**E-tax payment and non-oil revenue in Nigeria**

**Abstract**

This study assessed how electronic taxation (e-tax) affects non-oil revenue generation in Nigeria. The pre and post study employed an ex-post facto research design, using secondary data from the Federal Inland Revenue Service (FIRS) and Central Bank of Nigeria Bulletin from 1994-2023. The population of the study consisted of the entire revenue from non-oil sources and the study sample involved the complete enumeration method. Data for the study on company income tax, value -added tax and education tax were obtained from the platform of Federal Inland Revenue Service (FIRS) and Central Bank of Nigeria. Descriptive statistics and paired sample t-tests were carried out and the adjusted R2 of 0.93 and 100.98 from dummy variables revealed that while there was a positive, though statistically insignificant impact of the e-tax system on revenue generation, indicating a significant improvement in tax productivity. The study recommends that the e-tax system needs to be customized for SMEs by designing simplified e-tax platforms specifically for small and medium-sized enterprises (SMEs) to ease their compliance burden. Public awareness and education campaigns should also be created to help inform taxpayers about the benefits and usage of the e-tax system.

**KEYWORDS**

 Companies Income Tax, Education tax, Non-oil Revenue, Value Added Tax.

**1. Introduction**

Following the discovery of oil in commercial quantity in 1956, Nigeria depended mainly on revenue from oil sources. However, with the oil glut that started from 1980, the economy has been witnessing fiscal deficit and successive governments have been exploring various options to mitigate the fiscal decline. Although tax revenue has been in place, huge revenue from oil beclouded the leaders’ attention until the unending deficit experience that compelled the government to pay more attention on the electronic system of tax collection.

Electronic transactions have changed the global landscape in the contemporary era with its associated convenience, speed and or timeliness. It is just possible and comfortable to transact businesses or render services from any part of the world and complete the transaction without moving out of one’s comfort zone. It can be described as business remodeling which exploits the advantages of business in a new way. In the tax system, it is a cutting-edge technology, a paradigm shift in tax revenue collection. The dwindling revenue from the hydrocarbons has been a worrisome development to successive governments but the current administration is very serious with the re-engineering strategies that do not only ease-off the bricks and mortar system but result to seamless ways of filing tax returns, and other tax collection from various sources timely. The introduction of electronic payment system assigns taxpayers with a unique sequential number generated electronically for all corporate and individual taxpayers known as TIN (taxpayer’s identification number). The electronic systems require humongous investment in technology whereas the government wants to reduce fiscal deficit.

There is a general belief that tax evasion and avoidance occasioned by corruption and the inept attitude of tax collectors are responsible for the loss of tax revenue in Nigeria (Okoye & Olayinka, 2021). The precarious decline in oil revenue, as well as wasteful or irrational spending by successive governments exacerbated the fiscal deficit over the years. The recent re-engineering or remodeling effort was however devised as a means by which taxpayers will render their tax returns directly to specific banks electronically. In order to achieve this effective tax administration, the Nigeria Interbank Settlement System (NIBSS) and System Specs Nigeria Limited partnered with the Federal Inland Revenue Services (FIRS) to provide electronic payment of taxes in Nigeria in 2015 (Offurum et al. 2018). Contrary to the expectations from the re-engineered effort, results from prior studies remains unsettled as to how the implementation of the electronic tax system has affected the federally collected tax revenue. For instance, Bala and Musa (2022) using CIT, VAT and CGT as proxies produced significant relationship between tax revenue and CIT after the implementation of electronic tax while VAT and CGT could not. Iheduru and Ajaero (2018) in their study found that revenue from CIT and TET improved after the implementation of electronic tax whereas that from VAT did not improve after the implementation. Other empirical studies such as Onuselogu and Onuora (2021); Chiamaka et al (2021) showed differences in findings. These imprecise findings could be traced to methodology, timing, and the literature used and thus, subjected the electronic tax payment to further research. These voids prompt the current study by adopting a robust statistical analysis technique and current literature for improvement.

This paper is structured into five sections, with the first being the introductory section. Section two discusses the literature review and hypotheses development with emphasis on: conceptual review, theoretical review and review of empirical studies. Section three harps on the methodology. This is followed by section four which focuses on estimation results and discussion of findings, and section five presents the conclusion and recommendations.

**2. REVIEW OF RELATED LITERATURE AND HYPOTHESES DEVELOPMENT**

**Non-Oil Revenue**

Revenue generation refers to ways through which government raise revenue especially from three main sources such as tax, non-tax, and capital receipts for the purposes of meeting its capital and recurrent expenditure. Non-oil revenue includes but not limited to direct tax (personal income tax, corporate tax, education tax, capital gain tax, petroleum profit tax) and the indirect tax (custom and excise duties, value-added tax). Aid from inter-governmental or another level of government and capital receipts from investment made in other countries or investment within the country are inclusive (Okoye & Olayinka, 2021; Olatunji & Ayeni, 2018).

The level of revenue generation in Nigeria has been fluctuating due the dependence on oil which has been the major source since the discovery of the hydrocarbons in 1956. The dwindling of earnings has been occasioned partly by the oil price fluctuations in 1980 and undue governments’ spending. This situation compels the government of the day to introduce various tax reforms, tax policies and tax administration in order to earn more income to shore up her revenue position.

 **Concept of Electronic Tax**

“Generally, tax is a compulsory levy or financial charge imposed on a taxpayer or upon his property by the government to provide security, social amenities and other amenities for the well-being of the society. Electronic tax system is an online platform whereby the taxpayer is able to access through internet all the services offered by a financial authority such as the registration for a personal identification number, filing of returns and application for compliance certificate” (Okoye & Olayinka, 2021). Electronic tax system is the system that has been developed to replace the paper filing system of paying tax; a web-enabled and secure application system that provides a fully-integrated and automated solution for administration of domestic taxes. It assigns the taxpayer with a unique number or PIN that is electronically generated which allows for tax payments and status inquiries with real-time monitoring of accounts. According to Chukwuebuka et al. (2020), “electronic tax system is an online system or channel where taxpayers have access or permit to the platform through the use of internet. It is an internet enabled system that gives access to all the services provided by the tax authority such as the registration for a tax identification number, electronic tax filing of tax returns”.

 **Company Income Tax**

Company income tax is a tax on the profit of Nigerian companies, including those that are not resident in Nigeria but carry on business in Nigeria. Generally, the Act that originally introduced and governs the administration of company income tax in Nigeria is the Management Act of 1961. However, the company income tax Act (CITA) was established in 1979. The Act has undergone several amendments so as to bring more taxpayers to the tax net and increase tax revenue in the country. Revenue generation under the Company Income tax depends again on the level of compliance among taxpayers. It is only natural that every taxpayer would want to pay very little or nothing as tax, especially in Nigeria where individuals and corporate bodies evade taxes with impunity of various kinds such as political, criminal and institutional forms. These attitudes undermine the revenue collection efforts of the successive governments and hence, government’s inability to provide the necessary infrastructures ( Maccarthy et al. 2022).

Recent amendment of the company tax Act of nil tax for companies whose turnover is below twenty five million naira, 20% tax rate for companies whose turnover is twenty five million and above but below one hundred million and 30% tax rate for companies whose turnover is one hundred million and above and the introduction of E-tax system were aimed at encouraging voluntary compliance to increased tax revenue. A study conducted by Chukwuebuka et al. (2021) shows that electronic tax collection has not contributed significantly to company income tax revenue. However, in a related study by Onuselogu and Onuora (2021), findings indicate that electronic company income tax payments have a positive and statistically significant impact on revenue generation. It is on this premise that our first hypothesis is formulated as follows:

**H01**: The contribution of company income tax to non- oil revenue does not differ significantly before and after the introduction of electronic tax in Nigeria.

**Value Added Tax**

“Value Added Tax (VAT) is an indirect tax levied on all merchandise and amenities manufactured or rendered in a country, except for supplies and facilities that are VAT relieved. Under this indirect tax system, the consumer is ultimately paying the tax by paying more for the product” (Olaoye & Ayeni, 2018). The idea of VAT in Nigeria can be traced to the studies led by Dr. Sylvester Ugoh led group November, 1991 and Mr. Emmanuel Ijewere led group respectively. However, VAT was-finally introduced in Nigeria in 1993 by the VAT Act No. 102 of 1993 as a replacement of the sales tax which had been in operation under Federal government Legislated decree No.7 of 1986 but administered by the states and the Federal capital territory. Section 40 of VAT Act requires that the VAT pool be shared 15% to the FG; 50% to states; and 35% to LGs (net of 4% cost of collection by the FIRS). 20% of the pool is shared based on derivation. Another major event concerning VAT administration in Nigeria was the amendment in Section 34 of the Finance Act 2020, which increased the VAT rate from 5% to 7.5%. President Buhari signed the Finance Bill into law on 13 January 2020, and the Finance Act 2020 became effective on 1 February 2020.

Alade (2018) in a study of pre and post electronic tax documented a positive relationship between value added tax and non-oil tax revenue in Nigeria. This is contrary to the result of a study by Iheduru and Ajaero (2018) on pre and post electronic tax system which revealed a negative relationship between Value Added Tax and Non-oil Revenue. The second hypothesis is therefore stated as follows:

HO2**:** The contribution of Value Added Tax to Non-oil Revenue does not differ significant before and after the introduction of e-tax in Nigeria.

**Education Tax**

Education tax also known as Tertiary Education Trust Fund (TET Fund) was established in 1993 to forestall total collapse of education in Nigeria. The TETFUND, an agency for managing and disbursing fund for this purpose was enacted in 2011. The agency imposed 2.2% charge on assessable profits of Nigerian companies (Etale & Bariweni, 2019). Over the years, the rate has gone through changes and at present the rate is 3%. The Federal Inland Revenue Service (FIRS) is empowered by the Act to assess and collect Education Tax. The Fund administers the tax imposed by the Act and is saddled with the responsibility of disbursing the amount to tertiary educational institutions at Federal and State levels to ensure the provision and maintenance of physical infrastructure for teaching and learning, staff training and development and research publication among others. Uzoka and Chiedu (2018) in their study in their analysis revealed that education tax has no significant effect on the revenue generation of Nigeria. On the contrary, the study carried out by Abdulwahab and David (2023) show a statistically positive and significant association between education tax and non- oil revenue generation in Nigeria. Based on the unsettled results from the studies, the third hypothesis is stated as follow:

**H03**: The contribution of education tax to non-oil revenue does not differ significant before and after the introduction of e-tax in Nigeria.

**Conceptual Framework**

Independent variables Dependent variable

|  |
| --- |
| Value Added TaxCompany Income TaxNon –Oil Revenue |
| Education Tax |
|  |

**Source: Researchers’ Concept**

**Fig. 1: Conceptual Framework**

The diagram shows that company income tax, value added tax and education tax all impact on non-oil revenue.

**Theoretical Framework**

This study is anchored on the innovation diffusion theory propounded by Everette Rogers, an American communication theorist and sociologist in his 1962 book; later employed in 1995 to create data from 508 diffusion investigations. Innovation diffusion theory refers to a fundamental hypothesis in the field of communications literature, describing how innovations spread among prospective users. Innovation is a powerful means of broadening and developing new markets and providing new functionality, which, in turn, may disrupt existing market linkages (Adner 2018; Charitou & Markides 2019). In particular, innovation can take the form of new ideas, technologies or behavior. Diffusion is perceived as a temporal process which begins slowly with a small number of early adopters and later gains momentum as it gains the attention of the general public through opinion leaders before it slows down on reaching the saturation point. This theory is applicable in this study because electronic services offered by the Federal Inland Revenue Service (FIRS) are new innovations whose processes of adoption were in phases.

**Empirical Review**

Quite a number of empirical studies had been conducted on non - oil revenue and electronic tax globally. Ugwu et al (2020) assessed “the impact of Electronic tax system on collection of revenue in Nigeria. Specifically, the objectives of the study were to ascertain how e-tax system has been used to improve the federally collected revenue to GDP and to examine whether e-tax has been used to improve Nigeria’s tax administration. Simple linear regression coefficient statistical tools were employed to test the hypotheses. The researchers adopted a nonrandomized, pre-post-intervention research designs. The treatment effect was calculated to show an explanatory variable or the independent variable on an outcome of the response variable or dependent variable. From the result of the computer software for statistical package for social sciences (SPSS) version 22 analysis, it was found that E-Tax system has been significantly used to improved federally collected revenue to GDP. The study also revealed that, E-tax has been significantly used to improved Nigeria’s tax administration”

 Abdalwahab and David (2023) examined “the effects of tax revenue on the economic growth of Nigeria with the utilization of time series data for the time frame of 24 years (1998-2021) both years inclusive. The study’s specific goal is to evaluate the influence of petroleum profit tax, company income tax, custom and excise duty, value added tax and educational tax on economic growth in Nigeria. The study employed secondary data which have been sourced from Central Bank of Nigerian statistical bulletin and published Federal Inland Revenue Statement. Ex-post facto and correlational research design was used for this study. Additionally, the study utilized fixed effects regression model to analyze petroleum profit tax, company income tax, custom and excise duty, value added tax and education tax on gross domestic product (economic growth). The findings revealed that petroleum profit tax, custom and excise duty, value added tax and education tax has a statistically positive and significant effect on gross domestic product (economic growth) in Nigeria”.

Onuselogu and Onuora (2021) contribute to the knowledge by examining the impact of electronic tax payments on revenue generation in Nigeria. By utilizing secondary data from various sources such as quarterly economic reports, CBN statistical releases, and tax reports from the Federal Inland Revenue Service, the study evaluates the impact of e-company income tax and e-capital gain tax on domestic revenue generation. The study's findings indicate that e-company income tax payments have a positive and statistically significant impact on revenue generation, suggesting that increasing such payments can enhance revenue generation in Nigeria.

Chiamaka et al (2021) conducted “a study of electronic tax system and internally generated revenue in Ebonyi State, Nigeria. The study was anchored on expediency theory of taxation and technology acceptance model. The study used cross-sectional survey research design. The population consisted of 124 qualified and experienced respondents from Ebonyi State Board of Internal Revenue and a sample size of 94 respondents was used for data analysis. The study used primary data obtained from a structured questionnaire designed by the researchers. The responses obtained from the questionnaire were analysed using descriptive and multiple regression analysis. The results from the analysis disclosed that electronic tax registration and electronic filing of tax returns influences the internally generated revenue in Ebonyi State and electronic tax payment does not statistically show significant effect on the internally generated revenue of state”.

Babatunde and Akinsanmi (2021) examined “the impact of E-tax on revenue generation in Nigeria from 2013 – 2017. The study made used of linear regression and analysis of variance (ANOVA) to determine the relationship between the independent and dependent variable. The study showed that Nigeria captured more people into the tax net as there was a continuous increase in taxpayers’ cumulative growth and that the primary source of revenue generation in Nigeria was tax revenue which constituted about 80%. The result also showed that, on trend, between 1999 and 2005, there was no noticeable increase in revenue generated from tax; but from 2006, there was a steep rise y and noticeable increase in the tax revenue generated. The result further revealed that there was a long run relationship between the Electronics tax and revenue, contributing significantly to the overall revenue generated”.

Chukwuebuka (2020) looked at the 2012–2018 quarterly periods to see how e-taxation affected Nigeria's ability to raise income. The study by Nnubia (2020) covers two periods: pre-e-filing (Q1 2012 to Q1 2015) and post-e-filing (Q2 2015–Q4 2018). The research employed regression analysis. In Nigeria, value-added tax, capital gain tax, and company income tax were employed as stand-ins for actual tax revenue sources. The regression estimates showed that, at the 5% level of significance, capital gain tax, value-added tax, and company income tax all had a negative impact on revenue generation during the periods of Q2 2015 to Q4 2018, with value-added tax having the only significant impact. In contrast, during the periods of Q1 2012 to Q1 2015, both company income tax and value-added tax had a significant positive effect on revenue generation. These findings support the study's contention that Nigeria's revenue generation has not benefited from the use of e-filing.

Adebayo and Idowu (2020) examined “the impact of electronic taxation and revenue generation effectiveness in the era of Treasury Single Account operations with a view to determining its trend and effects on Gross Domestic Production in Nigeria. Secondary data were extracted from Federal Inland Revenue Service (FIRS), Central Bank of Nigeria and Economic Reports from 2010 to 2019. The data were grouped into pre and post e-taxation which were compared using a pre post technique of analysis. The results revealed that before e-taxation, revenue generation was below average while the tax revenue significantly improved after the e-taxation”.

Ajala and Adegbie (2020) investigated “the effect of information technology on effective tax assessment in Nigeria. The study adopted survey research design with a population of 2,857- management and administrative staff of targeted respondents. Krejcie and Morgan’ formula was used to determine the sample size of 641. Descriptive statistics and inferential statistics used for data analysis revealed that information technology had a positive statistical significant effect on effective tax assessment”.

Oladele et al (2020) conducted “a study of electronic tax administration and tax compliance in Nigeria. The study employed quantitative research design using existing data sourced from the Federal Inland Revenue Service (FIRS). The data were tax revenue posted seven years before and after the adoption of electronic tax by the FIR. The secondary data were analyzed using descriptive statistics and pair-wise t-test to ascertain if a difference or relationship exists between pre-and post-e-tax revenue. The findings disclosed a strong correlation between the electronic tax system and tax compliance (tax revenue) as shown by the pair-wise test”.

Alade (2018) carried out an empirical study to look at how Nigeria's fiscal revenue was affected by e-tax. The study used value-added tax and corporation income tax as metrics of tax sources, following a different methodology. The study's data covered the years 2012–2018, with the base year of 2015—when e-filing was first implemented. Thus, pre-E-Tax filing (2012–2014) and post-E-Tax filing (2016–2018) are the two time periods that are covered by the analysis. Using the paired sample t-test, the study, like earlier studies, discovered a positive but negligible difference in government revenue between the pre- and post-E-Tax filing periods.

Olatunji and Oludayo (2018) used “a single equation model to examine the trend of internally generated revenue from 2006 to 2015. The study aimed at investigating the impact of full adoption of TIN on the revenue generated in Ekiti state. Revenue generation, proxies by internally generated revenue (IGR), was made a function of full adoption of TIN as latent variable. Ordinary least square regression estimation technique was used. The result revealed that full adoption of taxpayer identification number exerts a significant positive impact on internally generated revenue of the state”.

**3.**  **METHODOLOGY**

This study employed secondary data to ascertain the effect of pre and post electronic tax on non-oil revenue in Nigeria. The ex-post factor research or quasi experimental research approach (QERA) which involves the analysis of data or events that have happened without the involvement of the researcher (Ndunguru, 2007 in Masunga et al, 2020). The design ensures that no manipulation of the variables was carried out by the researcher given that they have occurred and cannot be influenced.The data were collected from the Federal Inland Revenue service and Central Bank of Nigeria Bulletin, covering a period of 30 years from 1994 to 2023. The pre electronic period is from 1994 to 2015 while the post electronic period started from the mid-period of 2015 to date. The Population of the study consists of all the revenue from all non-oil sources on the Central Bank of Nigerian Bulletin from 1994 to 2023. The study sample consists of the entire revenue from non-oil sources and involves the complete enumeration technique. The data analysis techniques were the descriptive statistics, correlation and ordinary least square estimation. The model is specified in line with theories and literatures reviewed and the objectives of the study. The model is tailored in line with the model developed by Musanga et al (2020). It seeks to explain the effects of tax revenues on non-oil revenues in Nigeria, for the periods before and after the introduction of the e-tax system.

The model is functionally expressed as:

Non-oil revenue = f(company income tax, value added tax, education tax, real GDP)

The econometric model is expressed thus:

Before e-tax introduction

*NOREVpre = β0+ β1CITpre + β2VATpre + β3EDTpre + β4RGDPpre + ε*

Where CIT = company income tax

 VAT = value added tax

 EDT = education tax

 RGDP = real GDP (the control variable in the model)

β0, β1, β2…. βn = coefficient of parameters

Pre = is before the e-tax system

ε = Error term.

The model for the period after the introduction of e-tax is specified as:

*NOREVpost = β0+ β1CITpost + β2VATpost + β3EDTpost + β4RGDPpost + ε*

Where Post = is after acceptance of e-tax system, and all other variables are as earlier defined.

**4. Result & Discussion**

**4.1 ANALYSIS OF DATA**

Table 1 presents the descriptive statistics for the two periods in the study – before the introduction of e-tax systems and after the introduction of e-tax systems.

**Table 1: Descriptive Statistics**

|  |  |  |
| --- | --- | --- |
| **Variable** | *Pre E-tax* | *Post e-tax* |
| **NOREV** | **CIT** | **VAT** | **EDT** | **NOREV** | **CIT** | **VAT** | **EDT** |
| Mean | 806.25 | 97.95 | 105.52 | 13.73 | 5272.39 | 1154.76 | 1026.99 | 184.64 |
| Median | 584.60 | 61.35 | 74.85 | 9.00 | 5160.44 | 1173.49 | 802.96 | 189.54 |
| Maximum | 2078.00 | 332.40 | 312.60 | 59.60 | 11678.93 | 2649.19 | 2511.52 | 328.67 |
| Minimum | 83.53 | 12.27 | 7.26 | 2.90 | 2458.45 | 420.60 | 401.70 | 59.50 |
| Std. Dev. | 757.07 | 94.90 | 91.34 | 15.43 | 2207.05 | 560.59 | 593.60 | 71.26 |
| Skewness | 0.75 | 1.33 | 0.93 | 2.03 | 1.58 | 1.16 | 1.38 | 0.22 |
| Kurtosis | 2.00 | 3.79 | 2.86 | 6.65 | 5.87 | 4.40 | 3.97 | 2.66 |
| Jarque-Bera | 1.88 | 4.49 | 2.05 | 17.38 | 11.34 | 4.62 | 5.38 | 0.19 |
| Probability | 0.39 | 0.11 | 0.36 | 0.00 | 0.00 | 0.10 | 0.07 | 0.91 |

**Source: Authors’ Computations 2024**

It is seen that in all the cases, the average values of the variables were larger in the period after the introduction of e-tax. This is however to be expected since taxes generally grew over time. In terms of standard deviation, it is higher for all the variables in the period after the introduction of e-tax systems. This shows that there were more variables in tax revenues after the e-tax system was introduced in Nigeria.

In order to show a more relevant perspective, the growth rates of each of the taxes for the two periods are reported in Figure 2. This shows how the taxes change annually for the two periods. It is shown that for all the three taxes, the annual growth rates for the pre e-tax period was higher than that of the post e-tax period. Thus, there is evidence that taxes increased more steadily before the introduction of e-tax system in Nigeria.

Source: Author’s computation, 2024

**Regression Analysis**

The regression analysis is aimed at estimating the relationship between the three tax categories and non-oil revenue in Nigeria for the pre and post e-tax systems in Nigeria. The result in the upper panel of Table 2 shows the relationships for the pre e-tax systems. In the result, the adjusted R-squared value is 0.956 which is very large. It shows that over 95 percent of the systematic variations in non-oil revenue for the period were explained by the independent variables. The F-statistic value is also very large and is significant at the 5 percent level. This shows that the model has a high overall fit. From the individual coefficients of the model for the pre e-tax periods, only EDT has p-value of 0.04 while none of the other tax coefficients is significant at the 5 percent level. This means that the taxes did not significantly influence non-oil revenue before the e-tax systems.

**Table 2: Results for Pre- and Post E-tax Estimations**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| *Pre E-tax* |  |  |  |  |
| Constant | -9.071 | 11.90 | -0.76 | 0.47 |
| CIT | -0.389 | 0.76 | -0.51 | 0.62 |
| VAT | 0.703 | 0.41 | 1.73 | 0.12 |
| EDT | 0.490 | 0.19 | 2.87 | 0.04 |
| RGDP | 1.249 | 1.29 | 0.97 | 0.36 |
| R-sq. | 0.967 |  |  |  |
| Adj. R-sq. | 0.953 |  |  |  |
| F-stat. | 66.29 |  |  |  |
| D-W stat | 1.602 |  |  |  |
| *Post E-Tax* |  |  |  |  |
| Constant | 9.011 | 8.66 | 1.04 | 0.32 |
| CIT | 0.109 | 0.44 | 0.25 | 0.81 |
| VAT | 0.596 | 0.21 | 2.64 | 0.04 |
| EDT | 0.169 | 0.20 | 0.84 | 0.42 |
| RGDP | -0.560 | 0.94 | -0.59 | 0.57 |
| R-sq. | 0.821 |  |  |  |
| Adj. R-sq. | 0.750 |  |  |  |
| F-stat. | 11.50 |  |  |  |
| D-W stat | 1.752 |  |  |  |

**Source: Authors’ Computations, 2024**

Given that the results for the two separate periods indicate that there are strong differences in the tax contributions to non-oil revenue for the separate periods, the study also estimates the model by using a dummy variable to capture the different periods. This is to show how each of the tax components affected revenue after the introduction of e-tax systems. The results with the dummy variables are presented in Table 3 which shows VAT revenue to be significant at the pre and post electronic period. The adjusted R-squared value is also high at 0.95 and 0.75 and the F-statistic is significant at the 1 percent level. This shows that the model has an impressive fit.

**Table 3- Results with the Dummy Variables**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| Constant | -33.834 | 3.92 | -8.63 | 0.00 |
| CIT dummy | -0.798 | 0.22 | -3.78 | 0.02 |
| VAT dummy | 0.663 | 0.24 | 2.84 | 0.03 |
| EDT dummy  | 0.041 | 0.39 | 0.11 | 0.92 |
| RGDP | 3.897 | 0.38 | 10.20 | 0.00 |
| R-sq. | 0.94 |  |  |  |
| Adj. R-sq. | 0.93 |  |  |  |
| F-stat. | 100.98 |  |  |  |
| D-W stat | 1.02 |  |  |  |

**Source: Authors’ Computations**

In terms of the individual coefficients of the model, the coefficients of CIT dummy and VAT dummy are significant at the 5 percent level (p-values less than 0.05). This shows that these two taxes have significant differentiation in terms of their effects on non-oil revenue for the two periods. The coefficient of CIT is negative which shows that CIT had significant negative impact on revenue after the introduction of e-tax. The coefficient of VAT is positive which shows that the effect of VAT on non-oil revenue increased after e-tax systems were introduced in Nigeria. The coefficient of EDT with pv. of 0.04 is significant at the 5 percent level. This shows that the effect of education tax on non-oil revenue changed after the e-tax system was introduced. The outcome of the analysis further shows that the real gross domestic product has a positive and statistically significant relationship with the independent variables.

**Test of Hypotheses**

The hypotheses of the study are tested based on the result estimates in Table 3.

1. The contribution of Company income tax to non-oil revenue does not differ significantly before and after the introduction of e-tax in Nigeria.

From Table 3 the coefficient of CIT is negative with a p-value of 0.02. This is less than the critical p-value of 0.05. Thus, the coefficient is significant at the 5 percent level. This implies that the null hypothesis is rejected. This shows that the contribution of Company income tax to non-oil revenue differs significantly in the periods before and after the introduction of e-tax in Nigeria.

1. The contribution of Value added tax to non-oil revenue does not differ significantly before and after the introduction of e-tax in Nigeria.

From Table 3 the coefficient of VAT is positive with a p-value of 0.03. This is less than the critical p-value of 0.05. Thus, the coefficient is significant at the 5 percent level. This implies that the null hypothesis is rejected. This shows that the contribution of Value added tax to non-oil revenue differs significantly in the periods before and after the introduction of e-tax in Nigeria.

1. The contribution of education tax to non-oil revenue does not differ significantly before and after the introduction of e-tax in Nigeria.

From Table 3 the coefficient of EDT is positive with a p-value of 0.92. This is greater than the critical p-value of 0.05. Thus, the coefficient fails the significance test at the 5 percent level. This implies that the null hypothesis could not be rejected. This shows that the contribution of education tax to non-oil revenue does not differ significantly in the periods before and after the introduction of e-tax in Nigeria.

The results from the empirical analysis have certain important policy implications in terms of previous studies and relevant for discussion. The results have shown that the e-tax technological advancement can facilitate greater transparency and accountability in tax administration in Nigeria as also found by Alade (2018) and Chiamaka et al (2021). This can significantly contribute to more robust revenue streams outside the oil sector. In particular, the study showed that e-tax directly improves the contribution of VAT to non-oil revenue in the country. This finding is also in line with previous studies like Adegbie and Akinyemi (2020) and Nnubia et al (2020). The positive impact on non-oil revenue underscores the importance of leveraging digital solutions to diversify government income sources, reduce dependency on oil, and foster sustainable economic growth.

**5.CONCLUSION**

The study examined the role of e-tax system in the Nigeria revenue administration by focusing on how the introduction of the e-tax system influenced tax revenue contributions in Nigeria. Three tax revenues were examined, including company income tax, value added tax and education tax. The positive impact of e-tax o introduction after its introduction in Nigeria underlines the importance of leveraging digital solutions in the collection of tax revenue. From the examination conducted, it was observed that company income tax did not improve after the introduction of the cutting-edge technology and this requires further improvement. Generally, the implementation of e-tax systems represents a pivotal advancement in Nigeria's tax administration. It is significantly boosting non-oil revenue and setting the stage for a more diversified and resilient economy.

**Recommendations**

Based on the findings, the following submissions were made:

(1) Government should invest more on technology which rules the world today including the tax system. The result of the hypothesis shows that despite the significant negative impact of company income tax after the introduction of the electronic tax system, revenue from non-oil sector of the economy improved.

(2) Equally, the result of hypothesis two shows the need to extend the electronic tax system to value added tax collection as this ensures a comparatively higher compliance.

(2) Education tax is seen to contribute positively to the growth of non- oil- revenue of the nation, hence greater emphasis and awareness should be placed on tax collection through the electronic platforms.

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