant one. In contrast, Tax Rate (TAXR) is found with a coefficient that is positively and significantly related to Infrastructure (INF) at 1 percent alpha level \([\beta = 1.169; \text{Sig. - value} = 0.000]\) this suggests that TAXR drives Infrastructure (INF), and a unit increase in Tax Rate (TAXR) caused Infrastructure (INF) to improve by 1.169 units. By way of comparison, the results show that Tax Rate (TAXR) is the only determining factor of Infrastructure (INF) according to the estimated coefficients.

From the Collinearity Statistics columns in the Table, we found no harmful effect of multicollinearity in the estimated model given the VIF values of less than 3 and the corresponding tolerance values above 0.10. That considered the effect of tax structure on infrastructure. The result revealed that a tax structure had a positive statistical significance on infrastructure. This result is consistent with prior studies of (Kargi (2014; Yan, 2012). However, the study is inconsistent with the result found by the study of Adegbola, Nikollaos, and Ibe (2018), who investigated the effect of infrastructure quality index on urban development and economic growth, and found that access to electricity which is consistent with the result of this study. The study of Flossy, Makoka, and Namusonge (2017), aggregate energy use, electricity connection, electricity consumption power availability, transportation availability, Internet use, cyber-security telecom penetration, teledensity, and uptake of high-speed Internet are insufficient and negatively affecting economic growth and development of all the states in Nigeria including the FCT.

5. CONCLUSION AND RECOMMENDATIONS

In conclusion, this study examined the effect of tax structure on economic development from Nigeria’s perspective. The study employed infrastructure to measure economic development as the dependent variable. In contrast, the tax base and tax rate were employed to measure the study’s tax structure. The study found that tax structure has a positive statistically significant effect on infrastructure in Nigeria. The study noted that the level of infrastructural decay in Nigeria is deplorably worrisome. The level of epileptic and erratic power supply, terrible and bad roads, below the poverty line living standards of the rural area dweller and non-existence of potable water and many more; these should urgently be addressed by the government to improve the living standards of the people and foster economic development in Nigeria.
REFERENCES


