African Journal of Accounting and Financial Research
ISSN: 2682-6690
Volume 7, Issue 4, 2024 (pp. 77-91)
www.abjournals.org

TAXPAYERS' IDENTIFICATION NUMBER AND REVENUE GENERATION IN THE SOUTHWEST REGION OF NIGERIA

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Cite this article:

Olaoye, C. O., Akadi, O. V. (2024), Taxpayers' Identification Number and Revenue Generation in the Southwest Region of Nigeria. African Journal of Accounting and Financial Research 7(4), 77-91. DOI: 10.52589/AJAFR-DBBHCZPK

Manuscript History

Received: 12 Aug 2024

Accepted: 25 Oct 2024

Published: 1 Nov 2024

ABSTRACT: *The introduction of Tax Identification Number (TIN) is to ensure strict compliance to tax laws and stimulate increase in revenue generation. In a bid to assess the effectiveness of TIN in the southwest region of Nigeria, this study investigated its effect on revenue generation. Secondary data was used and it was captured from the State Board of Internal Revenue and statistical year book of the federal bureau of statistics for 20 years, spanning from 2003 to 2022. Purposive sampling technique was used to select all the 6 states in the southwest of Nigeria. Descriptively, mean, standard deviation, minimum value and maximum value were used to describe the variables of the study. This was followed by correlation matrix, paired sampled t-test, panel regression which covers pooled Ordinary Least Square (OLS), fixed effect estimation, and random effect estimation. It was discovered that tax identification number and total expenditure have a positive and significant effect on internally generated revenue to the tune of 0.5856 ($p = 0.000<0.05$) for tax identification number and 0.4279 ($p = 0.001<0.05$) for total expenditure. It was established that the adoption of taxpayer identification numbers engendered rapid improvement in the capacity of the state to generate revenue internally. Thus, the government, through the tax authorities, should work out modalities such as tax education, strict penalties, and simple and transparent tax procedures to ensure that all taxable entities collect identification numbers which might, in turn, stimulate increase in revenue generation.*

KEYWORDS: Tax, Taxpayer, Taxpayer Identification Number, and Revenue Generation.

Article DOI: 10.52589/AJAFR-DBBHCZPK
DOI URL: https://doi.org/10.52589/AJAFR-DBBHCZPK

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INTRODUCTION

According to Okafor (2012) and Tyokoso, Onho and Musa (2021) mentioned, a nation's ability to fund its daily expenses and infrastructural demands depends on the quantity of revenue it generates and controls. The growth of the state is the duty of any government, and one way to do this is via revenue generation. Revenue is an income required by the government through which expenditures are defrayed. Revenue is gathered by federal, state, and local government agencies from all taxpayers, businesses, and private citizens in order to pay for expenses. Revenue could be generated internally and externally. In the context of this study, internally generated revenue are incomes generated by the government locally, that is, within their geographical territory or jurisdiction. On the other hand, externally generated revenue are allocations, grants, etc., that provide support or stimulation to accomplish a public purpose.

In Nigeria, one of the means through which revenue is generated internally is taxation. Taxation is the practice of the government that involves the collection of money in form of taxes from citizens with a singular motive to defray public expenditures. It is then required that governments source funds from various sources to meet their obligations (Ishola, Bello & Raheed). These funds are made on salaries, dividends, profits of business organizations, interests, discounts earned and royalties. These should form the major parts of the government revenue; however, this seems not to be happening in Nigeria, especially at the state level. Olaoye and Awe (2018) affirmed that state governments in Nigeria are too dependent on federal allocation that has reduced recently contingent on the reduction in the global oil price.

According to Tyokoso et al. (2021), declining crude oil revenue brought on by changes in global oil prices serves as a reminder for Nigeria to diversify its sources of income, particularly tax revenue. In an attempt to raise tax collection, TIN was introduced in 2008; however, it is unclear from empirical research how TIN would affect Nigeria's revenue creation.

The sharp reduction in the marketable value of oil and gas in current years that breed reduction in the monthly allocation has generated the need for the state government and even local government to embark on tax reforms. Tax reforms are deliberate actions of the government through its agencies that ensure that taxpayers are duly taxed as and when due. The reform was necessitated by the inefficient tax system characterized by complex, unfair, inefficient, and inequitable structures (Ngozi & Obioma, 2018). State governments saw the need to design a new structure that would improve their revenue base through which their dependence on the federal allocation is reduced.

To level up with the international trend on how revenue generation could be improved, the government introduced Tax Identification Number (TIN) in 2008. This is a welcome development as it is expected to reduce tax evasion and avoidance. The essence of TIN is to develop a unique way to subject all taxable entities and persons to the tax net. According to Ezugwu and Agbaji (2014), TIN is a distinctive number of predetermined digits that is being generated electronically to all taxpayers, individually and organizations. The Taxpayer Identification Number (TIN) was developed by the Joint Tax Board (JTB), the Federal Inland Revenue Service (FIRS), and the 36 State Boards of Internal Revenue (SBIR). It is an electronic system for registering taxpayers that would be available throughout the nation and provide each taxpayer a distinct identification.

The benefits of TIN seem to be a mirage in Nigeria, particularly in Lagos State and other states of the federation. While accessing the efficiency of Federal Inland Revenue Services (FIRS)

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with the initiative is TIN, Ifueko (2012) submitted that there are problems caused by the banks and systemic challenges that include non-availability of TIN of some taxpayers, issuance of the TIN for non-registered entities, and wrong posting caused by TIN, among others. Personal experiences of the researchers revealed that unpatriotic acts such as corruption and nepotism appear to have reduced the benefits of TIN in Nigeria.

The effort of the state government in Nigeria to improve their revenue base coupled with the challenges of TIN induced the researchers to carry out a study in this context. Studies like Ezugwu and Agbaji (2014), Asaolu, Dopemu, and Monday (2015), Olaoye and Awe (2018) and Ngozi and Obioma (2018), Akinleye, Olaoye and Ogunmakin (2019), Salman, Akintayo, Kasum and Bamigbade (2019), and Tyokoso et al. (2021) have been conducted in this context in Nigeria. However, based on the researcher's knowledge, none of these studies covered all the southwest states in Nigeria. In a similar spirit, earlier research mostly employed estimating techniques like Chi-square, t-test, and regression to demonstrate the impact of TIN on revenue production. Nonetheless, panel regression is seen to be more suitable since, aside from enabling a two-dimensional perspective on data analysis, the data comprises a time series of around twenty (20) years covering the years 2003–2022, as well as a cross-section of six (6) states.

Gaps identified in literature include the fact that there is paucity of studies that delineated the effect of TIN on revenue generation in the southwest region of Nigeria and the fact that none of the available studies used panel regression as the estimation technique. Hence, this study is designed to examine the effect of Tax Identification Number (TIN) on revenue generation in the Southwest region of Nigeria. The timeliness of this study is premised on the fact that it would enable the state governments to see the ingenuity of TIN to improve their revenue base and to equally reveal gray areas that need to be re-engineered and make the initiatives more productive. The rest of the paper is divided into 4 sections. Sections 2, 3, 4 and 5 covered literature review, methodology, analysis and discussion of findings, and conclusion, recommendations and suggestions for further studies respectively.

LITERATURE REVIEW

Tax Identification Number

Any country's growth is predicated on its ability to generate income, which all levels of government use to raise the standard of life for its people and strengthen the country's social and infrastructure foundation. Taxation is the main source of income for all countries. It is an effort to promote economic expansion and development. Tax is a mandatory levy imposed by the federal, state, and municipal governments on the products and services as well as the earnings of all taxpayers, according to Akintoye and Tashie (2014). In order to support the government's daily operations, manage public utilities, and fulfill their social obligations, individuals and companies are legally required to pay taxes to the government. Therefore, taxes serve as the government's primary source of funding. According to Abiola and Asiweh (2012), taxation is the means by which the government imposes essential charges on all commodities, services, assets, and revenues of enterprises, corporations, companies, and individuals.

Basically, tax does not only make up the major source of income to the government but also serves as the vital part of an effort to build nations, economies and societies in general. In view of this, Akinleye, Olaoye and Ogunmakin (2019) stated that taxes enhance the provision of

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securities, societal needs, promote economic development and improve accountable, democratic and representative government. In most developing nations, in spite of the significance of taxation to the government, the government seems not to fully enhance the tax revenue generation owing to some dysfunctions in the system in terms of political, economic and social interplay; poor registration of taxpayers; overdependence of foreign aids and grants; unorganized administrative process of the tax system; and corrupt practices (Akintoye & Tashie, 2014).

The absence of standardized computerized methods of correctly capturing taxpayers' data and information to facilitate the timely collection of taxes from them might be blamed for the taxation system's shortcomings. Even with the government's best efforts, many tax evaders and avoiders are still being identified on an annual basis. This prompted calls for several tax reforms in Nigeria, one of which is the implementation of the Tax Identification Number (TIN). Akinleye, Olaoye, and Ogunmakin (2019) stated that the Tax Identification Number (TIN) system generates, issues, and allocates unique index numbers to individuals who have registered inside its database. It is a ten-digit number that is only granted to taxpayers and taxable businesses with steady streams of income. It went into force in Nigeria in February 2008.

According to Olaoye and Awe (2018), the Joint Tax Board (JTB), Federal Inland Revenue Service (FIRS), and State Boards of Internal Revenue (SBIR) for the thirty-six (36) states of Nigeria came up with the concept of the Tax Identification Number (TIN). They also mentioned that the Tax Identification Number (TIN) is an electronic system used to register taxpayers and make taxpayer identification easier. It facilitates enforcement as well as expedites the taxpayer's information processing (Ebifuro, Mienye & Obudo, 2014). It promotes coordination and agreement of the taxpayer’s identification system that is based on a mechanized system. Tax Identification Number (TIN) connects the space between the taxpayers’ information and their payment history, thus increasing their level of compliance.

Revenue Generation

To put it simply, revenue is the money the government brings in to support its operations. According to Ali (2011), revenue is the amount of money needed by the government to cover its rising expenses. Similarly, revenue was defined by Aregbeyen and Kolawole (2015) as the amount of money needed by the government to finance its operations. This money comes from a variety of sources, including taxes, loans, fines, fees, and so on. According to Ali and Shah (2012), earned and regular income is included in revenue receipts. For these reasons, they contend that income comprises tax collections, contributions, grants, fees and fines, and other items rather than borrowing and recovering loans from third parties. Revenue was defined by Alade, Olaoye, and Ojo (2019) as an income or cash created to pay the expenditure. Therefore, revenue might be defined as income or cash created to cover expenses that an authority that has been formed must incur.

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Procedure of Obtaining TIN by a Company or Business Registered with the Corporate Affairs Commission (CAC)

i. A properly filled out TIN application form,

ii. A certificate of incorporation with each case's registration number prominently displayed,

iii. A document with the following details:

the address of the corporation or business,
the principal site of the firm, and
the date the business was started.

Procedure of Obtaining TIN by an Individual who (or Whose Business) is not Registered with the CAC

i. Properly filled out TIN application form

ii. Any of the following official identity papers: the national driver's license, staff identity card (for employees), international passport, and staff identity card.

The following guidelines are crucial and must be properly followed:

i. All information indicated with an asterisk (*) on the application form must be submitted,

ii. The total number of characters (letters and other symbols) in the name, including those that make up the name, cannot exceed two hundred (200),

iii. The character of the address shall not exceed two hundred (200),

iv. An active and distinct email account is required. There must be eleven digits on a mobile phone.

Tax Identification Number and Revenue Generation

The goal of TIN introduction is to encourage growth in the government's revenue base. Numerous studies have been conducted since its establishment to evaluate its efficacy and efficiency in increasing the amount of money the government pauses. For instance, Ezugwu and Agbaji (2014) evaluated the use of Taxpayer Identification Number (TIN) on Internally Generated Revenue in Kogi State, one of the states in Nigeria. The results of the study that was done showed that TIN has increased income production in that state. It was found that Internally Generated income (IGR) was considerable prior to the introduction of TIN and that the adoption of TIN results in a bigger rise in income generated.

Theoretical Review

Theoretically, this study is underpinned by congruence theory and economic deterrence theory. Introduced by Seiler (1967) and further enhanced by Nadler and Tushman (1980), congruence model postulates that there should be uniformity of regulations directing the affairs of the populace in a particular jurisdiction. Whatever the government decides as final in a particular division, the same should also be declared final in another division, within the same constituent.

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Another core of this theory is that democratic governments perform well only if their authority patterns showcase balanced disparities, that is, blends of democratic and non-democratic characters. This implies that no government can completely uphold 100% democracy. Gil (2003) introduced the congruence model to tax revenue generation and relates that the model diagnoses the possible causes of low revenue generation which are not limited to weak administration process, internal disorder and lack of initiative through which people could be compelled to strictly comply with the regulations of tax administration.

According to Pantamee and Mansor (2016), the congruence model can identify potential reasons for poor revenue generation, but it does not take into account the inputs and outcomes of taxpayers that will lead to voluntary compliance. However, the relevance of the congruence model to this study is found on the ground that tax administration needs to be strengthened through a robust initiative such as TIN. TIN does not only simplify the registration process of taxpayers, payment of tax is done with ease and it equally affords the government through the appropriate agencies to detect and reprimand evaders and avoiders.

Economic deterrence theory is generally believed to have first been identified by an Italian philosopher and economist, Ceasare Beccaria (1764), in an essay he wrote concerning crimes and punishment (Essay on Crimes and Punishments). Also, Jeremy Bentham, an English philosopher and reformer, is also credited for promoting this theory because of his work: "An Introduction to the Principles of Morals and Legislation (introduction to the Principles)" in 1789. Beccaria (1764) argued that punishment ought to follow a crime as soon as it occurs. Additionally, he confirmed that the certainty of punishment works better than severity in deterring crime. According to Bentham (1789), humans do actions to either bring about gain or avoid pain or misery, and the worth of a pleasure or suffering is determined by its degree, length, certainty, and proximity.

In relation to this study, this theory projects that criminal activities such as tax evasion and avoidance, tax fraud and so on can be deterred if the appropriate measures are put in place. The assumptions of this theory appear to be true; however, Andresen (2013) explained that the causes or reasons for tax related crimes cannot be specifically identified (Andresen, 2013). Also, the theory is difficult to test because there can be many different causes for changes in the crime rate (Apel, 2013). The theory is relevant to the study because it affirms that without an appropriate modality, like TIN, the expected internal generated revenue might be a mirage.

Empirical Review

The impact of TIN on the generation of tax income (VAT, CIT, CED, and PPT) in Nigeria is examined in the research of Tyokoso et al. (2021). The paired sample t-test was used to assess secondary data that were taken from the Central Bank of Nigeria (CBN) statistical bulletin between 1998 and 2017. Results show that once TIN was introduced, there was a considerable positive change in the means of petroleum profit tax (PPT), corporate income tax (CIT), value-added tax (VAT), and customs and excise duty (CED). Based on the empirical data, we draw the conclusion that the adoption of TIN during the research period led to a considerable improvement in Nigerian tax income from VAT, CIT, CED, and PPT.

Research conducted in 2019 by Salman, Akintayo, Kasum, and Bamigbade looked at how Lagos State's income generation was impacted by taxpayers' identity numbers (TINs). Two hundred and twenty-one (221) of the three hundred (300) questionnaires that were given to the randomly chosen staff members of the Lagos Inland Revenue Service (LIRS) were correctly

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completed and returned. Regression analysis was used to run a test on the data obtained from the questionnaire. The study revealed that TIN considerably increased tax compliance in Lagos State and had a favourable relationship with internally income generated in the state.

In their 2019 study, Akinleye, Olaoye, and Ogunmakin investigated how tax identification numbers affected revenue generation in Southwest Nigeria. Three states (Ekiti, Osun, and Ondo) were selected as research subjects using a simple random sample method. The ex-post facto study approach was adopted, and the population consisted of all states in Nigeria's Southwest geopolitical zone. The State Boards of Internal Revenue of the states included in the sample supplied quantitative secondary data over a 10-year period from 2008 to 2017, separated into two categories: pre-TIN (2008–2012) and post-TIN. According to the study, the internal generated income of the examined states before and after the introduction of TIN differed favourably and considerably, as measured by the mean and sampling paired t-test.

A related research by Ngozi and Obioma (2018) on the impact of TIN on non-oil tax revenue found that the adoption of TIN significantly increased overall non-oil tax income through a comparative examination of pre and post TIN years of 2000 to 2015. The Central Bank of Nigeria (CBN) Statistical Bulletin (2019) was the source of the data. Total income from non-oil taxes was the dependent variable in the study, while the independent variables were CIT, VAT, and TET. Descriptive and paired t-test statistical methods were also used for the analysis.

Olaoye and Awe (2018) examined in detail how Ekiti State's income collection was affected by taxpayer identification numbers. According to their research, the state's domestically produced revenue is significantly impacted by the full implementation of taxpayer identification numbers. The study used a single equation model in which income generation was proxied using internally generated revenue (IGR) in Ekiti State. Data were analysed using correlation and regression analysis.

In a 2017 research, Soetan evaluated the impact of tax administration on the collection of tax income in Nigeria. To gather data for the study, a structured questionnaire was created and a survey research methodology was implemented. The research included one hundred and twenty-six (126) responders. The SPSS program was utilised to process the collected data, and basic regression statistical techniques as well as descriptive statistics was employed to analyse the information. The study's conclusions showed that tax administration in Nigeria had little bearing on the country's ability to generate tax revenue. In Animasaun's (2016) study, the internal revenue service of Ogun State examined the connection between tax administration and revenue production. Seventy (70) employees of the Ogun State Internal Revenue Service completed a questionnaire used in the study's survey research design, which collected data. A combination of descriptive and inferential statistics were used to analyse the gathered data. The study's findings showed that there was no discernible relationship between Ogun State's tax administration and revenue generation.

In a similar research, Oriakhi and Ahuru (2014) examined the potential major impact of tax reforms on Nigeria's federal income collection using Johansen cointegration analysis. Results showed that lowering tax evasion and avoidance, strengthening the tax code, and lightening the tax burden may have improved the government's capacity to levy taxes and raise more money. It was determined that tax modifications may encourage higher revenue creation. Asaolu, Dopemu, and Monday (2015) looked at how tax revisions affected Lagos State's ability to raise income. The ordinary least squares (OLS) regression method was used to examine secondary

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data received from the Lagos State Internal Revenue Service (LIRS) in the format of taxpayer statistics and revenue status reports utilising Time Series quarterly data from 1999 to 2012. The findings revealed a long-term relationship between revenue output in Lagos State and tax modifications.

It could be deduced from these studies that TIN is a welcome development through which the revenue system is made better. However, there seems to be a paucity of studies that delineated the effect of TIN on revenue generation in the southwest region of Nigeria and none of the available studies used panel regression as the estimation technique. Hence, this study is designed to examine the effect of Tax Identification Number (TIN) on revenue generation in the Southwest region of Nigeria. The only hypothesis for this study is formulated thus:

H_0: *There is no significant effect of TIN on revenue generation in the Southwest region of Nigeria.*

METHODOLOGY

Because the analysis was predicated on data that had already been collected, an ex post facto research approach was used. Since all of the research that was accessible for this challenge had only been completed in three states in total, the study included all six of the Southwest states of Nigeria. Secondary data gathered during a 20-year period from 2003 to 2022 was taken from the State Board of Internal Revenue and the Federal Bureau of Statistics' statistical reports. The 20-year scope was chosen with the goal of capturing 10 years prior to and 10 years following the establishment of the Tax Identification Number (TIN). Descriptive statistics such as mean, standard deviation, minimum and maximum values were employed to characterise the study's variables. Following this were the correlation matrix, post-estimation tests for the F-restricted test, Hausman test, Pesaran test, and Wald test, panel regression that included pooled Ordinary Least Square (OLS), fixed effect estimation, and random effect estimation. Prior to TIN adoption, the Tax Identification Number (TIN) was dummied as 0, while subsequent to TIN adoption, it was dummied as 1. The study modified the theory applied by Salman, Akintayo, Kasum, and Bamigbade (2019) to examine how taxpayer identity numbers affect the state of Lagos, Nigeria, in terms of income production. The functional model is given thus:

$$IGR_t = \beta_o + \beta_1 TIN_{it}, + \varepsilon_{it} \quad \text{..... 3.1}$$

where IGR is “Internally Generated Revenue (proxy for revenue generation),” TIN is “Tax Identification Number,” β_1 is “the slope parameter,” t = “time series variable,” and i = “cross-sectional variable.”

However, “the model was modified with the inclusion of total expenditure as a control variable since it was confirmed” by Olaoye and Awe (2017) that total expenditure could influence revenue generation. Hence, the modified model was stated as follows:

$$IGR_{it} = \beta_o + \beta_1 TIN_{it}, + \beta_2 TEX_{it}, + \varepsilon_{it} \quad \text{..... 3.2}$$

where TEX is “Total Expenditure” and β_2 is “the slope parameter.”

Panel data regression was “used to determine the effect of the independent variables on the dependent variable”. The fixed effect model is given thus:

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ISSN: 2682-6690
Volume 7, Issue 4, 2024 (pp. 77-91)

www.abjournals.org

$$Y_{it} = a_0 + \beta_1 X_{it} + \delta i + \mu_{it}$$

where δi is "a time-varying intercept that captures all the variables that affect Y_{it} that varies over time but is constant cross-sectionally." In substituting the variables "under consideration into the fixed effect model, it will appear thus":

$$IGR_{it} = a_0 + \beta_1 TIN_{it} + \beta_2 TEX_{it} + \mu_{it}$$

The random effect model follows the forms presented below:

$$Y_{it} = a_0 + \beta_1 X_{it} + W_{it,}\ W_{it} = £_{it} + \mu_{it}$$

Subscript "it" "denotes the combination of time and individuality," and £_it "quantifies the random departure from the global intercept a." It stands for mistake word. It will look like this when the variables under consideration are substituted into the fixed effect model:

$$IGR_{it} = a_0 + \beta_1 TIN_{it} + \beta_2 TEX_{it}\ (£_{it} + \mu_{it})$$

The Hausman test is used to determine which of the two models is more appropriate.

Data Analysis

Descriptive statistics were employed to characterise the study's variables, including mean, standard deviation, minimum and maximum values. Then came the correlation matrix, paired sampled t-test, panel regression (which includes post-estimation tests for F-restricted tests, Hausman tests, Pesaran tests, Wald tests, and Wooldridge tests), and pooled Ordinary Least Square (OLS).

RESULTS

Table 4.1: Descriptive Statistics

Variables	Obs	Mean	Std. Deviation	Minimum	Maximum
LTRG	120	27.2234	1.6102	23.8301	28.3045
TIN	120	0.5	5042195	0	1
LTEX	120	29.0189	.8105	26.6252	31.2314

Source: *Data Analysis 2024.*

Table 4.1 reveals the summary of the descriptive statistics of the variables under study. The table shows that the mean value and standard deviation of total revenue generated, tax identification number and total expenditure were 27.2234 (1.6102), 0.5 (0.9), 29.0189 (0.8105) respectively. A more thorough examination of the standard deviation data reveals that the internally produced revenue in Southwest Nigeria's states varies little from one state to the next. The lowest and largest values that they had were 23.8301 and 28.3045, 0 and 1, and 26.6252 and 31.2314 respectively.

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Table 4.2: Pearson Correlation Matrix

Variables	LTRG	TIN	LTEX
LTRG	1		
TIN	0.2178	1	
LTEX	0.7705	0.1198	1

Source: *Data Analysis, 2024.*

Table 4.2 shows that total revenue generated maintained a positive relationship with tax identification number and total expenditure with the correlation coefficients of 0.2178 and 0.7705 respectively. This is an indication that total revenue generated in Southwest Nigeria moved in the same direction with tax identification number and total expenditure for the period covered by this study.

Table 4.3 Pooled OLS Estimation Result

Variable	***Coefficient***	***Std Error***	***T-Test***	***Probability***
C	-9.5950	3.6739	2.61	0.011
TIN	0.3967	0.2595	1.53	0.132
LTEX	1.2989	0.1433	9.06	0.000

Source: *Data Analysis, 2024.*

R-square = 0.6097, Adjusted R-square = 0.5960, F-statistics = 44.52, Prob(F-stat) = 0.0000

The estimation result of the pooled OLS is shown in Table 4.3. Based on the years covered by this study, the results demonstrate that tax identification number and total spending both had a favourable impact on domestically produced income of Southwest states in Nigeria, with respective coefficients of 0.3967 and 1.2989. In contrast to the negligible impact of the tax identification number, which has a probability value of 0.132, the positive effect was only significant for total spending, with a probability value of 0.000. According to the corrected R-square statistics, the tax identification number and total spending may account for over 60% of the systematic variance in the domestically produced income in Southwest Nigeria. The model is fit, as evidenced by the given F-statistics of 44.52 and its probability value of 0.000.

Table 4.4 Cross-sectional and Time-specific Fixed Effect Estimation Results

Cross-Sectional Specific Effect			Time Specific Effect		
Variables	Coefficients	Prob	Variables	Coefficients	Prob
C	12.8639	0.000	C	-10.3346	0.012
TIN	0.6004	0.000	TIN	0.3146	0.614
LTEX	0.3595	0.006	LTEX	1.3240	0.000
Effects			Effects		
Ekiti State	1.1265	0.000	2003	0.1243	0.245
Osun State	0.4681	0.026	2004	0.2124	0.345
Oyo State	1.5516	0.000	2005	0.2178	0.653
Ondo State	2.9621	0.000	2006	0.1201	0.543
Lagos State	3.4164	0.000	2007	0.1236	0.642
			2008	0.2165	0.251

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			2009	0.1657	0.342
			2010	0.1196	0.421
			2011	0.3770	0.539
			2012	0.0287	0.963
			2013	-0.1735	0.781
			2014	0.2576	0.676
			2015	0.1533	0.803
			2016	0.3365	0.585
			2017	-0.0343	0.955
			2018	0.4176	0.497
			2019	0.5011	0.407
			2020	0.2451	0.765
			2021	0.1452	0.546
			2022	0.4215	0.862
R-square=0.8494 Adjusted R-square=0.8426 F-statistics= 139.50 Prob(F-stat)=0.000			R-square=0.6240 Adjusted R-square= 0.5473 F-statistics= 8.13 Prob(F-stat)=0. 0.000		

***Source**: Data Analysis, 2024.*

Based on the study's covered years, Table 4.4 shows that tax identification number and total expenditure had a positive and significant impact on the internally generated revenue of the Southwest states of Nigeria, with respective coefficient and probability values of 0.6004 and 0.000 for tax identification and 0.3595 and 0.006 for total expenditure. According to the corrected R-square statistics, the tax identification number and total spending may account for around 84% of the systematic fluctuation in domestically produced income in southwest Nigeria. The model is fit, as evidenced by the given F-statistics of 139.50 and its probability value of 0.000. The intercept term of 12.8639 for the reference state, Ogun State, was deviated from by 1.1265, 0.4681, 1.5516, 2.9621, and 3.4164 for the following states: Ekiti, Osun, Oyo, Ondo, and Lagos.

Additionally, Table 4.4 shows that the Southwest area of Nigeria's domestically produced revenue has a positive and negligible impact from tax identification numbers, amounting to 0.3146 ($p = 0.614>0.05$). Nonetheless, it was discovered that the whole spending had a favourable and substantial impact on internally produced income, amounting to 1.3240 ($p = 0.000<0.05$). The combined explanation of tax identification number and total spending accounted for almost 55% of the systematic variance in domestically produced income in Southwest Nigeria, according to the corrected R-square statistics of 0.5473. The model is fit, as evidenced by the given F-statistics of 8.13 and its probability value of 0.000. 0.1243 was the variation from the intercept term (3.3722) for the reference year (2003), 0.1243 0.2124, 0.2178, 0.1201, 0.1236, 0.2165, 0.1657, 0.1196, 0.3770, 0.0287, -0.1735, 0.2576, 0.1533, 0.3365, -0.0343, 0.4176, 0.5011, 0.2451, 0.1452, and 0.4215 for 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022 respectively.

Article DOI: 10.52589/AJAFR-DBBHCZPK
DOI URL: https://doi.org/10.52589/AJAFR-DBBHCZPK

Table 4.5: Random-Effect Estimation

Variable	Coefficient	Standard Error	Z-Test Values	Probability
C	12.7007	3.2634	3.89	0.000
TIN	0.5856	0.1041	5.63	0.000
LTEX	0.4279	0.1264	3.39	0.001

Source: *Data Analysis, 2024.* R-square = 0.4991, Wald chi2(5) = 57.10, Prob> chi2 = 0.0000

Table 4 shows that tax identification number and total expenditure have a positive and significant effect on internally generated revenue to the tune of 0.5856 ($p = 0.000<0.05$) for tax identification number and 0.4279 ($p = 0.001<0.05$) for total expenditure when the heterogeneity effect across states and over time is incorporated into the model via the error term. The R-square statistics of 0.4991 showed that about 50% of the systematic variation in the total revenue generated in Southwest Nigeria could be jointly explained by tax identification number and total expenditure. The reported Wald chi2 of 57.10 alongside its probability value of 0.000 showed that the model is fit.

Table 4.6: Restricted F Test of Heterogeneity (Cross-Sectional and Time Specific)

	F-statistics	Probability
Cross sectional	69.88	0.000
Time specific	0.23	0.983

Source: *Data Analysis, 2024.*

The findings of the limited F-test of heterogeneity for the cross-sectional and time-specific effects are displayed in Table 4.6. The outcome shows that the null hypothesis—which states that all differential intercepts for every cross-sectional state are equal to zero—cannot be supported by the available data. This suggests that there is a noteworthy influence of cross-sectional variability among the states that were sampled. Furthermore, the outcome shows that the null hypothesis—which states that all differential intercepts for each time are equal to zero—cannot be rejected due to insufficient evidence. This suggests that, throughout the course of the study period, there is no discernible time-specific impact.

Table 4.7: Hausman Test

Null hypothesis	**Chi-square statistics**	**Probability**
Difference in coefficient not systematic	4.21	0.09461

Source: *Data Analysis, 2024.*

The Hausman test was used to determine whether or not the differences between the coefficient estimates of the fixed and random effects are systematic in an effort to determine which estimator between fixed effect and random effect estimation is the most accurate. The results indicated that there is not enough information to reject the null hypothesis, which holds that there is no statistically significant difference between the coefficients of fixed effect estimate and random effect estimation. Therefore, Table 4.5's random effect calculation yields the most

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DOI URL: https://doi.org/10.52589/AJAFR-DBBHCZPK

reliable and consistent estimate. The probability value of 0.09461 and the chi-square statistic of 4.21 were given in Table 4.7.

Table 4.8: Breusch-Pagan LM Test of Independence

Null hypothesis	Chi-square statistics	Probability
No Cross – Sectional dependence	19.346	0.3002

Source: *Data Analysis, 2024.*

Table 4.8 shows the cross-sectional dependence test results. Since the probability value of 0.3002 is significant at the 5% level, the null hypothesis, which states that there is no cross-sectional dependency, was accepted in light of the evidence. This conclusion implies that the criteria of cross-sectional independence is satisfied.

Table 4.9: Modified Wald Test for Groupwise Heteroskedasticity

Null hypothesis	Statistics	Probability
Static panel homoscedasticity	15.02	0.9100

Source: *Data Analysis, 2024.*

According to Table 4.9, the null hypothesis was rejected when the heteroskedasticity test resulted in an insignificant probability value of 0.9100. This suggests that the residual terms' variance is constant. This implies that homoscedasticity is absent.

DISCUSSION OF FINDINGS

The most reliable and effective estimate is provided by Table 4's random effect estimates, which shows that internal income is positively and significantly influenced by the tax identification number to the amount of 0.5856 ($p = 0.000<0.05$). This illustrates how a just 1% increase in the value of a tax identification number in the Southwest of Nigeria might result in a 0.5956 increase in revenue generation. The tax identification number's favorable and noteworthy impact on revenue collection may be ascribed to its ease of use in identifying and registering taxpayers, which enhances revenue generation. Tax identification numbers help to reduce errors and inaccuracies that are often associated with manual registration. They also assist in lowering the issue of repeated taxations, which has been shown to be a persistent concern for administrators and taxpayers alike. This result suggests that tax identification has the ability to enhance tax administration and raise the efficacy and efficiency of tax administrators with respect to the congruence model. This result's implication is that, among other things, tax identification numbers can lead to an increase in the Southwest area of Nigeria's revenue production. The conclusions of Ezugwu and Agbaji (2014) and Olaoye and Awe (2018), that the complete adoption of taxpayer identification numbers has a major influence on domestically produced income, were supported by this discovery.

Article DOI: 10.52589/AJAFR-DBBHCZPK
DOI URL: https://doi.org/10.52589/AJAFR-DBBHCZPK

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to investigate how tax identification numbers affected the amount of money generated in Southwest Nigeria. Because it encompassed every state in the Southwestern part of Nigeria, it was unique. In contrast to the t-test, which was mostly employed in earlier research as a data analysis approach, panel regression, which includes pooled Ordinary Least Square (OLS), fixed effect estimate, and random effect estimation, was employed. Based on the results, it was determined that tax identification numbers had the ability to encourage a rise in the Southwest area of Nigeria's revenue collection. In order to further maximize the positive impact of the initiative, the study recommended that the government, working with the state's tax authorities, devise strategies such as public education, strict penalties, and straightforward tax procedures to ensure that all taxable individuals and/or business entities obtain identification numbers. Similar research might be expanded to other federation regions since this one was restricted to the Southwest.

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Article DOI: 10.52589/AJAFR-DBBHCZPK
DOI URL: https://doi.org/10.52589/AJAFR-DBBHCZPK