

The Effects of Direct Assessment, Pay-As-You-Earn (PAYE) on Internally Generated Revenue in Ondo State

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Abstract: *This study analyzes the effect of personal income tax on internally generated revenue in Ondo State. The specific objectives are to examine the individual contributions of the components of personal income tax on internally generated revenue in Ondo State. This study used both primary sources and secondary sources of data. In doing this, two models were utilized. The secondary data focused on secondary data from eight years record from Ondo State Board of Internal Revenue (OSBIR), while the primary data employed survey through the aid of questionnaires distributed across the three senatorial districts (18 LGAs) of the state. Ordinary Least Square (OLS) regression analysis was adopted to estimate the two models. The findings show that PAYE and other sources of taxes were statistically significant on internally generated revenue in Ondo State in model one. Meanwhile, in model two, the ability of state government to bring in more payers into the tax net and deploy effective collection of PAYE to enhance revenue have positive and statistically significant impact on IGR in the state. It is therefore recommended*

that the Ondo State government should bring to table the holistic approach to revenue collection of taxes in the state with a view of enhancing internally generated revenue and minimize bureauractic fraud involved on the part of revenue collection officers in the state.

Keywords: PAYE, direct Assessment, IGR, Ondo State

INTRODUCTION

Direct Assessment and PAYE are vital components of Ondo State's IGR strategy, helping to diversify income sources and promote fiscal independence. Enhancing IGR through these and other methods can support development projects and economic stability in Ondo State. Direct Assessment is a tax system where the government directly assesses and collects taxes from self-employed individuals and small business owners who are not captured under the PAYE system. This includes artisans, traders, and small business owners who do not have formal employment structures. Direct assessment often faces challenges like lack of accurate data, tax evasion, and difficulty in assessing income accurately. For Ondo State, boosting compliance in this sector requires efficient record-keeping, public awareness, and sometimes incentives. Though typically smaller than PAYE and other tax categories, Direct Assessment can provide a significant income boost if effectively managed, especially by broadening the tax net to reach informal sectors. Internally Generated Revenue encompasses all income generated by the state government from within its own jurisdiction, separate from allocations from the federal government. It includes various forms of taxes, fees, levies, licenses, and other sources of revenue. With fluctuating allocations from the federal government due to oil dependency, Ondo State has emphasized IGR to ensure financial independence and sustained growth. Increasing IGR allows the state to fund infrastructure, health, education, and other public services without over-relying on federal funds. Every state or nation requires a lot of revenue in order to provide and maintain essential services, such as security, healthcare, good roads, and other amenities for its citizens. To this end, governments generate income from diverse sources for the purpose of meeting their expenditure. These sources are either internal like investments and taxes or external such as allocation from the Federal Government of Nigeria, grants, aids, and donations. Imposition of taxes is one ready means of revenue for the government, and it is not a new phenomenon since there is hardly any government today that does not rely on taxation for sustainable development. However, the reason for the imposition of tax is not only for the generation of revenue for the government, but it has also become the avenue for provision of social amenities, redistribution of wealth and re-adjustment of the economy (Ojo, 2008). With the dwindling revenue allocation from the Federal Government, states now look inwards for adequate revenue generation especially through taxation. Sanni (2017) advocate the use of tax as an instrument of social engineering, to stimulate general

or sectorial economic growth. A high tax rate provides the most reliable, important and dominant source of government revenue for promoting the economic development. Personal income tax is imposed on individuals who are either in employment or are running their own small businesses under a business name or partnership.

Personal Income Tax Act has been amended by the government severally just to yield the expected outcome (revenue) and reduce the loopholes available for tax evasion and avoidance in order to finance governmental activities. Census (2006) put Ondo State population at over two million people; which ought to generate a sizeable personal income tax into the covers of the government. Moreover, the state being a civil service state with little manufacturing activities is expected to generate much revenue from pay as you earn (PAYE) tax such that governmental activities would not be adversely affected. However, uncompleted projects appear to dot the landscape of the state and many government companies seem moribund, perhaps due to reduction or nonpayment of personal income tax to boost the revenue of the state. It becomes relevant to examine the effects of personal income tax on revenue generation in Ondo State.

Statement of the Problem

Taxation is an important source of revenue in running the affairs of a state. Expectedly, personal income tax should be a major source of income to the government especially Ondo State where there are banks, sole proprietorship, schools and colleges, hospitals and hotels, modern farms, real estate and other revenue generation entities. These businesses and government establishments are run by men who are expected to be paying personal income tax regularly to boost the revenue generation of the state. However, the state government has not been able to execute many projects due to diminishing revenue allocation from federation account which serves as the main source of financing to the state government. Ondo State Government makes direct deduction of PAYE from salaries while artisans, traders, Okada riders and the others are mandated by government to pay tax on direct assessment basis. With a population of over 2 million (Census 2021), one would have thought that personal income tax would be a rentable and significant contributor to the total revenue of the state such that there would be infrastructural development and workers' salaries are paid as at when due. However, the reverse seems to be the case as Ondo State Government finds it difficult to execute new projects and owe salaries in arrears. One begins to wonder whether there is tax evasion or tax avoidance on account of some of the inhabitants of the state. Perhaps the personal income tax administration has not been effective which could affect the amount collected. According to Olotu (2022), taxation is already sowing seed of transformation in many states of the federation of Nigeria in that more states across the country are now turning to taxation to shore up their revenue to finance infrastructural projects. Therefore this study examined the contribution of personal income tax to revenue generation of Ondo State.

Objectives of the Study

The broad objective is to increase the internal generated revenue in Ondo state. While the specific objectives are as follow;

- i. To determine the contribution of personal income tax to revenue generation of Ondo State from 2018 to 2023; and
- ii. To examine the relationship between direct assessment and revenue generation in Ondo State.
- iii. To bring more payers into tax net with the view of increasing IGR in Ondo State.
- iv. To evaluate the effectiveness of PAYE in enhancing revenue generation in Ondo State.

The study will use a mixed-methods approach, combining both qualitative and quantitative data collection and analysis methods. The data sources will include secondary data from published reports, official documents, and primary data from surveys with the aid of questionnaire from the stakeholders in the state.

LITERATURE REVIEW

The literature review is an essential part of the study, as it provides a comprehensive overview of the existing knowledge on the topic. The review will be divided into three main sections: conceptual framework, theoretical framework, and empirical literature.

Conceptual Review

The conceptual framework for this study is based on the theory of public finance and the concept of local government finance. Public finance refers to the study of how governments raise and allocate resources to finance their activities (Oates, 1972). Local government finance, on the other hand, is a subfield of public finance that deals with the financing of local governments (Bahl & Linn, 2012).

Pay As You Earn (PAYE)

Prior to discussing PAYE in Nigeria, it may be of significance to give brief history of PAYE which is contended to have originated from the United Kingdom precisely in 1944 traceable to Sir Kingsley Wood as the then Chancellor of the United Kingdom. It is a tax in which the income tax is withheld from the income of the tax payer, so that what the tax payer receive at the end is the net payment excluding the income tax (Gauke, 2024). Therefore, Nigeria being a colony of the United Kingdom, the system of PAYE in the United Kingdom was applied in Nigeria although it is argued that Personal Income Tax (PIT) regarded as PAYE was introduced in Northern Nigeria back in 1904 through the native revenue ordinance Act which was later extended to the western and eastern regions in 1917 and 1928 respectively. These ordinances were consolidated and

incorporated into direct taxation ordinance number 4 of 1940 (Onaiwu & Arekhandia, 2021). However, the laws providing for payment of modern PAYE in Nigeria are provided for in the Income Tax Management Act 1961 as amended (Onaiwu & Arekhandia, 2021).

PAYE is a form of direct tax in which the employee pays tax on whatever income is earned from an employment such as salaries, bonuses, commission, directors' fees and any other income from employment. It is also regarded as a tax deducted from employees' monthly earnings including any allowances or benefits; thus, it is a progressive tax arrangement whereby an employee pays income tax on current earnings when it becomes payable often at the end of the month. PAYE applies only to employees' resident in Nigeria in public and private sector and employees of Nigerian government overseas. The employer deducts the tax from the earnings of the employees and remit same to the relevant state tax authority or federal tax authority in case of PAYE of members of the armed forces, police, and residents of the FCT and staff of Ministry of foreign Affairs and non-resident individuals (Onaiwu & Arekhandia, 2021).

The concept of direct assessment, pay-as-you-earn (PAYE), and internal generated revenue are central to this study. Direct assessment refers to the practice of collecting taxes directly from individuals or organizations (Lubben & Selden, 2022). PAYE, on the other hand, is a method of taxation where taxes are collected on a pay-as-you-earn basis (Kwiatkowski & Stanislawski, 2023). Internal generated revenue refers to the revenue generated by local governments through their own efforts, such as through internal taxation and non-tax revenues (Bahl & Linn, 2022). Taxation is a worldwide phenomenon and tax offenders are often punished by the state. According to Farayola (2017), taxation is one of the sources of income for government and such income is used to finance or run public utilities and perform other social responsibilities. It is the most important source of revenue for modern governments, typically accounting for ninety percent or more of their income (Adam, 2021). According to Aguolu (2024), taxation is a compulsory levy by the government through its agencies on the income, consumption and capital of its subjects made on personal income, such as salaries, business profits, interests, dividends, discounts and royalties. It is also levied against company's profits, petroleum profits, capital gains and capital transfer.

Specifically, the Personal Income Tax Act (PITA) S.8, Cap P8 LFN 2011 defined personal income as income of individual, group of individuals, proprietors, corporation, sole communities, families, trustees and executors who reside in a state which is often collected on a pay as you earn basis and on direct assessment basis. The PAYE is easy to collect from civil servants as it is deducted from source by the appropriate authorities unlike the private sector who will have to file returns of each tax payers which is not done in most cases (Asada, 2015).

According to Adejuwon (2019), there are two types of income; earned income such as employment and unearned income such as gifts which are subjected to taxation. There are several principles of taxation as stated by Smith (1776); Oduh (2012); and Angahar and Alfred (2022), which are: Principle of equity, certainty, convenience, flexibility, neutrality, economy, simplicity, efficiency investment, and productivity. The details of taxation are guided by three principles; which brought about Equal Distribution Principle, Benefit Theory and Ability to Pay Theory. The usual and most supported justification of ability to pay is on grounds of sacrifice because taxes paid are seen as a sacrifice by taxpayers. The conceptual review for this study consists of three main components:

Revenue Generation: This component examines the sources of revenue for local government councils in Ondo State. The revenue generation component includes direct assessment, pay-as-you-earn (PAYE), and internal generated revenue.

Revenue Allocation: This component examines how revenue is allocated among different expenditure categories by local government councils in Ondo State. The revenue allocation component includes the prioritization of expenditure categories and the allocation of resources to different sectors.

Local Government Council Performance: This component examines the performance of local government councils in Ondo State, including their financial sustainability, economic development, and social welfare outcomes.

Internally Generated Revenue

Fayemi (2021) classified government revenue into two kinds – recurrent revenue and capital revenue; he defined Internally Generated Revenue as all tools of income to government. Some of such revenues are: taxes, rates, fees, fines, duties, penalties, rents, dues, proceeds and other receipts. Revenue had been defined in various ways by various researchers. Hence, there is no consistent way of defining it. Adam (2006) defined revenue as the cash needed by the governments to finance its programmes to meet public needs. He stressed that every government must stride to meet the yearnings and aspirations of her citizens. Funds are needed to effect government activities in order to meet these public demand. Pearce (1986) stated that government revenue is fund received apart from issue of debt and liquidation of investments. He did not classify issue of public debts and liquidation of investments as funds generated. Ishaq (2022) and Hamid (2018) defined internally generated revenue as funds derived within the state or local government area. The examples given by these two researchers include capital gain tax, pay-as-you-earn and motor license, among others. Internally generated revenue differs from one state to the other in Nigeria. Nigerian States as the second tier of government derive their IGR from available resources within their area of jurisdiction. Government revenue includes charges, tax collections, utility and insurance trust, revenue for all funds and agencies of a government and miscellaneous revenues (Adam, 2016).

The internally generated revenue of Nigerian States include taxes and levies such as Personal income tax: Pay-As-You-Earn (PAYE); Withholding tax (individuals only); Capital gains tax; Stamp duties (instruments executed by individuals); Pools betting, lotteries, gaming and casino taxes; Road taxes, etc. These constitute major sources of internal revenue to state governments. Some of the challenges faced by this source of revenue include mismanagement of tax collected, lack of public awareness, human resource problem, bribery and corruption, non-remittance of income collected and lack of public awareness (Asimiyu & Kizito 2014). Other sources of the internally generated revenue of Nigerian States are Charges and Fees. These are imposed on goods and services provided by the state government; examples are tuition fees at state-owned colleges and universities, hospital charges, parks and recreation fees, tolls, transportation charges and other fees for the use of government services (Asimiyu & Kizito, 2014).

Theoretical Review

The theoretical framework for this study is based on the public choice theory and the institutional theory. Public choice theory suggests that public policy is influenced by individual preferences and interests (Buchanan & Tullock, 1962). In the context of this study, public choice theory suggests that local government councils in Ondo State may prioritize revenue generation strategies that benefit their own interests rather than those of the community. Theoretical perspectives, such as fiscal federalism, optimal tax, public choice, tax compliance, and revenue diversification theories, provide valuable insights into the PAYE and IGR systems in Ondo State. These theories help understand the rationale behind current practices and suggest strategies for strengthening Ondo State's fiscal autonomy and maximizing revenue potential.

Tax Compliance Theory

This theory focuses on the factors that influence individuals and businesses to comply with tax regulations. It includes economic factors, such as perceived benefits from taxes, and psychological factors, such as trust in government and fear of sanctions. PAYE has high compliance due to employer-managed deductions, but compliance in other IGR categories can be improved by fostering trust in tax authorities. For instance, Ondo State's digitalization of tax systems and transparency initiatives align with tax compliance theory, potentially increasing voluntary compliance among informal sector participants and small business owners who might otherwise evade taxes. Allingham and Sandmo (2019) pioneered the study of economic deterrents to tax evasion, while Alm and Torgler (2016) explored trust in government and its impact on tax compliance, which is relevant to Ondo State's efforts to improve IGR collection.

Revenue Diversification Theory

Revenue diversification theory advocates for broadening the sources of income for government entities to minimize financial risk and dependency on a single revenue source. Ondo State's efforts

to diversify IGR by increasing PAYE contributions and expanding direct assessment collections align with revenue diversification principles. This approach reduces the state's dependence on federal allocations, which can be unpredictable due to fluctuations in national oil revenue. A diverse revenue portfolio stabilizes state finances, enabling sustainable public investments. Studies on revenue diversification by Bahl and Bird (2008) and recent Nigerian-specific studies by Taiwo and Agbeyangi (2020) emphasize the importance of broad revenue bases for financial resilience in subnational governments.

Optimal Tax Theory

Optimal tax theory focuses on designing a tax system that maximizes social welfare while minimizing economic distortions. It emphasizes setting tax rates that encourage compliance, economic growth, and effective revenue generation. For Ondo State, PAYE represents a structured approach to income taxation with relatively high compliance due to employer withholdings. Optimal tax theory supports the use of PAYE because it ensures a steady and predictable revenue stream without heavily distorting labor market decisions. Additionally, applying this theory to IGR strategies could involve balancing rates for business permits, land use charges, and other taxes to encourage both business growth and compliance. Mirrlees (2011) provided foundational insights on income tax design in optimal tax theory, while empirical works, such as those by Laffer (2024), address the impact of tax rates on compliance and revenue generation, relevant to IGR expansion in Ondo State.

Empirical Review

There is limited empirical research on the impact of direct assessment, PAYE, and internal generated revenue on local government council performance in Ondo State. However, there are several studies that have investigated similar issues in other contexts.

Adebite and Adegbayibi (2023) investigated the impact of tax income on government contributions to pension and gratuities in Nigeria. They utilized secondary data from the Central Bank of Nigeria bulletin, spanning 1981 to 2021. The data were thoroughly analyzed using Vector Error Correction Model (VECM), regression, and selected lag packages, along with Co-integration (Johansen Fisher Test Cointegration) test, Normality test, and stability test. Their findings revealed that tax income had a positive impact on pension and gratuities. Additionally, oil revenue was found to enhance the prompt payment of pensions and gratuities in Nigeria. Furthermore, income from the Federation Account and Federal retained income also positively impacted pension and gratuities, although the impact was statistically insignificant. The study also discovered that government expenditure had a positive influence on pensions and gratuities.

Osamor, Garde and Adebayo (2022) investigated the comparative analysis of pre and post e-tax system in Lagos State using secondary data of PAYE, with-holding tax, and capital gain tax which were obtained from the annual report of Lagos Internal Revenue Service (LIRS). The finding

shows that that there was a significant different between PAYE and WHT post e-tax revenue generation compared to the pre e-tax revenue generation in Lagos State, while there was no significant different between capital gain tax (CGT) post e-tax generation compared to pre e-tax revenue generation in Lagos State.

Friedman (2022) descriptively explore how class shapes the composition of civil service in the United Kingdom both vertically in terms of occupational grade and horizontally in terms of department, location, and profession. The study collected data on the class backgrounds of civil servants in the United Kingdom from the data base of Civil Service People Survey (CSPS) for 2019 encompassing 308,556 respondents. An initial descriptive analysis is conducted on collected data, followed by quantitative analysis of results of interviews with civil servants on how class background impacts the composition of the civil service vertically and horizontally. Results from the study shows that the Civil Service has significantly more staff from privileged class backgrounds than any of the comparison groups. Likewise, civil servants from disadvantaged backgrounds are particularly under-represented in London, with only 22% from working class backgrounds compared to 48% in the northeast. The north-south divide also exists with the three most exclusive work regions located in the south of England and two of the three most open areas located in the north of England. Similarly, the proportion of senior civil servants from advantaged backgrounds today is higher with 69% from professional/managerial class backgrounds, 14% from intermediate backgrounds and 17% from working-class backgrounds.

Sui, Ding, Zu and Zhao (2022) empirically analyzed the impact of Internet use on the happiness of Chinese civil servants using a sample of 3,793 civil servants in Hunan Province, China. To conduct the study, questionnaires were administered in 13 states covering departments such as education, civil affairs, health, broadcasting, statistics, taxation and food and drug safety. Total of 4,000 questionnaires were administered while 3,793 were returned as valid questionnaires satisfying acceptable criteria. While happiness is the dependent variable, internet use is the independent variable, the mediating variable is health and the control variables are demographic variables of gender, age, marital status, education level, personal income, smoking and drinking history. Collected data was analyzed using Order Probit model, and Propensity Score Matching Model (PSM) to explain the relationship between internet use and happiness of civil servants. Results from the study revealed that the regression coefficient of the effect of Internet use on civil servants' happiness is 0.085. Similarly, when the control variables of gender, age, marital status and education are added, the regression coefficient is 0.050. Likewise, when the control variables of job income, smoking history and drinking history are added the regression coefficient is 0.045; therefore, significant in all the three instances at 1% significance level. Therefore, on the overall, results indicate that Internet use is positively related to civil servants' happiness in China.

Ash, Morelli and Vannoni (2020) conducted an empirical study that focuses on the drivers of civil service reforms in the United States of America (USA) 1965-1983. To conduct the study data is collected from the partisan balance dataset. First, is data on *Divided Any*, indicating division of party control across the two legislative chambers and the governor. Second, is data on *Divided Government Veto*, which captures a more divisive situation where the legislative party has a veto proof majority. Third is the *Divided Governor*, which means that the legislature is politically unified, but the governorship is controlled by the other party. Fourth, *Divided Chambers* in which the two legislative chambers are controlled by different parties. Data is also collected on the control variables of citizen ideology, the fraction of the urban population and the number of full-time state employees. Collected data was analyzed using an econometric model that relies on the fixed effects estimation using Ordinary Least Squares (OLS) which highlights the important differences between the forms of divided government. Results from the study on the overall, revealed that there is a generally positive effect of divided government on the probability of civil service reforms with the largest and most significant effects being in Divided Government Veto and Divided Chambers.

Morgan, Okon, and Emu (2019) conducted a study that critiqued the bureaucratic theory from the perspective of the Nigerian civil service experiences specifically to (1) determine the effect of hierarchical arrangement of staff in the Nigeria Civil Service (2) ascertain the effect of over rigidity of duties in the Nigeria Civil Service and (3) examine the impact of management by formal rule in the Nigeria Civil Service. The study collected primary data through the instrument of questionnaires administered to 200 federal civil servants spread across five Federal Ministries in Cross River State using census method. Collected data was subjected to descriptive statistical analysis to evaluate the variables based on the values of standard deviation and mean while multiple regression analysis was used to test developed hypotheses and ascertain the significance level of the variables utilized in the study. The study is however, not guided by any theoretical underpinning. Results from the study revealed aggregate mean and standard deviation of 4.00 and 0.61 respectively indicating that the three bureaucratic variables used for the study correlates with the Nigerian Civil Service. Similarly, results from multiple regression analysis revealed that hierarchical arrangement of staff has significant statistical influence on the Nigerian Civil Service, while over rigidity of duties and management by formal rules does not statistically influence the Nigerian Civil Service.

Ogunnaike et al. (2019) found that IGR was a significant contributor to the financial sustainability of local governments in Nigeria. The study used a sample of 30 local governments and found that IGR was positively correlated with financial sustainability. Similarly, a study by Fagbohun and Adeola (2015) found that internal generated revenue was a significant contributor to the financial sustainability of local governments in Nigeria. The study used a sample of 30 local governments

and found that internal generated revenue was a significant predictor of financial sustainability. However, there is limited research on the impact of these revenue sources on local government council performance in Ondo State. Therefore, this study aims to fill this gap by investigating the impact of direct assessment, PAYE, and internal generated revenue on the performance of State government IGR in Ondo State.

Gaps in Literature

While similar research might have been conducted in other Nigerian states, this study uniquely employs both primary and secondary data to examine the impact of Pay-As-You-Earn (PAYE) and other taxes on internally generated revenue (IGR) in Ondo State, Nigeria (Osamor, Garde, and Adebayo, 2022; Adebayo et al., 2018; Lubben & Selden, 2022; Angahar & Alfred, 2022). This research aims to investigate the effect of direct assessment and PAYE on IGR in Ondo State, Nigeria.

METHODOLOGY

Research Design

This study considered the measurement of the impact of pay-as-you-earn (PAYE) tax on the internal generated revenue of Ondo State. Hence, this study used mixed research method: an ex-post facto research and survey or field work as it studied the facts that occurred after relating pay-as-you-earn tax on the internal generated revenue and the researcher could not manipulate the independent variable as the its manifestation has already occurred.

The data for secondary were sourced from Ondo State Internal Revenue Service of the Board (OSIRS) from 2018 to 2023. Meanwhile, the survey data were sourced through questionnaire from the three (3) senatorial districts/ 18 Local government Areas in Ondo State. In this research, descriptive survey and ex-post facto approaches were adopted. This is to enable a systematic description of the area under study. The study covers Ondo State. The population of the study was those covered by Personal Income Tax (Amendment) Act 2011 from which personal income taxes are deducted from; which comprises employments as salaried workers (PAYE) and trades, businesses, professions and vocations (DA).

Study Population

The study population consists of all personal income tax payers in Ondo State from 2018 to 2023. The study used a sample of personal income tax payers in Ondo State from 2018 to 2023, which was randomly selected using a stratified sampling technique. The study will rely on both primary and secondary data. The secondary data include: published reports, official

documents, and statistical data from Ondo State Internal Revenue Service. Meanwhile, the primary data include survey or field work gathered through questionnaires from the eighteen local government areas in Ondo State.

Sources of Data

The study employed both primary and secondary sources of data. Primary data were collected from 18 Local Government Areas (LGAs) in Ondo State, which are categorized into three senatorial districts. Ondo South Senatorial District comprises Ile-Oluji/Okeigbo, Odigbo, Okitipupa, Irele, Ese-Odo, and Ilaje LGAs. Ondo Central Senatorial District includes Akure North, Akure South, Idanre, Ifedore, Ondo East, and Ondo West LGAs. Lastly, Ondo North Senatorial District consists of Akoko North-West, Akoko South-East, Akoko South-West, Akoko North-East, Ose, and Owo LGAs. The LGAs are divided into these three senatorial districts to ensure comprehensive coverage and accurate representation of views across the state, thereby providing valuable insights into the research topic.

A total of 1,512 questionnaires were distributed across the 18 Local Government Areas (LGAs) in Ondo State, with 84 questionnaires allocated to each LGA. Of these, 1,313 questionnaires were retrieved from respondents across the state. The breakdown of retrieved and usable questionnaires by senatorial district is as follows:

- Ondo South Senatorial District: 425 questionnaires
- Ondo Central Senatorial District: 443 questionnaires
- Ondo North Senatorial District: 445 questionnaires

Additionally, secondary data sources included published materials from the Ondo State Internal Revenue Service of the Board (OSIRS) for the period 2018-2023.

Model Specification

Model 1.

The study adapted model of Osamor, Garde and Adebayo (2022) which is stated below thus:

$$e\text{-tax} = f(\text{PAYE}, \text{CGT}, \text{WHT}) \dots\dots\dots(i)$$

where;

E-tax= E-Tax Revenue Generation

PAYE = Pay-As-You-Earn

CGT = Capital Gain Tax

WHT = Withholding Tax

The above model is modified as follows:

Functional Relation;

$$IGR = f(PAYE, DASS, RTax, OTH) \dots \dots \dots (ii)$$

Where,

IGR = Internally Generated Revenue

PAYE = Pay as You Earn

DASS = Direct Assessment

RT = Road Tax

OTH = Fine and Fees, Earning & Sales, Rent on government Property, Interests, Repayment and Dividends and Miscellaneous revenue

The regression equation based on the above functional relation of model is stated below:

$$\ln IGR = b_0 + b_1 \ln PAYE + b_2 \ln DASS + b_3 \ln RT + b_4 \ln OTH + U_t \dots \dots \dots (iii)$$

Where, L= log-linear relationship, b_0 = constant, b_1 , b_2 , and b_3 are parameter estimates of equation, U_i = Error term; it is the surrogate of all other variables that influence the dependent variable which are not included in this regression equations.

Model 2

The second model is based on the primary data sourced from the 18 LGAs in Ondo State. The model still adapts the above model with slight adjustment as follows:

$$IGR = F(TAXNET, EFFPAYE) \dots \dots \dots (iv)$$

Explicitly, the model is stated thus: $IGR_t = \alpha_0 + \alpha_1 EFFPAYE_t + \alpha_2 TAXNET_t + U_t \dots \dots (v)$

Where;

IGR = Internally Generated Revenue

EFFPAYE = Effective collection system of PAYE

TAXNET = ability of the State government to bring more tax payers into tax net in the state.

Apriori expectation

$$\alpha_1 - \alpha_2 > 0$$

Justification of the Models

The estimation technique employed in this study is the Ordinary Least Squares (OLS) method, utilizing both simple and multiple regression equations in log form. This approach is preferred due to its Best Linear Unbiased Estimator (BLUE) properties, which ensure unbiasedness, efficiency, and consistency. These properties help mitigate econometric issues such as autocorrelation, multicollinearity, and heteroscedasticity that may arise in this study (Ojameruaye & Oaikhenan, 2019). Moreover, the estimates obtained are straight elasticity measures. To ensure clarity and minimize manual computational errors, E-Views 10 software was used to estimate the model. This is particularly important given the complexities associated with time series data employed in this study.

Method of Data Analysis

The actual population figure is undefined. Both Secondary and primary data were used for the study. The secondary data was extracted from Ondo State Board of Internal Revenue Annual Tax Report from 2018 to 2023. Meanwhile, the primary data was sourced through the distribution of questionnaire across 18 LGAs in the state. Data collected were analysed using descriptive statistics and OLS regression technique at 0.05 level of significance.

This study utilizes two models: Model one focuses on secondary data, while Model two examines primary data sourced from the three senatorial districts of the state.

DATA ANALYSIS AND DISCUSSION**Model One****Unit Root Test**

Unit Root Test Since the study uses economic time-series data, it is advisable to begin by verifying the time series properties of the variables employed. That is, it is necessary to find out if the variables are stationary or non-stationary. In a nutshell, it is necessary to determine the order of integration of all the variables involved. This is best accomplished by carrying out unit root tests of the variables. In order to test for the stationarity of variables used in this study, unit root test of all the selected variables for the model were carried out using Augmented Dickey-Fuller (ADF) methodology. It is considered as the most reliable test of stationarity for economic time-series variables. It is carried out using the E-view 10 econometric software. The following results were obtained as shown in the table below.

Table 1: Summary of Unit root tests using the ADF Criterion

Variable	ADF Test Statistic Value	5% Mackinnon Critical Value	Remark	Order of Integration
D(IGR)	-10.68116	-4.205004	Stationary	I(1)
D(PAYE)	-5.406753	-4.219126	Stationary	I(1)
D(DASS)	-6.657538	-4.205004	Stationary	I(1)
D(RT)	-5.254923	-4.211868	Stationary	I(1)
D(OTH)	-4.930279	-4.205004	Stationary	I(1)

Source: Researcher's Computation (2025) from E-Views 10.

Note that all the variables employed in the model viz.: IGR = Internally Generated Revenue, PAYE = Pay as You Earn, DASS = Direct Assessment, RT = Road Tax, OTH = Fine and Fees, Earning & Sales, Rent on government Property, Interests, Repayment and Dividends and Miscellaneous revenue i.e. Revenue from state own parastatals are stationary at first level with the order of integration of I(1). Therefore, we can estimate ordinary least square models using the log version.

PRESENTATION OF RESULTS

This section deals with data presentation, analysis and discussion of findings. Hence, the secondary data obtained from the state board of internal revenue for the regression are shown in the tables below. According to the issues involved in this research we hereby present interpretation and analysis. The ordinary least squares method is used to analyze the data presented, followed by the discussion of findings about the test results of the hypotheses and inferences drawn to answer the research questions of the study. Thus, the estimates from the following measures are summarized under the following issues examined in this study.

Table 2: **Presentation of Ordinary Least Square Result**

Variables	Coefficient	Stand. Error	T-stat	Prob.
Constant	0.904711	0.874500	1.034547	0.4096
InD(PAYE)	0.755342	0.058073	13.00669	0.0059
InD(DASS)	0.000113	0.005416	0.020805	0.9853
InD(RT)	0.026424	0.052932	0.499203	0.0541
InD(OTH)	0.207104	0.026580	7.791828	0.0161
R²= 0.999179 Adj-R²= 0.997537 F = 608.4330 DW = 2.3527				

Source: Researcher's Computation (2025) from E-Views 10.

The coefficient of PAYE stood at 76%; thus a naira increase in PAYE will lead to an increase of about 76% in internally generated revenue. There is a direct relation between IGR and PAYE going *a priori* expectation. When PAYE as component of personal income tax are collected along with other taxes, such as road tax, Fine and Fees, Earning & Sales, Rent on government Property, Interests, Repayment and Dividends and Miscellaneous revenue i.e. Revenue from state own parastatals its effect on internally generated revenue will deteriorate as reviewed by this research.

Looking at the result presented above, the coefficient of direct assessment is almost zero and statistically insignificant in its contribution to internally generated revenue and road tax stood at 3% which shows infinitesimal effect on the internally generated revenue. Other taxes such as Fine and Fees, Earning & Sales, Rent on government Property, Interests, Repayment and Dividends and Miscellaneous revenue i.e. Revenue from state own parastatals regression coefficient stood at 21% and it statistically significant. It is one of the taxes that impact significantly on internally generated revenue.

Research Findings

- i. Thus the regressors in the model explain over 99% percent of the systematic variation in internally generated revenue during the 6 years period, 2018 through 2023. This is an indication that 3% percent and 1% systematic variation in internally generated revenue was accounted by variables which are not included in the model. The result of the coefficient of determination even after the adjustments of the degree of freedom of the two models respectively, the R^2 still stood at over 99%. Therefore, the models are good for forecasting of internally generated revenue from personal income tax. The variables involved are the major determinants of internally generated revenue in Ondo state.
- ii. The internally generated revenue equations have F-statistic of 608.4330 with P-value (0.001642). The hypotheses of a log linear relationship between internally generated revenue and the selected variables in the two research models are statistically significant at 1% confidence level.
- iii. The most important variables that can drive internally generated revenue in Ondo state according to this research are; PAYE and other taxes such as Fine and Fees, Earning & Sales, Rent on government Property, Interests, Repayment and Dividends and Miscellaneous revenue i.e. Revenue from state own parastatals, they are correctly signed based on *a priori* expectation and are statistically significant even at 5% confidence level. The result of this research is free of auto-correlation in both model.

Model Two

Reliability Analysis

The reliability analysis using Cronbach alpha is utilized to examine the internal consistency and reliability of the constructs. The detailed of the reliability analysis is presented into Table 3 below.

Table 3. Reliability Analysis

Variables	Cronbach's Alph	Std Error	Lower Bound	Upper Bound
Internally Generated Revenue (IGR)	0.8461	0.1123	0.6249	0.9432
TAXNET	0.8234	0.1211	0.5832	0.9325
EFFPAYE	0.8593	0.1056	0.6508	0.9511

Source: Field survey 2025

Table 3 shows that the Cronbach's Alpha for all variables exceeds 0.70, indicating reliable constructs. The highest Cronbach's Alpha value is 0.8593 for the Effective collection method of PAYE in Ondo State, while the lowest is 0.8234 for the ability of the state government to bring

more taxpayers into the tax net in Ondo State. Overall, the Cronbach's Alpha results demonstrate good internal consistency and reliability for IGR, TAXNET, and EFFPAYE.

Descriptive Statistics

Descriptive statistics like mean, standard deviation, minimum, maximum etc are employed to describe the phenomenon. The summary of descriptive statistics of the all variables used in this study is presented in Table 4.

Table 4. Summary of Descriptive Statistics of Selected Variables

Items	Mean	Min	Max	Std Dev	Vari	Skewness	Kurtosis	JB
IGR	107.42	79	1313	12.13	147.11	-0.2148	1.6311	0.2349
TAXNET	103.83	92	1313	11.41	130.11	0.1539	1.9235	0.1189
EFFPAYE	105.33	91	1313	10.92	119.11	-0.1241	1.8543	0.1549

Source: Field survey 2025

The Table 4 depicts the summary statistics of IGR, TAXNET and effective collection system of Pay-As-You-Earn (EFFPAYE). The minimum IGR, TAXNET and EFFPAYE is 79, 92 and 91 respectively. Also, the maximum of value of IGR, TAXNET and EFFPAYE are equal which is 1313. Meanwhile, the standard deviation is 12.13, 11.41 and 10.92 for IGR, TAXNET and EFFPAYE respectively. The JB for the entire falls within the acceptable region of 0 – 10. Deductive from the analysis, the results show that none of the variables exceed 1, indicating that the data are evenly distributed. There are 1313 observations in all.

The Correlation Coefficient Matrix

In this section, the correlation between internally generated revenue (IGR) and Effective collection system of PAYE (EFFPAYE) and IGR and the ability of the state government to bring more tax payers into tax net (TAXNET) are measured which shows the degree of relationship among the variables. The detailed of correlation coefficient is presented in Table 5.

Table 5. Correlation Coefficient

Items	IGR	TAXNET	EFFPAYE
IGR	1.000 -	0.8573* (0.0001)	0.8232** (0.0003)
TAXNET		1.000	0.9013** (0.0001)
EFFPAYE			1.000 -

Source: Field survey 2025.

The parenthesis indicates the p-value.

**** Correlation is significant at the 0.01 level (2-tailed).**

*** Correlation is significant at the 0.05 level (2-tailed).**

The Table 5 presents that the correlation coefficient between IGR and TAXNET is significantly positively related. The correlation between IGR and TAXNET is significant at level of 1% and 5%. Similarly, the correlation between IGR & EFFPAYE is also positive. The result of correlation is statistically significant at 1% and 5%.

Ordinary Least Square (OLS)

In this section, the impact of tax net and effective collection system by the state government of PAYE on internally generated revenue (IGR) is measured. The fitted model explained the variation of internally generated revenue (IGR) by the ability of the state government to bring more tax payers into tax net and effective collection of PAYE by the government is 15.19 and P-value of 0.0095 percent. The detailed of OLS result is presented in Table 6 and Table 7.

Table 6. Model Summary and ANOVA Result

Source	DF	Sum Sq	Mean Sq	F Statistics	P-Value
TAXNET	1	1411.11	1411.11	12.53	0.0043
EFFPAYE	1	1011.11	1011.11	8.99	0.0119
Residual	3	337.78	112.59		
Total	2760.00	112.59			

Source: Field survey, 2025

The ANVOA result indicate a significant effect of TAXNET on IGR ($f(1,3) = 12.53$ and probability value of 0.0043). Similarly, a significant effect of EFFPAYE on IGR was indicated by the ANOVA with the F-Statistics of 8.99 and probability value (P-value) of 0.0119.

Table 7: OLS Result of Tax net and Effective PAYE on IGR in Ondo State

Model	Beta	S. E.	t	Sig.
Constant	0.2311	0.0531	4.3561	0.0001
TAXNET	0.4143	0.0603	6.67332	0.0001
EFFPAYE	0.3531	0.0609	5.8065	0.0001
R-Square	0.7521	Probability of F-Stat (0.0001)		
Adj. R-Square	0.7321			
F-Statistics	10.2941			

Source: Field survey, 2025

Interpretation and Discussion of Findings

Table 7 above presents the Ordinary Least Squares (OLS) results for the third and fourth objectives of the study. This study aims to assess the impact of direct assessment and Pay-As-You-Earn (PAYE) on the internally generated revenue (IGR) in Ondo State, Nigeria. The third and fourth objectives focus on evaluating the state government's ability to bring more taxpayers into the tax net and assessing the effectiveness of PAYE in enhancing revenue generation in Ondo State.

The results indicate that TAXNET has a significant positive effect on Internally Generated Revenue (IGR) in Ondo State. Specifically, if the state government expands the tax net to include more taxpayers, it has the potential to stimulate IGR by 41.45%. This result is statistically significant, with a probability value of 0.0001. The finding is consistent with the work of Osamor, Garde, and Adebayo (2022), while it contrasts with the work of Friedman (2022). The significance of this study lies in its implication that the Ondo State government should strategize to expand the tax base, thereby boosting revenue for the state government.

Furthermore, the effectiveness of Pay-As-You-Earn (PAYE) in enhancing revenue generation could boost Internally Generated Revenue (IGR) by 35.31%, as indicated by the beta result. This finding is also statistically significant, with a probability value of 0.0001. The result aligns with the works of Adegbite and Adegbayibi (2023) and Sui, Ding, Zu, and Zhao (2022), but contradicts the findings of Morelli and Vannoni (2020). The implication of this finding underscores the importance of adopting a multifaceted approach to revenue collection, particularly incorporating PAYE and other forms of taxes, to increase internally generated revenue for the state government.

The coefficient of determination (R^2) is 0.7521, implying that the independent variables explain 75.21% of the variation in the dependent variable. The remaining variation is captured by the error term. The adjusted R-Square value corroborates this result, with a value of 73.21%. The overall regression result indicates a well-fitted model, with an F-statistic value of 10.2941 and a probability value of 0.0001.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The broad objective of this study is to determine the effect of direct assessment and personal income tax on internally generated revenue in Ondo State. The study adopted two models: model one addresses secondary sources of data for the study while model two handled the primary sources of data from the 18 local government areas in Ondo State. This justifies implicit theories that underline the relationship between internally generated revenue of the state and the selected exogenous variables as stated in the methodology; this is a strong indication that these variables are the major factors that determine the profile of the state internal generated revenue.

Arising from the results from model one and model two adopted in this study, it is deduced that in model one that PAYE and other sources of taxes such as fines, fees, earning and sales, rent on government property, interest, repayment and dividend and miscellaneous revenues should be largely explored by the government to boost the internally generated revenue in Ondo State. Meanwhile, the road taxes and direct assessment do have positive relationship IGR but not statistically significant in enhancing the state IGR. This study may conclude that the inability of direct assessment and road tax to effectively impact internally generated revenue of the state is due to shortcomings of poor tax administration bedeviled with bureaucratic corruption in Ondo State Board of Internal Revenue.

In model two, it could be concluded that the ability of the Ondo State government to bring in more tax payers into the tax net and deploy effective collection system of PAYE and other taxes have significant impact on the internally generated revenue in Ondo State (IGR).

Recommendations

Based on the findings of this study, the following recommendations are made:

- i.** In order to improve on the present level of internally generated revenue in Ondo state, a comprehensive review of the present strategies being used to attract components of Personal Income Tax must be carried out by the government and internal revenue service of the state and the revenue generated should be used judiciously to provide adequate social amenities that will attract companies to the state, that can generate more PAYE and additional profit taxes.
- ii.** Government representative at the joint tax board must also bring it to the attention of the board the need to review the existing outdated law provisions on direct assessment and road tax collections and compliance to enable the state enforce the tax on sole proprietors' businesses and other economic activities in the state.

- iii. The internal revenue service department across local council must be fully computerized in their operations to enhance the compilation of a comprehensive database for the taxpayers for easy identification and personal identification number must be issued to eligible taxpayers which must be unique to pay taxes to serve as a machinery to bureaucratic petty corruption within the board. This will provide a track record for actual state revenue collected for a period.
- iv. More inward should be looked upon by the state government to generate revenue from others natural resources as the concurrent list has been reviewed by legislative arms of government.
- v. The state government should endeavor to bring in more tax payers into the tax net as this will further boost internally generated revenue (IGR).
- vi. The Ondo State government should deploy more effective collective system of PAYE and other sources of taxes to enhance more revenue generation in the state.
- vii. Finally, operational and administrative autonomy to the Board of internal revenue of the state, faithful and efficient revenue monitoring and collection officers is recommended and corporate rules and regulations to sanction any erring revenue officers for revenue diversion should be enshrined in the autonomy document and the penalty against any taxpayer who unnecessarily evade his/her tax or harass the revenue officers should be stated clearly in the document.

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