

TAX GAP ASSESSMENT BETWEEN OIL-TAX AND NON-OIL-TAX REVENUE IN NIGERIA: PRACTICAL MEASURES FOR TRIMMING THE TAX GAP IN NON-OIL TAX.

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ABSTRACT

Oil is inarguably a non-renewable source of energy. Thus, some days somehow it would run out and run dry. Nigeria is found to be one of the countries of the world that over-rely on oil-tax revenue, against the non-oil tax revenue. However, to gain research evidence into this, the study embarked on the assessment of their tax gap, to determine which reported a wider or severer tax gap. Ex-post facto designed was the research design deployed since quantitative data are already available, and obtained from Federal Inland Revenue Service, Nigeria. Regression statistics (applied with the aid of SPSS, ver. 25) was utilized for the data analyses and test of hypothesis. The study found that, although non-oil tax revenue recorded a stronger correlation (81.3%), it has a significantly wider tax gap – 40% above that reported by oil-tax. From that finding, the study recommended, among others, looking the way of non-oil tax revenue, such as investment in cleaner and more sustainable energy sources, agriculture, and services; the review of some of the non-tax rates to adapt them to the dynamic economic realities; and provision of greater enforcement resources to tax authorities for more effective tax administration.

Keywords – Oil Tax, Non-Oil Tax, Tax Gap, Petroleum Profit Tax, Company Income Tax, Value Added Tax, Custom and Excise Duties, Capital Gain Tax, and Tertiary Education Tax.

1.0 INTRODUCTION

Oil is inarguably a source of energy that is non-renewable. By this, it widely entails that it will probably, and someday, run out and run dry. Perhaps, Nwakeze

(2023) considers the alarming and prevalent climatic and environmental catastrophes that befall humanity (e.g, cyclone, hurricane, flood, drought, wildfire, heat waves, air pollutions, *et cetera*) to be obnoxious consequences of the incessant reliance on oil for energy. Thus, the

increased reliance on oil is unfortunately *sine qua non* for increased and different climatic and environmental calamities. Little wonder researches like Olayungbo & Olayemi. (2018) and Omodero (2019) recommended looking away from over-reliance on oil-tax revenue, to non-oil-tax revenue. Additionally, some developed countries of the world, already making strides in nuclear, solar, hydrogen, ethanol, and wind-power alternative and cleaner energy sources, seem to be a pointer for Nigeria and other developing countries, that it is high time they joined in such investment, global efforts and cooperation at securing the future, and in attaining Global Goal (2015)'s goal 7 target – of achieving a universal access to affordable, reliable, modern, cleaner and sustainable energy by 2030. Nigeria looking this way would mean having more companies and investments that would impact positively on non-oil tax revenue.

However, prior studies on this subject, and in Nigeria, have majorly dwelled more on assessing the relationship or effect of the different classes of taxes revenues on Gross Domestic Products (GDP), economic growth, and infrastructural developing (Olayungbo *et al.* (2018), Omodero (2019), Ilori & Akinwunmi (2020), Adegbe, Nwaobia & Osinowo (2020), Onoja & Ibrahim (2021), Appah (2022) Adegbola *et al.* (2023), Ilori & Efuntade (2022), Omodero & Ehikioya (2020), Ayuba (2014), Ude (2021), Omodero & Alege (2021), and Idris & Bawa (2022)). Very little or no researches have been found in Nigeria that measured and compared the tax gap between oil-tax and non-oil tax revenues using an 'after-the-fact' research design. This leaves a gap in literature. Thus, filling this gap would be a great accomplishment for this research. The study also aimed at contributing to the existing body of knowledge by suggesting other practical measures for trimming the tax gap, and improving non-tax revenue in Nigeria.

2.0 THEORETICAL AND CONCEPTUAL FRAMEWORK.

2.1 OIL TAX REVENUE

Oil tax revenue is the revenue that accrues to the government coffers from companies that engage majorly in upstream petroleum operations. And by 'petroleum operations', it essentially means activities from oil exploration, development, production, and export/sales (Onoja *et al.* 2021). In Nigeria, this oil-tax revenue comes majorly from the Petroleum Profit Tax (PPT). According to Odusola (2006), and as cited by Onoja *et al.* (2021), PPT is the tax that applies to oil industry. This author posits that PPT chiefly pertains to the rent, margins, royalties, and profits from oil mining, prospecting, and exploration leases (Gbegi, Adebisi & Bodunde 2017). Additionally, Appah (2022) opines that oil-tax revenue is the revenue received for the government by the Nigerian National Petroleum Corporation (NNPC), and Central Bank of Nigeria (CBN) with regards to PPT. Thus, PPT according to Okoh, Iyidiobi and Onyekwelu (2016); Attamah (2004); and Adegbola *et al.* (2023), is the liable sum when a company export/sale chargeable oil and gas. Appah (2022) citing Obaretin & Monye-Emina (2019) explained PPT to be a levy payable on profit, for each accounting year end, of companies engaged in Petroleum operation.

In Nigeria, oil-tax has been described as the most important tax, considering the percentage of total revenue it generates; contributing over 90% and 70% of government's foreign exchange and revenue, respectively (Onaolopo, Fasina & Adegbite, 2013 cited in Onoja *et al.*, 2021; and Gbegi, Adebisi & Bodunde 2017). It is the largest contributor to the Gross Domestic Product (GDP) (Ilori *et al.* 2020). Historically, PPT was first imposed in Nigeria by the colonial masters in 1957 but became effectively pronounced in 1958 as the country began exporting oil to the international market in a more commercial quantity (Adegbola *et al.*, 2023). Thus, the taxation of petroleum profit under a different act (Petroleum Profit Tax Act, PPTA) from the Company Income Tax Act (CITA) became imperative, and effective as from January 1, 1959 (Ngu, 2021).

Presently the rate of PPT in Nigeria are 65.75%, 85%, and 30% for non-PSC operation (joint ventures inclusive) within the first 5 years before the full amortization of all pre-production capitalized expenditures, non-PSC operations after the first 5 years, and profits of upstream gas operations, respectively.

2.2 NON-OIL TAX REVENUE

Non-Tax Revenue is the revenue generated from different tax sources other than that from oil and gas operations. According to Adegbola *et al.* (2023), it is revenue from direct and indirect sources payable by sectors of the economy excluding the oil sectors. The prominent components of Non-oil taxes in Nigeria include: Company Income Tax (CIT), Value Added Tax (VAT), *Customs and Excise Duty (CED)*, Capital Gains Tax (CGT), and Tertiary Education Tax (TET) (Adegbie *et al.* 2020).

According to Onoja *et al.* (2021), CIT is a tax that accrues from the taxable proceeds of companies incorporated under the Companies and Allied Matter Act (CAMA), 2004 as amended. Ani (2004) classified it as a direct tax on companies' taxable profits. Adegbite (2015) in Adegbie *et al.* (2020), further exacerbated that CIT in Nigeria, was birthed and regulated by CITA CAP 60 LFRN, 1990; and currently charged at the rate of 30%. Therefore, CIT is a way companies financially support the government (Fagbemi, Uadiale & Noah, 2010 in Adegbie *et al.* 2020).

VAT have been defined as an indirect and a consumption tax – based on the overall consumption behavior of individuals (Okoye & Ani, 2004 in Onoja *et al.*, 2021). In another terms, VAT is a tax on goods and services borne by the final consumers, and collectable at each stage of production and sales. In Nigeria, it was introduced to replace the sales tax (Izedonmi & Jonathan, 2014 in Adegbie *et al.*, 2020). Its present rate stands at 7.50%. Historically, VAT was widely held to be first introduced in France by the then director of French tax authorities, Maurice Laure, in 1954 (Adegbie *et al.* 2020).

CED is one of the oldest forms of tax.

It was first introduced in Nigeria as import duties in 1890 (Ekeocha, Ekeocha, Malaolu, & Oduh, 2012 in Adegbie *et al.* 2020). CED is defined as an indirect tax levied on goods and services imported or exported. Sometimes, CED can be a veritable economic tool in the hands of government to either encourage local contents, bolster domestic economy, or protect domestic companies by, for example, increasing import duties; and vice versa.

According to Adegbie *et al.* 2020, CGT is introduced and regulated by CGT Act CAP 42 LFN 1990. It is a tax that is applied on the proceeds from the disposal of chargeable asset. Daniel (2014), as cited in Adegbie *et al.* 2020, in another words, argued that CGT is the tax on assets when sold above its original purchase or cost price. The present rate of CGT in Nigeria stands at 10%.

Lastly, TET is the tax introduced to be levied at the rate of 2% on assessable profit, to corporate organizations in addition to the CIT levied (Adegbie *et al.* 2020). According to Adegbie *et al.* (2020), it was first introduced by Education Tax Decree No. 7 in 1993 (which was later transformed into Education Tax Act (ETA) CAP E4 LFN 2004, and now repealed by the ETA 2011) to help the resuscitation of the fast dilapidating infrastructures, and the debasing education standard in tertiary institutions in Nigeria

2.3 TAX GAP

Tax gap have been defined in several ways. Although, many of its definitions have been put forth to capture the sum total of tax revenue (for a specific tax or the entire tax system) not collected through non-compliance (Gemmell & Hasseldine, 2012). This author also cited the United State's Internal Revenue Service (IRS) definition of tax gap, as the differential between tax liable to tax payers, and that, actually and timely paid for. Giles (1997b; 1999b) in Gemmell *et al.* (2012) measured tax gap as the product of 'hidden income' and 'suitable tax rate'. According to him, judgment on what should constitute 'hidden income' and 'suitable tax rate' could give room to a lot of measurement and conceptual biases. 'Hidden Income' in Giles (1997b; 1999b)'s context is the income

earned by a tax payer but concealed from the relevant tax authorities and official statisticians. Thus, this research then defines tax gap as the realistic tax collection variance that captures the notion of government revenue losses through loopholes and non-compliance with our tax systems and laws. Therefore, tax gap portrays the scale of social injustice and inequality that needs to be measured and addressed (Murphy, 2019).

3.0 RESEARCH METHODOLOGY.

3.1 RESEARCH DESIGN.

The research design deployed for this research is ex-post facto design, because the quantitative data utilized for the study already existed. These quantitative data were those most recently available and published for the past 10 years (2021 -2012), and are obtained from the department of Planning, Research and Statistics, Federal Inland Revenue Service (FIRS), Nigeria.

3.2 DATA PRESENTATION AND ANALYSIS.

The quantitative data, in respect of the oil and non-oil tax revenue (target and actual) for the past 10 years (2021 - 2012) were presented in the table 1 below:

Table I: Oil and Non-Oil Tax Revues (Target and Actual) of Nigeria for the past 10 years (2021 - 2012).

YEAR	OIL TAX (₦'Billions)		NON-OIL TAX (₦'Billions)	
	ANNUAL TARGET	ACTUAL COLLECTION	ANNUAL TARGET	ACTUAL COLLECTION
2021	1,636.83	2,008.45	4,763.44	4,395.25
2020	284.0039	1,516.9934	4,792.8479	3,435.2311
2019	4,301.1836	2,114.2684	4,501.2024	3,147.6479
2018	2,666.0183	2,467.5807	4,081.0161	2,853.3107
2017	910.3131	1,520.4817	3,979.3571	2,507.4635
2016	484.7390	1,157.8081	3,715.4412	2,149.6533
2015	1,484.8770	1,289.9607	3,087.3320	2,451.7967
2014	1,927.5390	2,453.9474	2,158.5190	2,260.6129
2013	2,280.1880	2,666.3669	2,188.7990	2,139.2751
2012	1,793.7154	3,201.3195	1,841.7676	1,806.333

Source: Planning, Research and Statistics Department, Federal Inland Revenue Service (FIRS), 2022. These data are further presented and analyzed in the figures below:



FIGURE 1: Oil Tax Revenues (Target and Actual) of Nigeria for the past 10 years (2021 - 2012).

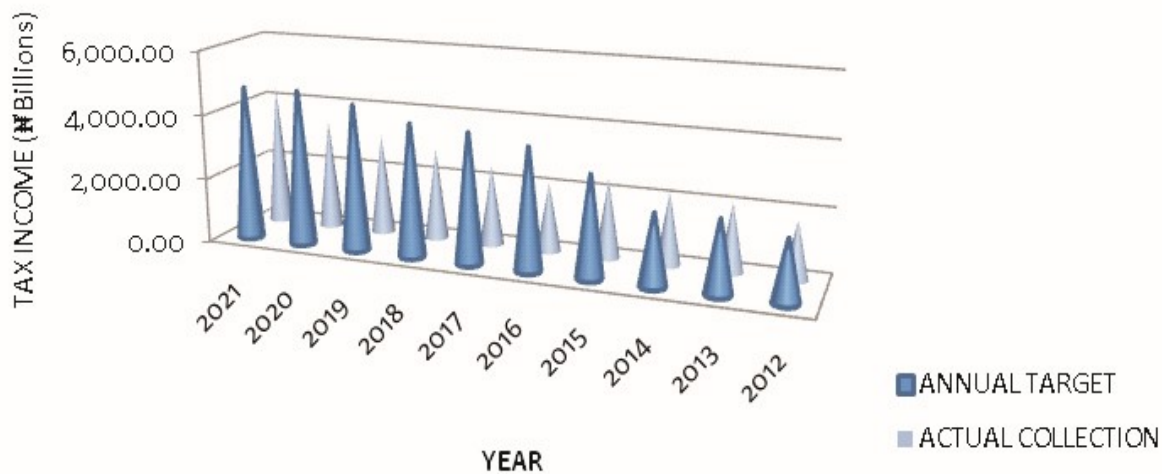


FIGURE 2: Non-Oil Tax Revenues (Target and Actual) of Nigeria for the past 10 years (2021 - 2012).

3.3 HYPOTHESES TESTING

The formulated hypothesis for this research is:

HO₁: *The tax gap for non-oil tax revenue is not significantly greater than that for oil-tax in Nigeria.*

In testing the hypothesis, this research deployed linear regression statistical tool, applied with the aid of Statistical Package for Social Sciences, SPSS(ver. 25). In doing this, it ran a separate regression test for both

the oil-tax revenue data and non-oil tax revenue data, by comparing their respective annual targets with actual collections. The insight on the decision to accept or reject the null hypothesis came from the result of the comparison of their respective measure of data variation (R^2). The research utilized R^2 equally as the basis to determine which has a severer tax gap.

These regression analysis and test result outputs are as presented below:

Table III: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1038914.765	1	1038914.765	2.820	.132 ^b
	Residual	2947028.483	8	368378.560		
	Total	3985943.248	9			

a. Dependent Variable: OIL_TAX_ACTUAL_COLLECTIONS

b. Predictors: (Constant), OIL_TAX_ANNUAL_TARGETS

Table III is the linear regression's F-test for the null hypothesis, that there is no linear relationship (i.e., $R^2 = 0$) between the Oil-tax revenue annual targets and its actual annual collections for the year under review (2021 - 2012). With $F = 2.820$ and 9 degree of freedom, the test can at least show that $R^2 \neq 0$.

Table IV: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1521.030	363.638		4.183	.003		
OIL_TAX_ANNUAL_TARGETS	.292	.174	.511	1.679	.132	1.000	1.000

a. Dependent Variable: OIL_TAX_ACTUAL_COLLECTIONS

Table IV displays the regression coefficients, their significance and intercept; and Beta weights – which reveal the relative relevance of OIL_TAX_ANNUAL_TARGETS. Thus, from the above analysis we can estimate the model's linear regression function to be:

$$Y = 1521.030 + 0.292X$$

With the objective of testing if $R^2 = 0$, the above t-test found that the p-value (sig.) of both intercept and variable to be 0.003 and 0.132, respectively. Although their $p > 0.001$, they are found to be different from zero.

Table V: Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	OIL_TAX_ANNUAL_TARGETS
1	1	1.849	1.000	.08	.08
	2	.151	3.504	.92	.92

a. Dependent Variable: OIL_TAX_ACTUAL_COLLECTIONS

Table V shows the collinearity statistics. But since the data in our model has only one independent variable, this research decided to look away from the import of its values.

Table VI: Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1603.9306641	2776.5419922	2039.7176800	339.75722781	10
Residual	-664.50384521	1156.70532227	.00000000	572.23038127	10
Std. Predicted Value	-1.283	2.169	.000	1.000	10
Std. Residual	-1.095	1.906	.000	.943	10

a. Dependent Variable: OIL_TAX_ACTUAL_COLLECTIONS

Table VI shows the statistics for predicted value versus residual, and standard predicted value versus standard residual.

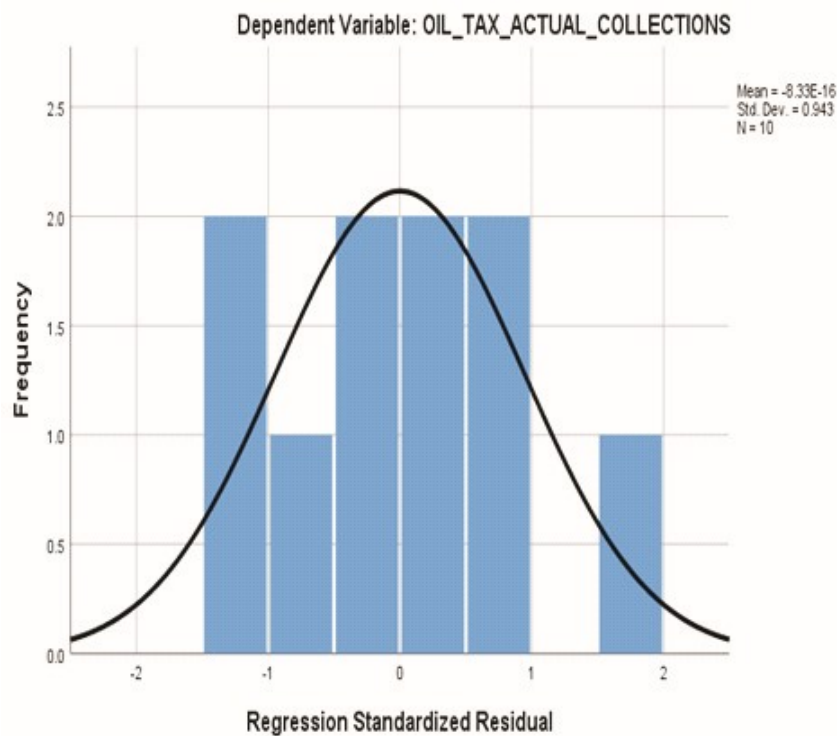


Figure 3: A Histogram for Regression Standard Residual

Figure 3 is a histogram that visually depicts that the residuals are virtually a normal distribution. Its Q-Q Plot also reveals that, in the model's linear regression analysis, there is little or no probability in the error terms.

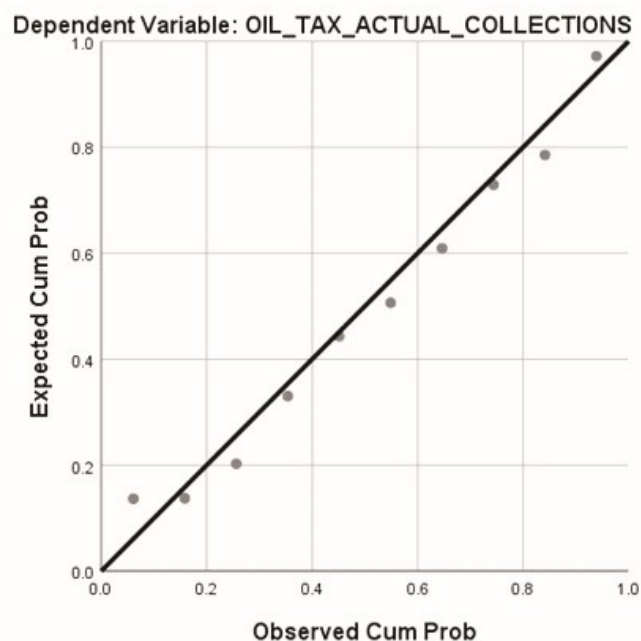
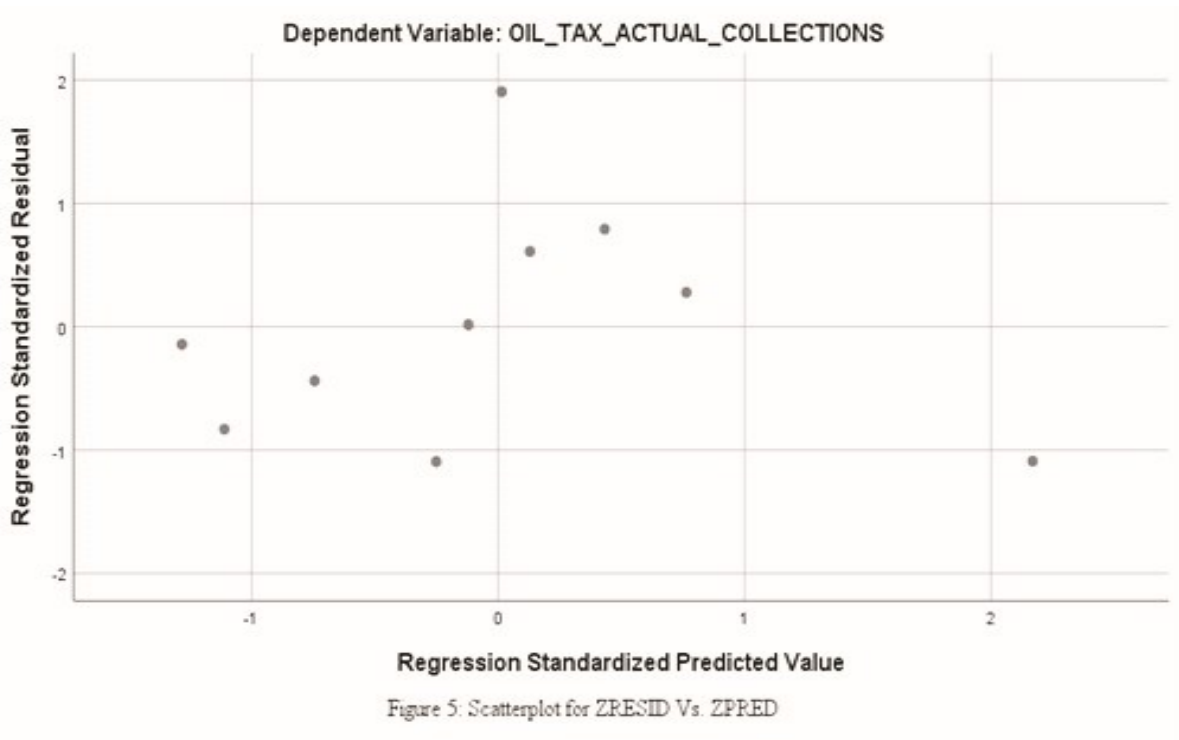


Figure 4: Normal P-P Plot of Regression Standardized Residual

Figure 4 visually assisted to demonstrate the normal probability plot of ZRESID for oil tax actual annual revenue collections. It reveals that virtually all the dots are , or closely cluster, on the linear line.



To confirm all of the regression analyses and test results, a scatter-plot (in figure 5) is deployed to check or inspect for linearity. It found approximately above average dots that are on, or clustering very closely, to the line of relationship between ZRESID and ZPRED.

❖ **For Non-Oil-Tax:**

Table VII: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.813 ^a	.661	.619	475.5222485	.925

a. Predictors: (Constant), NON_OIL_TAX_ANNUAL_TARGET

b. Dependent Variable: NON_OIL_TAX_ACTUAL_COLLECTION

Table VII above shows the model summary and the overall fit statistics. It estimated the *R* value, that represents the simple correlation, as 0.813 (81.3%) - which is above average. The table also reported the *adjusted R²* of the model to be 0.619, and the *R²* = 0.661. This regression analysis and result explains how much of variation (66.1%) in the data for non-oil-tax annual actual collections can be explained by that of the annual targets. The model also reported the Durbin-Watson as: *d* = 0.925. This figure seems to be outside the critical values of 1.5 < *d* < 2.5, thus we can guarantee that there is first order linear auto-correlation in the data for non-oil-tax revenue.

Table VIII: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3534881.292	1	3534881.292	15.633	.004 ^b
	Residual	1808971.271	8	226121.409		
	Total	5343852.563	9			

a. Dependent Variable: NON_OIL_TAX_ACTUAL_COLLECTION

b. Predictors: (Constant), NON_OIL_TAX_ANNUAL_TARGET

Table VIII is the F-test for the null hypothesis, that there is no linear relationship (i.e, $R^2=0$) between the non-oil-tax revenue annual targets and its actual annual collections for the year under review (2021 - 2012). With $F = 15.633$ and 9 degree of freedom, the test can at least show that $R^2 \neq 0$. Also, $P(\text{sig. } 0.004) < 0.05$, is an indicator that this model is a good fit for the data, i.e, it statistically and significantly predicts the outcome variable.

Table IX: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	752.827	518.472		1.452	.185		
NON_OIL_TAX_ANNUAL_TARGET	.559	.141	.813	3.954	.004	1.000	1.000

a. Dependent Variable: NON_OIL_TAX_ACTUAL_COLLECTION

Table IX reported the regression coefficients, their significance and intercept, and the Beta weights. The beta reveals the relative relevance of NON_OIL_TAX_ANNUAL_TARGETS. However, from the above analysis we can estimate the model's linear regression function as:

$$Y = 752.827 + 0.559X$$

With the objective of testing if $R^2 = 0$, the above t-test found the results of p-value (sig.) (for both intercept and variable) to be 0.185 and 0.004, respectively. Although their $p > 0.001$, they are found to be different from 0.

Table X: Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	NON_OIL_T AX_ANNUA L_TARGET
1	1	1.957	1.000	.02	.02
	2	.043	6.748	.98	.98

a. Dependent Variable: NON_OIL_TAX_ACTUAL_COLLECTION

Table X is a collinearity statistics. But since the data in this model has only one independent variable, this research decided to look away from the import of its test.

Table XI: Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1781.953613	3430.932861	2714.657420	626.7093329	10
Residual	-679.2555542	980.7493896	.0000000	448.3266754	10
Std. Predicted Value	-1.488	1.143	.000	1.000	10
Std. Residual	-1.428	2.062	.000	.943	10

a. Dependent Variable: NON_OIL_TAX_ACTUAL_COLLECTION

Table XI displays the statistics for predicted value versus residual; and standard predicted value versus standard residual.

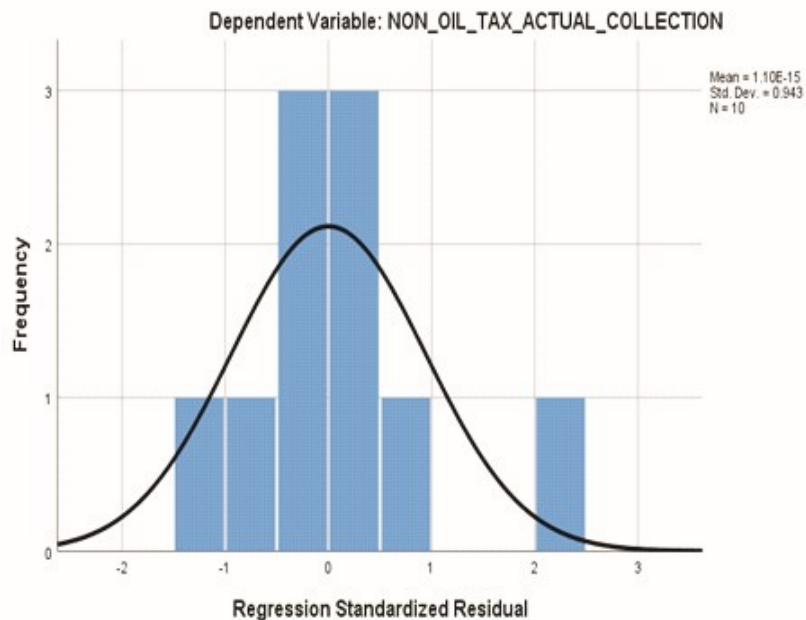


Figure 6: A Histogram for Regression Standard Residual

Figure 6 is a histogram that visually interprets the residuals to be virtually a normal distribution. Its Q-Q Plot also reveals that, in the model's regression analysis, there is little or no probability in the error terms.

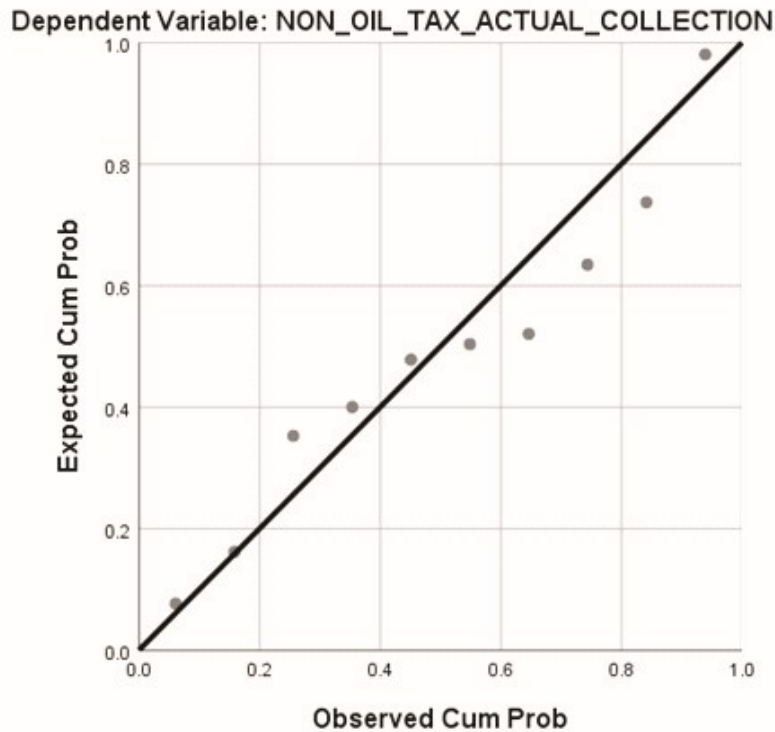


Figure 7: Normal P-P of Regression Standardized Residual

Also, Figure 7 visually assisted to demonstrate the normal probability plot of ZRESID for non-oil tax actual annual revenue collections. It reveals that approximately 70% of the dots are not on, or closely to, the linear line.

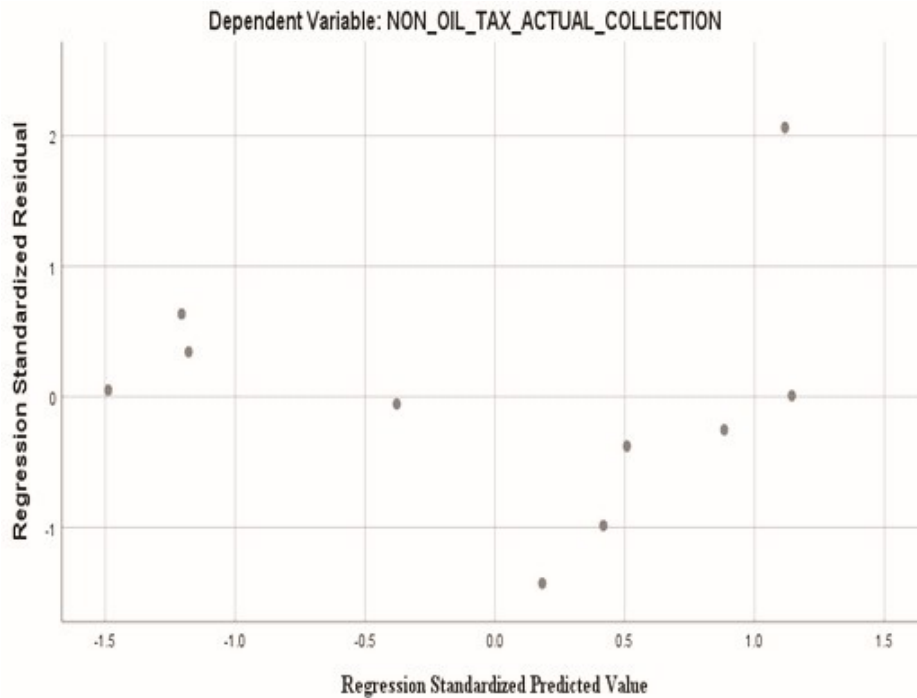


Figure 8: Scatterplot for ZRESID Vs. ZPRED

To certify all of the regression analyses and test results, a scatter-plot (as in figure 8) is also selected to check or inspect for linearity. It found a much more dispersed and distanced dots from the line of relationship between ZRESID and ZPRED. Decision:

This research, measuring tax gap on the basis of variation in data (between annual target and actual collections) (R^2), it becomes evident that R^2 for oil-tax (51.1%) is less than that for non-oil tax (83.1%). This entails that the variation (tax gap) for non-oil tax is greater than that for oil-tax. Thus, we reject the null hypothesis, and accept the alternative hypothesis that states that: “*The tax gap for non-oil tax revenue is significantly greater than that for oil-tax in Nigeria*”.

4.0 CONCLUSION.

From the above analyses and test outputs, this research found statistical evidence that both oil-tax revenue and non-oil tax revenue reported a positive and above average correlations (51.1% and 81.3% respectively— see table ii&vii) between their respective annual targets and actual tax collections for the period under review (2021 - 2012). Although, non-oil tax revenue recorded a stronger correlation (81.3%), it has a significantly wider or severer tax gap. Its' R^2 (66.1%) being greater than that of oil-tax (26.1 %) by 40%, is a statistical testament and premise to that conclusion; and to Nigeria's over-reliance on oil-tax revenue (See table ii & vii). The comparison of the linearity of the dots along the line of *Normal P-P plot* for the two tax classes would corroborate this conclusion. As it is evident in *figure 7*, the dots along the line are more linearly clustered, than that of *figure 4*. This same argument and conclusion can be made for the dots in the two separate (for oil-tax and non-oil tax) scatter-plots – see *figure 5 & 8*. Therefore, it is based on these statistical evidences and findings that this research concludes that the tax gap in non-oil tax revenue collection is significantly greater than that in oil-tax in Nigeria.

Sequel to the findings and conclusion, the study put forth the following recommendations; also as part of its contribution to knowledge and extant literatures, and for utilization by tax authorizes and other policy makers, particularly in Nigeria, in their quest at trimming the tax gap in non-oil tax:

i. Government should deem it high time they began looking away gradually from incessant over-reliance on oil-tax revenue; to looking the way of non-oil revenues sources, e.g, via investing by themselves, or taking incentive measures to encourage and attract both indigenous and foreign direct investments, in alternative, cleaner and sustainable energy sources, agriculture, services, *et cetera*. Developed countries of the world have already gotten the ball rolling in this regards, when their ground breaking and modern technological inventions run on hydrogen, ethanol, nuclear, solar, electric, and wind energy sources. Increased investments in these areas would indeed be *sine qua non* for increased revenue from non-oil taxation; and serve as a buffer or shock absorber for the anticipated depletion of oil, occasional dwindling of its' international price, and possibly tighter quota restriction by the Operation of Petroleum Exporting Countries (OPEC) going forward.

ii. The applicable non-tax rates should be reviewed periodically. It is found that, over the years, some of the non-tax rates have unfortunately remained static to adapt or adjust to the prevalent and dynamic economic realities. Example, is the non-oil tax rate - tertiary education tax rate (2%) - that has for years now, been begging for an upward review, and equally found by other existing researches on this subject in Nigeria, to have been constantly low to support or provide the volume of fund required for the resuscitation and revamping of the fast decaying, dilapidating, and gross inadequate infrastructures; and to up the debasing standard of education in the country's tertiary institutions.

iii. Greater enforcement resources

should be provided to the tax apex regulatory authority, Federal Inland Revenue Service (FIRS). This would raise the level of effectiveness in tax administration by minimizing, if not eliminating, tax evasion; blocking leakages in non-tax revenue collection; capturing prospective taxpayers into the tax net, thereby expanding the tax base; and emboldening it at sanctioning non-compliance (non-filing, under-reporting, and under-payment).

- iv. On the premise of the country's low literacy level, intensive taxpayers' education and sensitization should be embarked, on the essence of exercising their civic responsibility of taxpaying. This could be done through regular seminar and workshop, even to the target of rural areas.
- v. The government on their own part should demonstrate greater and judicious transparency and accountability by providing more infrastructures for the citizenries. In this clime, taxpayers are already crestfallen, because they are yet to see the reciprocal value for their tax monies.
- vi. This research also recommends Baker & Murphy 2019's 'tax spillovers' for evaluating the strengths and weaknesses within the country's tax systems. This spillover, according to them, assesses how one tax within a country impacts on another tax. Hence, it could be a veritable tool that would, among others, help to trim tax gap in non-oil-tax revenues.

DECLARATION OF COMPETING INTEREST

The authors declare that there are no known rivaling interests that could have

appeared to influence the result or report of this research, in any way, in part or whole.

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