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The digital tax administration in Nigeria: An empirical assessment of the new national e-invoicing regime

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***Abstract*---**This study examined Digital Tax Administration in Nigeria; an Empirical Assessment of the new National E-Invoicing regime. The study was motivated by the growing adoption of digital technologies by tax authorities to enhance taxpayer compliance, revenue assurance, transparency, and administrative efficiency. Specifically, it assessed the effects of System Integration (SI) on Taxpayer Compliance (TC) and Invoice Automation (IA) on Tax Revenue Assurance (TRA) in Nigeria. A quantitative approach and survey research design were adopted. Data

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were collected through a structured questionnaire administered to respondents knowledgeable in taxation and analyzed using descriptive and inferential statistics. Simple linear regression was used to test the hypotheses at a 5% significance level, with emphasis on the regression coefficient, coefficient of determination, t-statistic, and F-statistic. The findings showed that System Integration significantly and positively affects Taxpayer Compliance, while Invoice Automation significantly and positively influences Tax Revenue Assurance in Nigeria. The study concludes that digital invoicing can strengthen tax administration through improved compliance and revenue assurance. It recommends that the Nigeria Revenue Service (NRS) deploy advanced analytical tools for risk-based audits and detection of unusual transactions and invoice discrepancies.

***Keywords*---**Digital Tax Administration, E-Invoicing, System Integration and Invoice Automation.

1.0 Introduction

The emergence of the information age represents one of the most influential developments of the new millennium, with far-reaching implications for business activities and economic operations worldwide. Significant advancements in Information and Communications Technology (ICT) have transformed the ways in which information is generated, stored, processed, and communicated. These technological innovations have made it possible for information to be converted into digital formats and transmitted across geographical boundaries with greater speed, efficiency, accuracy, and relatively lower costs (Johnson, 2005). The increasing application of these technologies has also created new possibilities for governments to modernize administrative processes, improve information management, strengthen regulatory oversight, and enhance the efficiency of public revenue collection. In particular, the digitalization of tax administration provides an opportunity to address some of the traditional weaknesses associated with manual tax systems, including limited access to taxpayer information, inadequate monitoring of transactions, tax evasion, and revenue leakages (Johnson, 2005).

Digital tax administration involves the application of information technology, electronic databases, automated processes and digital communication channels to taxpayer registration, filing, payment, reporting, auditing and enforcement. Through digitalization, tax authorities can obtain more timely and reliable information about economic activities and use data to improve taxpayer identification and compliance monitoring. The broader Nigerian experience with electronic financial systems demonstrates the potential of digital platforms to create transaction trails, improve transparency and reduce dependence on manual processes. Nigeria has embarked on one of the most significant reforms in tax administration through the introduction of the national E-invoicing and Electronic fiscal system (EFS) also known as the merchant buyer solution (MBS). The reform aims to digitize invoice generation, transmission and validation, thereby improving tax compliance, reducing tax evasion and increasing

government revenue. Large taxpayers are required to onboard, integrate their systems, complete testing and commence invoice transmission with compliance monitoring already underway (Gaiya, et al 2016).

Taxation remains a major source of government revenue, funding public expenditure, infrastructure, and economic development. In Nigeria, its importance has increased as the government seeks to reduce dependence on crude-oil revenue. Consequently, ICT-driven tax administration has become essential for improving the identification of taxable transactions, monitoring business activities, expanding the tax base, and enhancing compliance. However, weak tax administration, a narrow taxpayer base, tax evasion, inadequate information, and revenue leakages have limited Nigeria's tax revenue potential. Golit (2008) noted that Nigeria had not fully exploited its taxable capacity and emphasized tax-base expansion and control of the informal economy as means of improving revenue performance. These challenges underscore the need for digital tax administration, including electronic invoicing and fiscal systems, to improve the capture, verification, and monitoring of taxable transactions (Golit, 2008).

The effectiveness of a tax system depends not only on the existence of appropriate tax laws but also on the capacity of the tax authority to identify taxable transactions, assess taxpayers accurately, monitor compliance and collect revenue efficiently. In this regard, traditional tax administration systems that rely heavily on manual documentation and taxpayer self-reporting may create information gaps and opportunities for under-declaration, tax avoidance and evasion. Gaiya, et al (2016) observed that weaknesses in Nigeria's tax system were associated with low compliance, tax avoidance and evasion, inadequate data for assessment and bureaucratic bottlenecks.

1.2 Statement of the Problem

Taxation remains a fundamental instrument of domestic revenue mobilisation and an important means through which governments finance public expenditure and provide essential public services. In Nigeria, strengthening domestic tax revenue has become increasingly important given the need to reduce excessive dependence on volatile oil revenues and improve the sustainability of public finance. However, the effectiveness of the Nigerian tax system has continued to be constrained by weaknesses in tax administration, tax evasion and avoidance, inadequate taxpayer information, limited compliance, and deficiencies in the processes used for monitoring and reporting taxable transactions (Asomba & Ifeyinwa, 2023). These challenges have implications for the ability of the government to fully realise the country's available tax revenue potential.

The challenges associated with conventional tax administration are particularly significant in an environment where commercial activities are becoming increasingly digital and transaction volumes are expanding. Manual and fragmented approaches to the recording and reporting of transactions may limit the ability of tax authorities to obtain timely and accurate information with which to verify taxpayers' declarations and monitor taxable activities. Empirical evidence from Nigeria indicates that technology-based tax administration can improve some dimensions of tax compliance. For instance, Irefe-Esema and Akinmade

(2020) found that tax automation improved tax registration and payment compliance in Nigeria, although its effect on filing and reporting compliance was constrained by technical difficulties and the complexity of electronic platforms. Similarly, Edori (2023) reported that electronic tax services, including e-registration, e-filing, e-tax payment, e-receipts and electronic tax clearance certificates, significantly influenced the ease of tax compliance in Nigeria. These findings suggest that digitalisation can improve tax administration, but its effectiveness is dependent on the design, accessibility and implementation of the technology.

The introduction of the National E-Invoicing Regime represents a further and more transaction-oriented development in Nigeria's digital tax administration. Unlike electronic tax services that primarily facilitate registration, filing or payment, e-invoicing is designed to provide electronic documentation and reporting of taxable supplies, thereby giving the tax authority greater access to transaction-level information. The legal foundation for this development is contained in the Nigeria Tax Act, 2025 and the Nigeria Tax Administration Act, 2025. Section 158 of the Nigeria Tax Act, 2025 provides for the fiscalisation of taxable supplies, while the Nigeria Tax Administration Act, 2025 establishes provisions relating to the deployment and use of electronic fiscal systems and technology in tax administration.

The significance of the new regime lies in its potential to strengthen the information base upon which tax administration is conducted. Access to more timely and reliable transaction information could enable the tax authority to improve the verification of taxpayer declarations, identify discrepancies between reported transactions and tax returns, strengthen compliance monitoring and reduce opportunities for under-reporting and other forms of tax non-compliance. This expectation is consistent with previous evidence that information technology can improve tax administration. Ikegwuru and Okee (2023) reported that information technology significantly moderated the relationship between tax compliance and tax revenue in the Federal Inland Revenue Service.

Notwithstanding these potential benefits, the introduction of an electronic invoicing regime does not, in itself, guarantee improved tax administration or higher levels of taxpayer compliance. Previous research has demonstrated that technology-based tax administration can encounter significant implementation constraints. Irefe-Esema and Akinmade (2020), found that although automation improved registration and payment compliance, filing and reporting compliance did not respond positively because of technical barriers and difficulties associated with the electronic platform. Similarly, Mascagni, Mengistu and Woldeyes (2020) observed that information technology-led tax administration reforms in developing countries may be constrained by corruption, inadequate infrastructure and the inability of smaller businesses, particularly those in the informal sector, to access the technological infrastructure required for compliance.

These concerns are relevant to the Nigerian National E-Invoicing Regime because its effectiveness is likely to depend on several factors, including the availability and reliability of digital infrastructure, taxpayers' technological capacity, awareness and understanding of the new requirements, ease of system adoption,

interoperability with existing accounting and business systems, technical support, data security and the administrative capacity of the Nigeria Revenue Service to process and utilise the information generated by the system. The problem is further complicated by the diversity of Nigerian taxpayers, ranging from large corporations with sophisticated information systems to small and emerging businesses with comparatively limited technological and financial capacity. Consequently, while the e-invoicing regime is intended to strengthen tax administration, there is a possibility that inadequate technological preparedness, implementation difficulties and compliance costs could limit the extent to which its expected benefits are realized.

Research Gap

More importantly, the National E-Invoicing Regime is a relatively recent development in Nigeria's tax administration landscape. Consequently, much of the existing empirical literature on digital tax administration in Nigeria relates to earlier electronic tax initiatives such as e-filing, e-payment, electronic registration and other forms of tax automation rather than the new national e-invoicing framework itself. For example, existing Nigerian studies have examined the effects of tax automation on compliance (Irefe-Esema & Akinmade, 2020), electronic tax services on the ease of compliance (Edori, 2023), and digitalisation on tax administration (Audu & Ishola, 2021). However, these studies do not provide sufficient empirical evidence on the specific implications of the newly introduced National E-Invoicing Regime for tax administration in Nigeria.

This creates an important empirical gap. Although the legal and policy framework provides a basis for expecting e-invoicing to improve transaction visibility, taxpayer compliance, revenue assurance and administrative efficiency, there is still inadequate empirical evidence regarding the extent to which these expected outcomes can be achieved under Nigeria's new e-invoicing environment. In particular, there is a need to establish whether the regime is capable of improving taxpayer compliance, enhancing the accuracy and transparency of transaction reporting, strengthening revenue assurance and reducing opportunities for tax leakages, while also determining the implementation factors that may facilitate or constrain its effectiveness.

The central problem of this study, therefore, is the limited empirical evidence on the effectiveness of the new National E-Invoicing Regime as an instrument of digital tax administration in Nigeria. While the government has established a statutory framework for electronic fiscalisation and commenced the transition towards technology-driven transaction reporting, it remains necessary to empirically determine whether the regime is achieving, or is capable of achieving, its intended tax administration objectives. Addressing this problem is important because evidence-based assessment can assist the Nigeria Revenue Service, taxpayers, policymakers and other stakeholders in identifying areas requiring improvement and ensuring that the digitalization of tax administration translates into improved compliance, transparency, efficiency and sustainable domestic revenue mobilization.

1.3. Objectives of the study

The main objective of this study is to empirically assess the effect of the new National E-Invoicing Regime in enhancing digital tax administration in Nigeria. The specific objectives of this study include the following to: examine the effect of System Integration on taxpayer compliance in Nigeria and assess the effect of Invoice Automation on tax revenue assurance in Nigeria**.**

2.1 Conceptual Review

2.1.1 National E-Invoicing Regime

The National E-Invoicing Regime may be conceptualized as a technology-enabled tax administration framework through which taxable transactions are electronically generated, processed, validated, transmitted and preserved in a structured format for use by taxpayers and the tax authority. Unlike conventional paper-based invoicing, e-invoicing involves the creation and exchange of structured electronic invoice data that can be automatically processed by accounting and tax administration systems. The OECD (2022) explains that a true electronic invoice is a structured digital file that enables the exchange and automated processing of transaction data between the accounting systems of parties to a transaction.

In the Nigerian context, the National E-Invoicing Regime forms part of the broader fiscalization of taxable supplies. Section 158 of the Nigeria Tax Act, 2025 provides that a taxable person making a taxable supply shall implement the fiscalisation system deployed by the Service, while the legislation envisages the use of electronic devices, software and secured communication systems for electronic invoicing and data transfer. Similarly, the Nigeria Tax Administration Act, 2025 provides for an Electronic Fiscal System through which taxable supplies are recorded and reported, with taxable persons required to maintain accurate records of transactions passing through the system (OECD, 2022).

The significance of the National E-Invoicing Regime extends beyond simply replacing paper invoices with electronic documents. It represents a shift towards data-driven and transaction-based tax administration**,** where invoice information can be captured in a standardised format and made available for automated processing, verification, monitoring and audit. The OECD (2024) notes that digitalisation has increased the availability of tax-related data from e-invoicing and automated transaction reporting, allowing tax administrations to undertake more timely and targeted compliance activities (OECD, 2024).

For the purpose of this study, therefore, the National E-Invoicing Regime is defined as the technology-enabled framework through which taxable transactions are electronically invoiced, integrated with relevant business and tax systems, transmitted to the tax authority, electronically validated and digitally preserved to facilitate transaction monitoring, tax compliance and audit activities. The National E-Invoicing Regime is operationalized through five dimensions: system integration, invoice automation, real-time transaction reporting, electronic invoice validation and digital audit trail (OECD, 2022).

2.1.2 Digital Tax Administration

Digital tax administration refers to the use of information and communication technologies to automate tax assessment, collection, filing and payment processes (Amaefule, 2012). It involves electronic interaction and data exchange between taxpayers and tax authorities, replacing cumbersome manual procedures with more efficient, secure and technology-driven tax services (Arya, 2012).

2.1.3 Taxpayer Compliance

Taxpayer compliance refers to the extent to which individuals, businesses and other taxable persons fulfill the obligations imposed on them by tax laws and regulations. The OECD identifies the principal dimensions of tax compliance as registering with the tax authority where required, filing tax returns within the prescribed period, accurately reporting taxable information and paying tax liabilities when due. Thus, taxpayer compliance goes beyond the mere payment of taxes; it encompasses the taxpayer's willingness and ability to provide complete and accurate information and observe the various procedural requirements established by the tax authority (OECD, 2008).

Within the context of digital tax administration, taxpayer compliance can be influenced by the ease, transparency and reliability of electronic tax systems. Digital platforms can reduce some of the administrative difficulties associated with manual tax processes by facilitating registration, reporting, filing and payment. In Nigeria, Edori (2023) found that electronic tax services, including e-registration, e-filing, e-tax payment, e-receipts and electronic tax clearance certificates, had significant relationships with the ease of tax compliance. Taxpayer compliance refers to the extent to which taxpayers comply with the requirements associated with the National E-Invoicing Regime by accurately recording and reporting taxable transactions and fulfilling their related tax obligations within the prescribed period**.** It may therefore be assessed through indicators such as timely reporting, accurate declaration of transactions, proper issuance of electronic invoices, completeness of transaction records and timely settlement of tax liabilities (OECD, 2008).

2.1.4 Tax Revenue Assurance

Tax revenue is describe as government income derived from various taxes imposed on income, profits, goods and services, property, payroll and other taxable activities. Taxation is a compulsory levy imposed by government on individuals and organisations to generate revenue for public purposes (Onyiah, Ugwoke and Nwangwu, 2024). These levies apply to income, consumption and capital, including salaries, business profits, dividends, royalties, company profits, petroleum profits and capital gains (Aguolu, 2004). Similarly, taxation is viewed as a mandatory contribution imposed on persons or their property to finance public security, social amenities and the economic welfare of society (Appah 2004).

Revenue assurance refers to the processes and mechanisms through which a tax authority obtains reasonable confidence that the taxes legally due have been properly identified, reported, assessed and collected. The concept is closely associated with the ability of a revenue authority to identify and minimize risks of under-reporting, non-reporting, inaccurate declarations and other forms of

revenue leakage. The Canada Revenue Agency, drawing on the OECD's tax-assurance framework, describes tax assurance in terms of the extent to which a revenue body has sufficient confidence that the relevant tax base is under control and that taxes are accurately reported and paid (Government of Canada, 2017). For this study, Revenue assurance refers to the capacity of the National E-Invoicing Regime to strengthen the tax authority's ability to identify taxable transactions, verify reported transactions, detect under-reporting and reduce opportunities for tax revenue leakage (Government of Canada, 2017).

2.1.5 Transaction Transparency

Transaction transparency refers to the extent to which information on taxable transactions is accurately, completely and promptly recorded and made available to tax authorities for verification and monitoring. Digital tax systems enhance transparency by creating electronic records that improve the visibility, traceability and analysis of transactions. In the context of this study, it reflects the extent to which the National E-Invoicing Regime improves the accuracy, availability and traceability of taxable transaction information (OECD, 2025). The use of electronic invoices also facilitates automated checks, data matching and validation of taxpayer information, thereby strengthening tax administration (OECD, 2025).

2.1.6 Administrative Efficiency

Administrative efficiency is the ability of tax authorities to achieve their objectives accurately, promptly and cost-effectively while making effective use of available resources. It covers functions such as taxpayer registration, assessment, collection, verification, auditing and enforcement. Digital technologies increasingly improve these functions by reducing manual processes and enhancing the efficiency of taxpayer interactions and tax administration (OECD, 2023).

2.1.7 Legal and Regulatory Framework for E-Invoicing and Electronic Fiscalisation in Nigeria

The ongoing transformation of Nigeria’s tax administration is supported by the statutory framework established under the Nigeria Tax Act, 2025 (NTA) and the Nigeria Tax Administration Act, 2025 (NTAA). These enactments provide the legal foundation for the deployment of technology-based mechanisms for tax administration and the fiscalisation of taxable supplies. In particular, Section 158 of the Nigeria Tax Act, 2025 requires a taxable person making a taxable supply to implement the fiscalisation system deployed by the Nigeria Revenue Service (NRS) in accordance with the Nigeria Tax Administration Act, 2025. The provision further contemplates the use of fiscal equipment, software applications, electronic devices and secured communication networks for electronic invoicing and the transmission of transaction information (Adekoya, 2026).

The Nigeria Tax Administration Act, 2025 complements this requirement by establishing the operational basis for an Electronic Fiscal System (EFS). Under Section 23 of the Act, where the Service deploys an EFS, persons making taxable supplies are required to use the system for the recording and reporting of their transactions. Taxable persons are also expected to maintain accurate records of transactions processed through the system, while the Service is empowered to determine the fiscalisation model, provide transitional arrangements and issue

regulations necessary for implementation. Consequently, e-invoicing and electronic fiscalisation are not merely administrative initiatives but form part of a statutory compliance framework for the digital administration of Value Added Tax (VAT) (Adekoya, 2026).

The legal framework is further strengthened by Section 71 of the Nigeria Tax Administration Act, 2025, which authorises a relevant tax authority to deploy technology for the automation of tax administration functions, including tax assessment, collection, accounting and information gathering. This provision demonstrates a deliberate legislative shift from predominantly manual tax administration towards technology-enabled processes capable of improving the accuracy, speed and efficiency of tax administration. It also provides the statutory basis for the use of digital platforms and other technological tools in strengthening tax collection and compliance monitoring (Adekoya, 2026).

Within this legal framework, the NRS has adopted a phased approach to the implementation of the national e-invoicing and EFS regime. The phased implementation is designed to facilitate a gradual transition of taxpayers into the new digital compliance environment while allowing the tax authority to identify and address technical, operational and administrative difficulties associated with the system. The approach also provides an opportunity for taxpayers and other stakeholders to become familiar with the new requirements before wider implementation. Thus, the phased rollout can be regarded as both a regulatory and administrative strategy for balancing effective enforcement with taxpayer readiness (Adekoya, 2026).

The implementation of the e-invoicing framework is structured around different categories of taxpayers, particularly according to business size and turnover. The initial focus on large taxpayers is consistent with the need to introduce the system among businesses with relatively greater technological and administrative capacity and substantial transaction volumes. Subsequent expansion to medium and emerging taxpayers is intended to extend the benefits and obligations of electronic fiscalisation across progressively broader segments of the economy. The NRS's February 2026 implementation notice confirms the continuation of the phased rollout to medium and emerging taxpayers following the initial implementation for large taxpayers (Adekoya, 2026).

The Nigerian e-invoicing and EFS framework therefore reflects the country's broader movement towards the digitalisation of tax administration and aligns with the international development of technology-based approaches to tax compliance and transaction reporting. Its statutory foundation under the Nigeria Tax Act, 2025 and the Nigeria Tax Administration Act, 2025 demonstrates that digital fiscalisation is increasingly becoming an integral component of Nigeria's tax administration architecture. While the framework offers prospects for improved transparency, revenue assurance, compliance monitoring, information management and reduction of tax leakages, its effectiveness will depend on factors such as technological infrastructure, taxpayer readiness, regulatory clarity, data management, system interoperability and the capacity of the tax authority to implement and enforce the new requirements effectively. These issues

provide an important basis for examining both the prospects and challenges of digital tax administration in Nigeria (Adekoya, 2026).

2.2 Theoretical Review

This study adopted Technology Acceptance Model (TAM) and Technology–Organization–Environment (TOE) Framework as theories.

2.2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), explains technology adoption through two key factors: perceived usefulness and perceived ease of use. Perceived ease of use refers to the extent to which users consider a technology simple and effortless to operate, while perceived usefulness reflects the belief that the technology will improve performance or deliver valuable outcomes. In this study, TAM explains policymakers' adoption of Artificial Intelligence where it is perceived as easy to use and effective in improving debt risk analysis. TAM is highly relevant because the National E-Invoicing Regime requires taxpayers and tax officials to interact with a new digital system**.** Its effectiveness may depend partly on whether users perceive the system as useful, easy to use and capable of improving their tax-related activities (Davis, 1989).

2.2.2 Technology Organization Environment (TOE) Framework

The Technology–Organization–Environment (TOE) framework, developed by Tornatzky and Fleischer (1990), explains how organizations adopt and implement technological innovations. The framework proposes that technology adoption is influenced by three contexts: Technological context (characteristics and availability of relevant technologies); Organizational context – (organizational resources, structure, management support and readinesss); and Environmental context (external factors such as regulations, government policies, market conditions and institutional pressures). The TOE framework is particularly useful because the National E-Invoicing Regime is not adopted by individuals alone. Businesses and tax authorities must integrate the technology into their existing organizational and technological environments (Tornatzky and Fleischer, 1990).

2.3 Empirical Review

Nwolu et al. (2024) assessed the influence of digital technologies on tax revenue in Nigeria using a mixed-method research design. The study focused on management staff of the Federal Inland Revenue Service (FIRS), Abuja, with a sample of 20 respondents. Primary and secondary data obtained from FIRS were analysed using descriptive statistics, Pearson Product Moment Correlation and multiple linear regression at a 5% significance level with SPSS 25. The findings indicated that digital technologies had a significant relationship with company income tax and capital gains tax.

Adefulu et al. (2024) examined the effect of tax digitalisation dimensions on tax revenue compliance among FIRS personnel in Abuja, Nigeria. The study adopted a cross-sectional survey design and collected data from 603 FIRS employees selected through simple random sampling. Using multiple regression analysis, the study found that tax digitalisation dimensions exerted a positive and significant effect on tax revenue compliance.

Lambon (2023) investigated the relationship between digitisation and tax revenue mobilisation in Sub-Saharan Africa using panel data covering 54 African countries from 2002 to 2021. Forty-two countries were included in the analysis, and the study employed a quantitative approach with a two-step system GMM estimator. The findings established a positive and significant relationship between digitisation and tax revenue mobilisation. The study recommended greater policy attention to digitisation as a means of improving revenue mobilisation. Population, trade and GDP were also found to have significant relationships with tax revenue mobilisation.

Agyei-Ababio, Ansong and Kudjo (2023) examined the information technology solutions supporting revenue mobilisation in Ghana through a qualitative case study. Data were obtained from the Ghana Revenue Authority (GRA). The study identified the Total Revenue Integrated Processing System (TRIPS) as a major technology platform supporting tax administration. TRIPS provides an integrated framework for managing direct and indirect taxes through various processing modules designed to meet the operational needs of the GRA.

Unigbokhai, Rilwani and Unigbokhai (2023) reviewed the literature on electronic tax payment and revenue generation in Nigeria. The study highlighted the declining capacity of oil revenue to adequately finance Nigeria's development needs and emphasised the importance of strengthening internally generated revenue. It sought to contribute to the existing literature on electronic tax payment and concluded that capital gains-related tax income had an insignificant effect on revenue generation in Nigeria.

Mpofu (2022) examined sustainable tax revenue mobilisation in Sub-Saharan African countries, with emphasis on the challenges and opportunities for improving tax systems. The study identified the informal sector, weak tax administration, the expansion of the digital economy, corruption, poor governance, and tax avoidance and evasion by multinational corporations as major obstacles to effective revenue mobilisation. It identified digital economy taxation, improved taxation of the informal sector, stronger tax authorities and broader tax bases as potential strategies for improving tax revenue mobilisation.

3.0 Methodology

3.1 Research Design

This study adopted a survey research design to empirically assess the effect of the new National E-Invoicing Regime in enhancing digital tax administration in Nigeria.

3.2 Sources of Data

The primary data were collected with the aid of a structured 5-point likert scale questionnaires.

3.3 Population of the study

The population of the study comprises 1,105 participants which include both management and staff of the Nigeria Revenue Service in Enugu state and Enugu State Internal Revenue Service.

3.4 Sample Size and Sampling Technique

The researcher used judgmental sampling technique to select the management and staff of Nigeria Revenue Service in Enugu and Enugu State Board of Internal Revenue Service. The questionnaires were distributed to a sample size of 294 from a population of 1,105 using Taro Yamane (1967) formula at 95% confidence level stated as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where N= Population size, e = error margin which the researcher chose to be 5%. n= sample size.

$$\text{Thus } n = \frac{1{,}105}{1 + 1{,}105\ (0.05)^2} = 294 \text{ questionnaires approximately}$$

Of the 294 questionnaires distributed, 240 were returned, representing an 82% response rate, while 54 were not returned.

3.5 Method of Data Analysis

The data were analyzed using inferential statistics, particularly simple linear regression, to assess the effect of the National E-Invoicing Regime on taxpayer compliance and revenue assurance. The analysis produced the regression coefficient (β), coefficient of determination (R^2), t-statistic, and F-statistic. The t-statistic assessed the significance of individual effects, while the F-statistic tested the overall significance of each regression model. The R^2 showed the proportion of variation in the dependent variables explained by the National E-Invoicing Regime. All hypotheses were tested at a 5% significance level.

3.6 Model Specification

The following model was used to evaluate the study:

Model 1: Taxpayer Compliance: $TC = \beta 0 + \beta_1 SI + \varepsilon \ldots$

Model 2: Revenue Assurance: $RA = \beta 0 + \beta_1 IA + \varepsilon \ldots$

Where: NER = National E-Invoicing Regime, TC = Taxpayer Compliance, RA = Revenue Assurance, β_0 = Constant/intercept, β_1 = Regression coefficient, ε = Error term

H01: System Integration has no significant effect on taxpayer compliance in Nigeria.

$TC = \beta 0 + \beta_1 SI + \varepsilon \ldots$

H02: Invoice Automation has no significant effect on Tax Revenue Assurance in Nigeria.

$TRA = \beta 0 + \beta_1 IA + \varepsilon \ldots$

4.0 Data Presentation and Analysis of Data

4.1 Data Presentation

Table 4.1. Distribution of Respondents by Working Experience.

WORKING EXPERIENCE	NUMBER	PERCENTAGE (%)
Below 5 years	31	10.544
5- 10 years	29	9.864

WORKING EXPERIENCE	NUMBER	PERCENTAGE (%)
11- 15 years	57	19.388
16- 20 years	79	26.871
21 years and above	98	33.333
TOTAL	294	100

Source: Field Survey 2026

Table 4.2. Distribution of Respondent by Departments

DEPARTMENTS	NUMBER	PERCENTAGE (%)
Tax Operations	115	39.12
Support & Corporate services	84	28.57
Digital & Technology services	51	17.35
Legal and Enforcement Services	29	9.86
Planning, Research & Statistics	15	5.10
TOTAL	294	100

Source: Field Survey 2026

Table 4.3: Examine the effect of System Integration on taxpayer compliance in Nigeria

Q1	System Integration	SA	A	UN	D	SD
1	The e-invoicing system facilitates seamless electronic exchange of transaction information between taxpayers and the tax authority.	163	120	5	5	1
2	Integration of the e-invoicing platform with existing business systems reduces duplication of transaction records.	149	115	9	10	11
3	The e-invoicing system facilitates seamless electronic exchange of transaction information between taxpayers and the tax authority.	160	127	0	4	3
4	The e-invoicing system discourages deliberate omission of taxable transactions	172	100	5	10	7
	Taxpayer Compliance	**SA**	**A**	**UN**	**D**	**SD**
5	The National E-Invoicing Regime (NER) encourages taxpayers to accurately report their taxable transactions.	144	100	15	25	10
6	Automated invoice generation encourages taxpayers to comply with tax reporting requirements.	139	95	9	30	21
7	Real-time electronic reporting makes it more difficult for taxpayers to conceal taxable transactions.	150	107	10	14	13
8	The National E-Invoicing Regime improves taxpayers' timely compliance with tax obligations.	68	74	45	50	57

Source: Field Survey 2026

Table 4.4: Assess the effect of Invoice Automation on Tax Revenue Assurance in Nigeria

Q2	Invoice Automation	SA	A	UN	D	SD
9	The National E-Invoicing Regime facilitates the automated generation of electronic invoices.	185	103	1	1	4
10	Automation of invoice processing reduces manual intervention in invoicing activities.	186	102	1	2	3
11	Automated invoicing reduces errors associated with manual preparation and processing of invoices.	180	104	2	5	3
12	Digital audit trails make it easier for tax officials to retrieve historical transaction information	169	121	0	2	2
	Tax Revenue Assurance	**SA**	**A**	**UN**	**D**	**SD**
13	The NER improves the tax authority's ability to identify taxable transactions	145	125	0	9	15
14	Real-time transaction reporting helps to reduce tax revenue leakages.	142	112	15	12	13
15	Electronic invoice validation helps the tax authority detect inaccurate or under-reported transactions	150	134	2	5	3
16	Digital records generated through the e-invoicing system strengthens the verification of taxpayers tax declarations	170	120	1	2	1

Source: Field Survey 2026

4.2. Data Analysis and Interpretation

Table 4.5: Model Summary of System Integration on Taxpayer Compliance in Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df2	Sig. F Change	
1	.899[a]	.809	.798	21.77505	.809	76.048	1	18	.000	2.134

a. Predictors: (Constant), SI

b. Dependent Variable: TC

Source: Researcher's SPSS computation (2026)

From Table 4.5 of the model summary, the R value of 0.899 indicates a very strong positive relationship between System Integration and Taxpayer Compliance. The R square of 0.809 means that 80.9% of the observed variation in

Taxpayer compliance is statistically explained by System Integration in this sample. The remaining 19.1% is associated with other factors not included in this particular regression model. The Adjusted R square of 0.798 indicates that after adjustment, System Integration explains approximately 79.8% of the variation in Taxpayer Compliance. The relatively small difference between R square 0.809 and adjusted R square 0.798 suggests that the model retains substantial explanatory power after adjustment. The Durbin Watson statistics of 2.134 is close to the benchmark of 2. This indicates no obvious serious autocorrelation problem in the residue based on this diagnostic.

Table 4.6 Coefficients of System Integration on Taxpayer Compliance in Nigeria

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.396	6.489		3.297	.004
	SI	.636	.073	.899	8.721	.000

a. Dependent Variable: TC
Source: Researcher's SPSS computation (2026)

From Table 4.6, the positive Unstandardized Coefficients B = 0.636 means that a one-unit increase in the System Integration score is associated with an estimated 0.636 unit increase in the Taxpayer Compliance score, holding the constant term in the model. The Standardized Coefficients β = 0.899 confirms a very strong positive association. The t-statistics of 8.721 is large and the associated probability value is below 0.001. Thus, System Integration is a statistically significant predictor of Taxpayer Compliance**.**

Table 4.7 Model Summary of Invoice Automation on Tax Revenue Assurance in Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df2	Sig. F Change	
1	.973[a]	.946	.943	15.92824	.946	316.451	1	18	.000	.798

a. Predictors: (Constant), IA
b. Dependent Variable: TRA
Source: Researcher's SPSS computation (2026)

From Table 4.7 of the model summary, the R value of 0.973 indicates an extremely strong positive relationship between Invoice Automation and Tax Revenue Assurance. This means that higher levels of invoice automation are associated with substantially higher levels of tax revenue assurance among the respondents. The R square of 0.946 means that 94.6% of the observed variation in Tax Revenue Assurance is statistically explained by invoice Automation within the sample. The remaining 5.4% is attributable to other factors not included in this particular regression model. The Adjusted R square of 0.943 indicates that

after adjustment, Invoice Automation explains approximately 94.3% of the variation in Tax Revenue Assurance. The relatively small difference between R square 0.946 and adjusted R square 0.943 suggests that the model retains very high explanatory power after adjustment.

Table 4.8 Coefficients of Invoice Automation on Tax Revenue Assurance in Nigeria

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.909	4.568		1.731	.100
	IA	.865	.049	.973	17.789	.000

a. Dependent Variable: TRA
Source: Researcher's SPSS computation (2026)

From Table 4.8, the positive Unstandardized Coefficients B = 0.865 means that a one-unit increase in the Invoice Automation score is associated with an estimated 0.865 unit increase in the Tax Revenue Assurance score, holding the constant term in the model. The Standardized Coefficients β = 0.973 confirms an extreme strong positive relationship between the two variables. The t-statistics of 17.789 is large and the associated probability value is below 0.001. Thus, Invoice Automation is a statistically significant predictor of Tax Revenue Assurance.

4.3 Test of Hypotheses

Hypothesis One:

i. System Integration has no significant effect on Taxpayer Compliance in Nigeria.
ii. System Integration has a significant effect on Taxpayer Compliance in Nigeria

Table 4.9 ANOVA of Hypothesis One

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36058.452	1	36058.452	76.048	.000[b]
	Residual	8534.748	18	474.153		
	Total	44593.200	19			

a. Dependent Variable: TC
b. Predictors: (Constant), SI
Source: Researcher's SPSS computation (2026)

From Table 4.9 the decision rule is that the null hypothesis will be rejected where the probability value (*P*-value) is less than 0.05, while the null hypothesis will not be rejected where the *P*-value is greater than 0.05. Since $P < 0.001 < 0.05$, Decision: Reject the null hypothesis and accept the alternate hypothesis that System Integration has a statistically significant positive effect on Taxpayer Compliance in Nigeria

Hypothesis Two

i. Invoice Automation has no significant effect on Tax Revenue Assurance in Nigeria.
ii. Invoice Automation has a significant effect on Tax Revenue Assurance in Nigeria.

Table 4.10 ANOVA of Hypothesis Two

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80286.438	1	80286.438	316.451	.000[b]
	Residual	4566.762	18	253.709		
	Total	84853.200	19			

a. Dependent Variable: TRA
b. Predictors: (Constant), IA
Source: Researcher's SPSS computation (2026)

From Table 4.10 the decision rule is that the null hypothesis will be rejected where the probability value (*P*-value) is less than 0.05, while the null hypothesis will not be rejected where the *P*-value is greater than 0.05. Since $P < 0.001 < 0.05$, Decision: Reject the null hypothesis and accept the alternate hypothesis that Invoice Automation has a statistically significant positive effect on Tax Revenue Assurance in Nigeria.

4.4 Results and Discussions

4.4.1 System Integration and Taxpayer Compliance in Nigeria

The study examined the effect of System Integration on Taxpayer Compliance within the context of Nigeria's national e-invoicing Regime. The regression analysis revealed a very strong positive relationship between System Integration and Taxpayer Compliance. The ANOVA result further established that the regression model was statistically significant, $F(1,18) = 76.048$, $p < 0.001$. Consequently, the null hypothesis that System Integration has no significant effect on Taxpayer Compliance was rejected.

The findings suggests that effective integration of the National E-invoicing System with taxpayers' existing accounting financial and business information systems may facilitate greater compliance with tax obligations. When invoicing processes are integrated with accounting and transactions-recording systems, the possibility of inconsistencies between business transactions, invoices and tax reports can potentially be reduced. Integration may also reduce dependence on manual processes and facilitate more consistent recording and transmission of taxable transactions. The finding is consistent with the broader international evidence on digitalization and tax administration. Evidence from Bellon, et al (2022) revealed that e-invoicing enhance compliance by lowering compliance costs and strengthening deterrence. The finding is also consistent with Kotsogiannis, et al (2025) who revealed that e-invoicing adoption in Rwanda increased firms' net VAT payments and has improved the efficiency of VAT audit (Bellon, et al , 2022) and (Kotsogiannis, et al, 2025).

4.4.2 Invoice Automation and Tax Revenue Assurance in Nigeria

The study examined the effect of invoice Automation on tax Revenue Assurance within the context of Nigeria's national E-invoicing Regime. The regression results revealed an extremely strong positive relationship between Invoice Automation and tax revenue Assurance. The ANOVA result further established that the regression model was statistically significant, $F(1,18) = 316.451$, $p < 0.001$. Consequently, the null hypothesis that Invoice Automation has no significant effect on Tax Revenue Assurance was rejected. The findings suggest that Automation of invoice generation and processing can substantially strengthen the assurance of tax revenues. By reducing dependence on manual invoice preparation and recording, invoice automation can improve the completeness, consistency and accuracy of transaction information available for tax reporting. Automated invoicing also has the potential to reduce errors associated with manual data entry and minimize discrepancies between sales transactions, invoices and reported taxable amounts. Automated invoices create a more structured and traceable information environment. The finding is consistent with Bellon, et al (2022), who empirically established that the introduction of VAT e-invoicing in Peru significantly increased reported taxable sales, purchases and VAT liabilities. Their evidence suggests that electronic invoicing enhances tax administration by improving the monitoring and visibility of taxable transactions and strengthening deterrence against non-compliance. The finding is also consistent with Kotsogiannis, et al (2025) who revealed that e-invoicing adoption in Rwanda increased firms' net VAT payments and has improved the efficiency of VAT audit (Bellon et al., 2022) and (Kotsogiannis, et al, 2025).

5.0 Summary of Findings, Conclusions and Recommendations

5.1. Conclusions and Recommendations

The study examined Digital Tax Administration in Nigeria with particular emphasis on the new National E-invoicing and Electronic Fiscal system (EFS) regime, focusing on the extent to which system integration and invoice automation contribute to improved tax administration outcomes. Based on the empirical findings, the study concludes that digitalization of invoice represents a potentially significant mechanism for strengthening tax administration, particularly through improved taxpayer compliance and tax revenue assurance. The study further concludes that System Integration has a statistically significant positive effect on Taxpayer Compliance in Nigeria. The study also concludes that Invoice Automation has a statistically significant positive effect on Tax Revenue Assurance in Nigeria.

5.2 Recommendations

The study recommends the following that:

The Nigeria Revenue Service (NRS) should develop analytical tools capable of improving risk-based tax audits, identifying both unusual transaction patterns and discrepancies between invoices and potential under-reporting from the large volume of electronic invoice data. The NRS should continue to promote the automation of invoice generation, processing, validation and transmission as a central component of digital tax administration.

5.3 Implications of the Findings

The federal government should recognize that successful digital tax administration requires continuous investment in ICT infrastructure; System Capacity; Interoperability, Cyber Security; Technical Support and Taxpayer Education.

Statements and Declarations

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by [Dr. Ifeanyichukwu Arthur Onyiah], [Dr. Abani, Chinenye Angela] and [Ezeani, Chukwudi Chukwugaeme] and [Dr. Joy Dakoru Uche] and [Dr. Henry Idoko Uche]. The first draft of the manuscript was written by [Dr. Ifeanyichukwu Arthur Onyiah] and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Competing Interests

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