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Effect of Revenues Leakages on Economic Development in Nigeria

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Abstract
The study investigated the effect of revenues leakages on economic development in Nigeria for the duration of 2000-2020. This was done in accordance with revenues leakages measures, such as the Tax Evasion and Avoidance of Oil Revenue (TEAOR), Tax Evasion and Avoidance of Tax Revenue (TEATR) and Tax Evasion and Avoidance of Total Revenue (TEATTR) and their respective effect on economic development proxied with Human Development Index (HDI) in Nigeria. The secondary used in this study, were sourced from Budgit Budget Analysis Report, Central Bank of Nigeria (CBN), Federal Inland Revenue Service (FIRS), World Bank Statistical Bulletin and National Bureau of Statistics (NBS) for the period 2000-2020. In order to obtain an accurate regression result, the data set was defined using descriptive statistics, and the unit root test was used to determine if the data were stationary. The correlation analysis will be used to determine the independent variables' co-movement in connection to the dependent variable, while the Multiple Regression analysis was used to assess the research hypotheses raised using E-VIEW version 9.0. The findings found that Tax Evasion and Avoidance of Oil Revenue (TEAOR) has negative insignificant effect on Human Development Index (HDI) while Tax Evasion and Avoidance of Tax Revenue (TEATR) and Tax Evasion and Avoidance of Total Revenue (TEATTR) has negative significant effect on Human Development Index (HDI) in Nigeria. As a result, the study revealed that there is a mixed link between revenues leakages and economic development in Nigeria. As a result, the paper recommends that in order to reverse the negative effects of tax leakages on economic development, government should provide employment opportunities to all by the judicious use of tax proceeds, which will promote high rate of tax compliance, thereby reducing to a tolerable limit, the twin problems of tax evasion and avoidance.

Key Words: Revenues Leakages, Economic Development, Tax Evasion and Avoidance, Oil Revenue and Tax Revenue.

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I. Introduction

The level of resource mobilization within a country's economy has a big impact on its economic progress. That is perhaps why every government in power takes the subject of revenue generation and leakages seriously. The purpose of revenue creation is to meet citizens' basic social and infrastructure demands (Nakah, 2018). Nigeria is a country rich in material resources, with oil being the most valuable. Prior to the discovery of oil in Nigeria, the agricultural sector was the mainstay of the Nigerian economy, accounting for nearly 85% of foreign exchange revenues, over 60% of employment capacity, and around 52% of gross domestic earnings (Azevedo, 2019).

Nigeria's petroleum sector became the largest when commercial oil was discovered. Oil accounts for over 90% of foreign exchange profits and around 80% of federal revenue, and it contributes to the Nigerian economy's growth rate. Nigeria's strong agricultural and light manufacturing roots were neglected after the discovery of oil in the 1970s, in exchange for an unhealthy reliance on oil money (Akinlo, 2012) as referenced in (Akinlolu and Nejo, 2020). However, since the discovery of oil in Nigeria, there has been a paradigm shift away from previous sources of income such as agriculture and toward solely oil exploration. This means that revenues accruing to an economy such as Nigeria can be divided into two categories: oil revenue (including

royalties, petroleum profit tax (PPT), gas tax) and non-oil revenue (including trade, loan, direct and indirect taxes paid by other sectors of the economy, aids, and agriculture) (Akinlolu and Nejo, 2020).

However, because of various types of resistance such as tax evasion and avoidance, tax revenue mobilization as a means of supporting developmental initiatives in less developed nations has been a problematic issue. These activities are damaging the economy and are frequently cited as a factor for the country's underdevelopment. Taxes are collected by the government in order to provide efficient and steadily developing non-revenue-generating services. Tax is also a nexus between states and their citizens, and tax money is the social contract's lifeblood. The act of taxes itself has a significant positive impact on the development of better and more responsible governance (Abiahu & Amahalu, 2017).

The contribution of tax revenue in Nigeria has been disappointing; hence the government's expectations have been lowered. Tax evasion and avoidance are the most common indicators of poor revenue. Tax evasion and avoidance lower the government's budget every year, regardless of tax values. Government revenue is harmed by tax evasion and avoidance. Tax evasion causes investment distortion by causing people to buy assets that are either tax-free or undervalued for tax purposes (Klabel & Nwokah, 2009, cited in Okoye, Amahalu, and Obi, (2018). Investment in art collections, exodus of people and capital are all examples of avoidance. According to Okoye, Amahalu, and Obi (2018), tax evasion occurs through a variety of methods. Moral values are eroded, and inflationary pressure is increased as a result of these actions. The notion can be supported by the fact that tax evasion results in a large take-home profit for individuals and businesses. This increases the amount of money in circulation without equivalent increases in products and services, resulting in what is known as inflationary trends, in which enormous amounts of money pursue a small number of goods (Okoye, et al, 2018).

Even before the former Central Bank Governor, Mallam Sanusi Lamido Sanusi, made startling revelations about alleged missing $48.9 billion in oil revenue, one issue that has never been lost in public discourse thrusts on good governance and judicious utilization of the country's resources is the need for tax payers to get value for fulfilling their own part of the governance social contract. The need for Nigeria to raise tax revenue and ensure its judicious utilization for accelerated development cannot be overstated, given the last few years of international oil market uncertainties, threats of macroeconomic instability in many developed economies, deepening poverty, rising youth unemployment, insecurity, and a lack of infrastructure that should normally drive growth in the economy (Eme, Chukwurah and Emmanuel, 2016).

Unfortunately, despite years of tireless advocacy by fiscal policy experts, civil society organizations (CSOs), and other stakeholders for fairness and transparency in the use of earned incomes from taxation, concrete gains have yet to be achieved because political leaders and their public servant collaborators at all levels of government have yet to commit to plugging leakages in tax revenue generation, remittance, and utilization. This is despite the federal and state governments' adoption of a variety of tax reform measures, including policy and regulatory guidelines, as well as the streamlining of the country's previously complex and multi-layered tax system, with the goal of broadening the scope of the country's tax revenue sources. In order to achieve this goal, the Office of the Accountant General of the Federation (OAGF) set a deadline of February 28 for all Federal Government Ministries, Departments, and Agencies (MDAs) that have not yet adopted the Treasury Single Account (TSA) regime, which is housed at the Central Bank of Nigeria (CBN) and regulated by the OAGF. The directive was in line with Dr. Ngozi Okonjo Iweala, then-Coordinating Minister for the Economy and Minister of Finance, who promised on December 17, 2014 that the government would stop all leakage as part of measures to boost revenue and compensate for the shortfall caused by the drop in oil prices on the international market (Eme, et al, 2016).

Most studies on the impact of revenue leakages proxied by tax evasion and avoidance on economic development are conflicting or ambiguous, citing both positive and negative results. Ellawule (2018) discovered that tax evasion has a major impact on a state's economic development. Tax evasion has a beneficial influence on the gross domestic product per capita, according to Aumeerum, Jugurnath, and Soondrum (2016). According to Fatoki (2014), as quoted in (Okoye, et al, 2018), tax evasion has harmed Nigeria's economic growth and development, and that tax evasion and avoidance are caused by a lack of effective governance and unpatriotic acts by tax payers. Also, as mentioned in (Okoye, et al, 2018), Bismark, Bismark, Eric, and Isaac (2015) found that tax evasion has a negative impact on Ghana's socioeconomic development.

Based on the above contributions, there is a clear knowledge gap that this study aims to fill. This study empirically investigated the consequences of income leakages on Nigeria's economic progress in an attempt to fill a gap in the literature. As a result, the following gaps were considered: variable gap: this study focused on an economic measurement variable that reflected Nigeria's human development index (since previous studies had not taken infant mortality and life expectancy into account) and also, previous research used primary data to examine revenue leakages (as measured by tax avoidance and evasion of oil revenue, non-oil revenue, and total revenue), but this study used secondary data, time-gap: this study was prolonged through 2020, covering a period of twenty-one (21) years from 2000 to 2020 (which past studies have yet to explore, to the best of the researcher's knowledge), necessitating this investigation.

II. Review of Related Literature

Conceptualizing Revenue Leakages

It is axiomatic to assert that there has been growing awareness and lobbying for openness in the administration of revenue from natural resources, particularly in oil-rich countries such as Nigeria, which is afflicted by the 'resource curse.' This is because, despite the immense wealth generated by oil and gas activities, its population does not reap the benefits of such vast resources. "Lack of transparency is considered as a fundamental barrier to the formation of a favorable investment climate, better management of public resources, and poverty reduction," Aderinokun (2010) found, as cited in (Eme, et al, 2016). "Efficient, transparent governments, closely observed by citizens with access to reliable, timely information on state spending can help rebuild faith in public institutions and strengthen democracy," writes Ugolor (2009), referenced in (Eme, et al, 2016). Transparency guarantees that the information accessible can be utilized to assess the performance of the authorities and guard against any potential abuse of power. Transparency, in this sense, attempts to achieve accountability. As a result, proper openness is vital to ensuring that resources and wealth are handled for the benefit of the entire people (Nicholas, 2009), which is quoted in (Eme, et al, 2016).

The absence of accountability and transparency in these earnings can exacerbate bad governance in some countries, leading to corruption, violence, and rising inequality. As a result, Katsouris (2009) argues that an abundance of natural resources is more often a "burden" than a "gift" for emerging countries (Eme, et al, 2016). Strengthening transparency and accountability in Nigeria's oil and gas sector is an opportunity to reduce revenue leakage and corruption by strengthening the sector's governance and reducing the many incentives for abuse of power and revenue capture that distort policy and politics in Nigeria and undermine the country's ability to use oil revenues to accelerate economic and social development (Muller, 2010) cited in (Eme, et al, 2016).

Greater openness is widely acknowledged around the world as being necessary in natural resource-rich states to improve accountability, prevent corruption, and strengthen good governance (NEITI, 2009) cited in (Eme, et al, 2016). The principle of transparency, which goes hand in hand with openness, mandates that the government provide citizens with the right to know what is going on in government. In terms of fiscal transparency, this entails a clear understanding of duties and responsibilities, open access to information, transparent budget development, execution, and reporting, and independent assurances of integrity. Transparency in income, according to Eme et al. (2016), is a powerful arrow in the quiver for eliminating corruption and fraud, improving productivity and output, and increasing accountability in the oil industry.

Revenue Transparency, according to El-Rufai (2003), as mentioned in (Eme, et al, 2016), will promote accountability in both the executive and legislative branches of government at all levels (federal, state, and local), limiting opportunities for corruption and potential waste of public monies. Extractive industries (oil, gas development, and mining) generate revenue for governments in producing countries. These resources should serve as a foundation for poverty reduction and economic progress if they are appropriately managed and developed with the cooperation of affected communities. However, these funds are frequently squandered, creating corruption, war, and societal division. The petroleum business is the most strategically important industry on the planet. The importance of oil and gas to Nigeria's economy cannot be overstated. The term "transparency" refers to the need that payments made by oil and gas firms to the government for the extraction of natural resources be made public. Transparency is viewed as a vital first step toward a more accountable natural resource management system in Nigeria.

Furthermore, (Ezekwesili, 2010) as referenced in (Eme, et al, 2016), revenue transparency contributes to proper management and financial accounting, without which processes and costs cannot be mapped, reported, reviewed, or benchmarked. Furthermore, by insisting on the use of minimum input, cost reduction, and process improvement (El-Rufai 2003), transparency in income generation lowers resource waste (Eme, et al, 2016). In Nigeria, the situation is reversed due to revenue leakages. According to Investopedia (2011), referenced in (Eme, et al, 2016), 'leakage' is defined as the escape of money from the economy, resulting in a discrepancy between supply and demand. If consumers spend their money outside of their town or country, firms must look for other ways to compensate. In Keynesian economics, governments may be forced to inject cash into the system if capital leakage occurs. To put it another way, it is a condition in which capital, or income, leaves rather than stays in an economy or system. Leakage is a term used in economics to describe the outflow from a circular flow of money. When products and services are purchased, all individual revenue is returned to employers, and salaries and dividends are returned to employees in a two-sector model. When money is pulled out of the economy through taxes, savings, and imports, it is called leakage. Leakage is a term used in the retail industry to describe customers who spend money outside of their local market.

Revenue Leakage has been an ubiquitous phenomena, according to Hariharan (2009) as mentioned in (Eme, et al, 2016), eating at the profit margins of service and transaction-based enterprises. To combat this hazard, service providers in industries like telecommunications have developed effective revenue assurance systems. Although bank executives and management recognize the existence of revenue leakage, they are

unable to pinpoint its source or magnitude. Banks want assistance in identifying revenue leakage sources/points, measuring revenue loss, and minimizing/avoiding revenue leakage. Another key requirement for them is to have proper control mechanisms and reporting tools in order to predict probable leakage spots. Incorrect pricing, operational inefficiencies, missing transactions, unpriced transactions, uncollected revenues, and other factors can cause revenue leakage. There can be cracks that lead to revenue leakage at many stages of the customer relationship life cycle, including prospecting, on boarding, transaction processing, invoicing and recovery, monitoring, and service closure. There is no one-step cure for these fissures, however. Aside from frequent revenue audits, system integration reviews, customer performance tracking, and the elimination of manual operations, banks require a "Centralized Pricing and Billing Platform" to plug leakage gaps. This white paper explains how banks can turn revenue assurance into a big opportunity by implementing centralized relationship-based pricing and invoicing solutions that ensure profitability, client loyalty, and fee income inflow.

Tax Leakages

Capital or income that leaves an economy or system rather than remaining inside it is referred to as leakages. An outflow from a circular flow of revenue model is referred to as this. It occurs when income is depleted due to taxes, savings, and other sources of income. Tax leakages relate to revenue lost as a result of the financial system's numerous loopholes. Tax leakages, also known as revenue leakages, have long plagued the services and transaction-based industries, eroding profit margins (Hariharan, 2009) cited in (Okoye, et al, 2018). When compared to industrialized economies, the factors responsible for tax evasion in Nigeria and other emerging nations are tremendous. These could be linked to the development process, which most industrialized countries have successfully navigated over time. Corruption is the most worrying aspect that promotes revenue leakages in Nigeria, according to Kiabel & Nwokah (2009) as mentioned in (Okoye, et al, 2018). Mismanagement of tax funds, illiteracy among tax payers, low standard of living, and so on are some factors that contribute to tax leakages, according to Onyewuchi & Njemanze (2016).

Tax evasion

Tax evasion is the intentional and purposeful failure to disclose all taxable income to tax authorities in order to pay less tax. It is a violation of tax regulations when a taxable individual fails to pay the tax due or decreases his or her tax burden by making false or fraudulent statements on the income tax form (Soyode & Kajola, 2006). (Okoye, et al, 2018). Tax evasion occurs when a taxpayer refuses to pay tax or tries to reduce his tax liability in an illegal manner. It was defined by ICAN (2004), as mentioned in (Okoye, et al, 2018), as fraud and deception by intentionally refusing to declare all sources of income on tax filings or understating income on tax forms. Tax evasion can be whole or partial, according to Gourama, Mansor, and Pantanmee (2015), as referenced in Okoye, et al, 2018. It is complete when a citizen who is eligible to pay tax refuses to register for the purpose of paying tax, but it is partial when a tax payer manipulates his income to lower his tax burden.

Tax avoidance

This essentially means lowering or avoiding one's tax burden. The tax payer strives to maximize all exemptions, deductions, concessions, allowances, and other tax relief or benefits available under the law (Ihuoma, 2013) mentioned in (Okoye, et al, 2018). Tax avoidance, according to Anyafa (2016), is an attempt to avoid culpability by evading the law rather than breaking it; he refers to a tax payer's attempt to avoid paying tax by using a legal gap in the tax system. Tax evasion is a lawful practice that aims to save money by lowering taxable income. Tax can be avoided by turning taxable income into nontaxable income at a lower bracket rate. For example, business owners who are aware that tax is levied on profits may declare no profit and claim that they did not make any. Also, in the event of estate tax, tax could be avoided by designating gifts to charity organizations, educational institutions, research, and religious organizations.

Concept of Economic Development

Economic development is defined as a process through which a country enhances its people's social, economic, and political well-being (Folawewo and Osinubi, 2006). (Okoye, et al, 2018). While economic development is a policy intervention aimed at enhancing people's economic and social well-being, economic growth is the reality of increased market productivity and gross domestic product. As a result, economic progress is characterized by growth. Economic development can also be defined as the long-term coordinated efforts of policymakers and communities to improve a region's standard of life and economic health. It could be referred to as the economy's quantitative and qualitative changes. Human capital development, key infrastructure, regional competitiveness, environmental sustainability, social inclusion, health safety, literacy, and other programs are examples of economic development actions (Okoye, et al, 2018).

Theoretical Framework

Benefit Received Theory

This assumes that the state and the taxpayer have an exchange or contractual relationship. Certain products and services are provided by the state, and the cost of these goods and services is deducted from the amount of the benefits received; this benefit serves as the foundation for sharing the tax burden in a specified manner. Chogbu, Akujuobi, and Appah (2012) perceive the cost of service theory as being quite close to the benefit gained (Okoye, et al, 2018). The approach places a larger emphasis on the state's semi-commercial relationship with its population. According to Chigbu et al (2012), as quoted in (Okoye, et al, 2018), citizens are not entitled to any governmental benefits and, if they do, they must pay for them.

Empirical review

Okoye, Amahalu, and Obi (2018) looked at the impact of tax leakages on Nigeria's economic progress from 2008 to 2017. It looked into how tax evasion and avoidance affected economic development, as assessed by GDP per capita, infant mortality, and life expectancy. Three hypotheses were established and tested utilizing secondary data gathered from the Central Bank of Nigeria, the Federal Inland Revenue Service, World Bank Statistical Bulletins, and the National Bureau of Statistics in order to achieve the study's goals. This research is based on data from a time series. The time series data was tested for stationarity using the Augmented Dickey Fuller method. In order to analyze the data, we used Ordinary Least Square regression. The findings of this study indicated that tax evasion had a considerable negative impact on Nigeria's economic development, with a significance level of 5%. Based on the findings, it was suggested, among other things, that the federal government use tax revenues wisely to provide essential facilities for citizens, such as health care, education, and so on, as this would reduce infant mortality and promote tax compliance among taxpayers.

Ellawule (2018) investigated the impact of tax evasion on Yobe state's economic development. Using secondary data and chi-square, the statistical package for social science (SPSS) version 20 was used to analyze the data and find that tax evasion had a major impact on the state's economic development. According to the report, the state administration needs to enhance governance and eliminate insurgency in the state.

The impact of tax evasion on government revenue generation in Oyo state was investigated by Folayani and Adeniyi (2018). With a structured questionnaire and a sample of 165 respondents drawn at random from around the state, as well as secondary data from the National Bureau of Statistics (NBS), the Office of Budget and Economic Planning, and the Internal Revenue Office from 2011 to 2016, the study was conducted. The data was analyzed with the use of the statistical package for social science (SPSS) window 23 and a descriptive and inferential statistic tool. Their findings revealed that tax evasion has a negative impact on government revenue collection in Oyo State, resulting in revenue loss. They suggested that the government launch a big public education campaign and spend enough tax income on public amenities to deter tax cheating and lower tax rates.

III. Methodology

Introduction

An ex-post facto research design was used for this investigation. Ex-post Facto is a method of determining the elements that are linked to a specific occurrence, situation, event, or behavior by examining prior events or data for possible causal factors (Kothari & Garg, 2014). The data used in this investigation was primarily secondary data. To ensure the empirical result's robustness, the study's scope was extended from 2000 to 2020. Budgit Budget Analysis Report, Central Bank of Nigeria (CBN), Federal Inland Revenue Service (FIRS), World Bank Statistical Bulletin, and National Bureau of Statistics publications provided secondary and time series data (NBS).

Research Variables

Independent Variables

The independent variable in this study is Revenue Leakages, which was proxied with tax evasion and avoidance of oil, tax and total revenues:

i. Tax Evasion and Avoidance of Oil Revenue (TEAOR): was measured using the natural log between the difference of total budgeted oil revenue and actual oil revenue.

ii. Tax Evasion and Avoidance of Tax Revenue (TEATR): was measured using the natural log between the difference of total budgeted tax revenue and actual tax revenue.

iii. Tax Evasion and Avoidance of Total Revenue (TEATTR): was measured using the natural log between the difference of total budgeted revenue and actual revenue.

Dependent Variables

The dependent variable is economic development, which is proxied by: Human Development Index (HDI), sourced from World Bank Statistical Bulletin and National Bureau of Statistics (various issues).

Model Specification and Statistical Tool

In this study, the statistical technique of data analysis was used. The time series data will be subjected to a unit root test to determine whether or not they are stationary. After that, descriptive statistics and correlation analysis were used to assess the nature of the link between the independent; Tax Evasion and Avoidance of Oil Revenue (TEAOR), Tax Evasion and Avoidance of Tax Revenue (TEATR) and Tax Evasion and Avoidance of Total Revenue (TEATTR) and the dependent [Human Development Index (HDI)] variables. The computer statistical software E-VIEW 9.0 was used to do multiple regression analysis through the Regression model. This is the proper procedure for analyzing data in relation to the study in issue. The model is specified below:

HDI = f(TEAOR, TEATR, TEATTR)

$HDI = \beta_0 + \beta_1 TEAOR + \beta_2 TEATR + \beta_3 TEATTR + U$

Where:

HDI = Human Development Index, β_0 = Constant Term, β_1=Coefficient of Tax Evasion and Avoidance of Oil Revenue, TEAOR = Tax Evasion and Avoidance of Oil Revenue, β_2 = Coefficient of Tax Evasion and Avoidance of Tax Revenue, TEATR = Tax Evasion and Avoidance of Tax Revenue, β_3 = Coefficient of Tax Evasion and Avoidance of Total Revenue, TEATTR= Tax Evasion and Avoidance of Total Revenue, U = Disturbance Term (other variable not mentions in the model) and the a priori expectation is $\beta_1, \beta_2, \beta_3 > 0$.

IV. Discussions of Result

Table 4.1: Descriptive Statistics

	HDI	TEAOR	TEATR	TEATTR
Mean	0.468095	2.823835	2.815931	5.639766
Median	0.500000	3.044148	2.900913	5.996698
Maximum	0.592000	3.320354	3.217484	6.354982
Minimum	0.132000	1.234983	1.778151	3.074816
Std. Dev.	0.108236	0.657266	0.311022	0.825855
Skewness	1.982492	1.533427	1.857130	1.864946
Kurtosis	6.225266	3.879443	7.031475	5.904085
Jarque-Bera	22.85801	8.906633	26.29246	19.55258
Probability	0.000011	0.011640	0.000002	0.000057
Sum	9.830000	59.30053	59.13455	118.4351
Sum Sq. Dev.	0.234302	8.639969	1.934698	13.64073
Observations	21	21	21	21

Source: EVIEW, 9.0 Outputs, 2021.

Table 4.1 above is the presentation of the descriptive statistics. The mean value for the HDI recorded a mean value of 0.4681 with a standard deviation of 0.1082 over the twenty-one year period. Also, TEAOR, recorded a mean of 2.8236 and standard deviation of 0.6573, TEATR recorded that a mean of 2.8159 with a standard deviation of 0.3110 while TEATTR recorded an average value of 5.6398 with a standard deviation of 0.8259. Since the standard deviations for all the variables are smaller than respectively means, it shows that the data is not widely dispersed.

The normal distribution has a kurtosis of three, which indicates that the distribution has neither fat nor thin tails. Consequently, if an observed distribution has a kurtosis greater than three, the distribution has heavy tails when compared to the normal distribution. Since all the kurtosis coefficients in Table 4.1 are more than 3, the data have heavy tails when compared to the normal distribution. Also, the Jarque-Bera probability for the all the variables are less than 0.05, this indicates that the data are normally distributed.

4.2. Multicollinearity Test

Since the data for the study are annual time series, the multicollinearity test was conducted to ascertain if the data contained multicollinearity, this is presented in table 4.3 below;

Table 4.2.1: Variance Inflation Factors Multicollinearity Test

Variance Inflation Factors
Date: 10/11/21 Time: 13:45
Sample: 1996 2020
Included observations: 21

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.210568	193.3090	NA
TEAOR	0.045881	814.0620	7.191451
TEATR	0.070028	1543.068	5.868512
TEATTR	0.001074	17.60722	1.374264

Source: EVIEW, 9.0 Outputs, 2021.

When two or more independent variables in multiple regression models are substantially correlated, the data set is said to be multicollinear. The variance inflation factor (VIF) was determined as stated in Table 4.3.1 to confirm the validity of the study's findings. Furthermore, for TEAOR, TEATR and TEATTR, the Centered Variance Inflation Factor (CVIF) figures consistently lie within 7.1915, 5.8685 and 1.3743, respectively. This indicates the absence of multicollinearity problems among the variables under investigation because the cut off value of VIF is 10. Values of VIF that exceed 10 are often regarded as indicating multicollinearity.

4.3 Augmented Dickey-Fuller (ADF) Unit Root Test

The Augmented Dickey-Fuller (ADF) (1979) test was utilized in this study since it is the most widely used and approved approach for testing time series stationary characteristic. In the study of time series models and co-integration, testing for the presence of unit roots is a major concern. This test is designed to eliminate the problem of spurious regression, which is typical when dealing with time series data. A unit root indicates that the time-series data under consideration is non-stationary, whereas the absence of a unit root indicates that the stochastic process is stationary. The ADF evaluates the null hypothesis of the absence of a unit root in a time series sample, and if the ADF value is less than the critical value, the time series is considered non-stationary. The underlying times series, on the other hand, is stationary when the ADF value is bigger than its critical value.

Table 4.3.1 Summary of Augmented Dickey-Fuller (ADF) Test

ADF TEST @ LEVEL					
Test Variables	**ADF Test Statistic Value**	**Mackinnon Critical Value @ 5%**	**Order of Integration**	**P-Value**	**Decision**
HDI	-4.818995	-3.029970	1(0)	0.0013	**Stationary**
TEAOR	-3.663534	-3.020686	1(0)	0.0136	**Stationary**
TEATR	-4.659286	-3.020686	1(0)	0.0016	**Stationary**
TEATTR	-4.083310	-3.020686	1(0)	0.0056	**Stationary**
ADF TEST @ 1ST DIFFERENCE					
Test Variables	**ADF Test Statistic Value**	**Mackinnon Critical Value @ 5%**	**Order of Integration**	**P-Value**	**Decision**
HDI	-3.310674	-3.029970	1(1)	0.0289	**Stationary**
TEAOR	-6.761158	-3.029970	1(1)	0.0000	**Stationary**
TEATR	-4.061134	-3.065585	1(1)	0.0076	**Stationary**
TEATTR	-7.636216	-3.029970	1(1)	0.0000	**Stationary**

Source: E-VIEW 9.0 Arranged Result, 2021.

The summary of the ADF unit root test output in Table 4.3.1 revealed that all of the variables under investigation, namely the HDI, TEAOR, TEATR and TEATTR, have unit root tests at their level and first difference 1(1), implying that the series are non-stationary at level but stationary at level and first diff 1(1). The value of their respective ADF statistics, which is more than the threshold value of 5%, is evidence of this. Furthermore, the p-value for all variables, which is less than 5% level of significance greater than 95 percent confidence level, provides additional proof of stationary series. At the first difference, i.e. at order one, they all achieved stationarity. We can use the Johansen cointegration test because all of the variables are integrated at order one.

Table 4.4.1 Johansen Cointegration Test

Series: HDI TEAOR TEATR TEATTR

Hypothesized No. of CE(s)	Eigenvalue	**Trace** Statistic	**0.05 Critical Value**	Prob.**	**Max-Eigen** Statistic	**0.05 Critical Value**	**Prob.****
None *	0.625921	48.67855	47.85613	0.0233	32.61563	27.58434	0.0105
At most 1 *	0.322427	36.06292	29.79707	0.0078	28.95248	21.13162	0.0032
At most 2 *	0.200421	17.11043	15.49471	0.0548	15.14440	14.26460	0.0235
At most 3	0.081928	5.966028	3.841466	0.0109	4.966028	3.841466	0.0109

Source: E-VIEW 9.0 Arranged Result, 2021.

This is evidenced by the fact that the value of their respective ADF statistics is greater than the threshold value of 5%. Additionally, the p-value for all variables is less than 5% level of significance greater than 95 percent confidence level, indicating that the series is stable. They all attained stationarity at the first difference, i.e at order one. Because all of the variables are integrated at order one, we can utilize the Johansen cointegration test.

Table 4.5: Correlation Matrix

	HDI	TEAOR	TEATR	TEATTR
HDI	1.000000			
TEAOR	-0.355154	1.000000		
TEATR	-0.401399	0.374963	1.000000	
TEATTR	-0.433823	0.937075	0.675025	1.000000

Source: EVIEW, 9.0 Outputs, 2021.

The correlation test, shown in Table 4.2, reveals that the variables do not have multi-co linearity since the correlation values are less than 0.7. Furthermore, the explanatory variables; TEAOR, TEATR and TEATTR have a negative strong association with HDI.

Table 4.6: Multiple Regression Analysis

Dependent Variable: HDI
Method: Least Squares
Date: 11/11/21 Time: 13:43
Sample: 1996 2020
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.785794	0.458877	1.712429	0.1015
TEAOR	-0.190110	0.214198	-0.887540	0.3848
TEATR	-0.670376	0.264628	-2.533278	0.0193
TEATTR	-0.095598	0.032771	-2.917178	0.0082

R-squared	0.914855	Mean dependent var	4.492170
Adjusted R-squared	0.902691	S.D. dependent var	0.529010
S.E. of regression	0.165021	Akaike info criterion	-0.619838
Sum squared resid	0.571873	Schwarz criterion	-0.424817
Log likelihood	11.74797	Hannan-Quinn criter.	-0.565747
F-statistic	75.21260	Durbin-Watson stat	2.392901
Prob(F-statistic)	0.000000		

Source: EVIEW, 9.0 Outputs, 2021.

The multiple regression results in Table 4.6 above, the coefficient of TEAOR is -0.1901 with a t-value of -0.8875 and an associated p-value (sig. value) is 0.3848. This suggests that TEAOR have a negative insignificant effect on HDI. This relationship is not significant given the fact that the p-value of 0.3848 is greater than 0.05 (5%) level significance. The coefficient of TEAOR is -0.1901, which imply that TEAOR has a negative trend with HDI. One percent (1%) movement in TEAOR would lead to 19.01% decrease in HDI. This is tandem with the findings of Okoye, Amahalu and Obi, (2018).

The multiple regression results in Table 4.6 above, the coefficient of TEATR is -0.6704 with a t-value of -2.5333 and an associated p-value (sig. value) is 0.0193. This suggests that TEATR have a negative

significant effect on HDI. This relationship is insignificant given the fact that the p-value of 0.0103 is lesser than 0.05 (5%) level significance. The coefficient of TEATR is -0.6704, which imply that TEATR has a negative trend with HDI. One percent (1%) movement in TEATR would lead to 67.04% decrease in HDI. This is line with findings of Okoye, Amahalu and Obi, (2018).

The multiple regression results in Table 4.6 above, the coefficient of TEATTR is -0.0756 with a t-value of -2.9172 and an associated p-value (sig. value) is 0.0082. This suggests that TEATTR have a negative significant effect on HDI. This relationship is significant given the fact that the p-value of 0.0082 is lesser than 0.05 (5%) level significance. The coefficient of TEATTR is -0.0756, which imply that TEATTR has a negative trend with HDI. One percent (1%) increase in TEATTR would lead to 7.56% decrease in HDI. This is line with findings of Okoye, Amahalu and Obi, (2018).

5.1 Summary of Findings

Based on the analysis, the finding revealed that Tax Evasion and Avoidance of Oil Revenue (TEAOR) has negative insignificant effect on Human Development Index (HDI) while Tax Evasion and Avoidance of Tax Revenue (TEATR) and Tax Evasion and Avoidance of Total Revenue (TEATTR) has negative significant effect on Human Development Index (HDI) in Nigeria.

5.2 Conclusion and Recommendations

The study investigated the effect of revenues leakages on economic development in Nigeria for the duration of 2000-2020. This was done in accordance with revenues leakages measures, such as the Tax Evasion and Avoidance of Oil Revenue (TEAOR), Tax Evasion and Avoidance of Tax Revenue (TEATR) and Tax Evasion and Avoidance of Total Revenue (TEATTR) and their respective effect on economic development proxied with Human Development Index (HDI) in Nigeria. The secondary used in this study, were sourced from Budgit Budget Analysis Report, Central Bank of Nigeria (CBN), Federal Inland Revenue Service (FIRS), World Bank Statistical Bulletin and National Bureau of Statistics (NBS) for the period 2000-2020. In order to obtain an accurate regression result, the data set was defined using descriptive statistics, and the unit root test was used to determine if the data were stationary. The correlation analysis will be used to determine the independent variables' co-movement in connection to the dependent variable, while the Multiple Regression analysis was used to assess the research hypotheses raised using E-VIEW version 9.0. The findings found that Tax Evasion and Avoidance of Oil Revenue (TEAOR) has negative insignificant effect on Human Development Index (HDI) while Tax Evasion and Avoidance of Tax Revenue (TEATR) and Tax Evasion and Avoidance of Total Revenue (TEATTR) has negative significant effect on Human Development Index (HDI) in Nigeria. As a result, the study revealed that there is a mixed link between revenues leakages and economic development in Nigeria. As a result, the paper suggests that, in order to reverse the negative effects of tax leakages on economic development, the government should provide employment opportunities to all through the wise use of tax proceeds, thereby encouraging a high rate of tax compliance and reducing the twin problems of tax evasion and avoidance to a tolerable level.

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