ARTIFICIAL INTELLIGENCE AND TAX COMPLIANCE IN NIGERIA

BY

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FACULTY OF MANAGEMENT SCIENCES

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BEING A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF ACCOUNTING, FACULTY OF MANAGEMENT SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.SC) DEGREE IN ACCOUNTING.

NOVEMBER, 2025

DECLARATION

I hereby declare that:

This project work is based on a study undertaken by me in the Department of Accounting, University of Benin, under the supervision of Mrs.E. E Ogbonmwan

This research work has not been previously submitted for the award of degree elsewhere.

All ideas and views are products of my personal research and where the views of others have been used and expressed, they were duly acknowledged.

_____. _____

OTOIKHILA OBOH ENDURANCE DATE

(DECLARANT)

CERTIFICATION

We certify that this research work was carried out by **OTOIKHILA OBOH ENDURANCE** matriculation number **MGS2104664** in the Department of Accounting, Faculty of Management Sciences, University of Benin, Benin City, Nigeria. It is adequate in scope and quality in partial fulfillment of the requirements for the award of Bachelor of Science (BSc.) degree in Accounting.

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DEDICATION

I dedicate this research project to **Almighty God**, whose graces, wisdom, and strength made this work possible.

Also to my lovely mother, Mrs. Gladys Obotse, My beloved siblings MaryJane, Joan, Daniel Otoikhila, My Spiritual mentor Msgr.Enow, and to all my dear friends for their guidance, kindness, and unwavering support toward this journey.

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May God Almighty bless and reward you all abundantly

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ABSTRACT

This study examines the role of Artificial Intelligence (AI) in improving tax compliance in Nigeria. It aims to assess the current state of tax compliance, identify challenges in tax administration, explore AI applications in tax processes, evaluate their impact, and recommend strategies for effective integration. Primary data were collected from 100 respondents, including taxpayers and tax officials, using a structured questionnaire. The data were analyzed through descriptive statistics and hypothesis testing. The results indicate that tax compliance in Nigeria is moderate, hindered by challenges such as corruption, poor taxpayer education, and inadequate technology. The study finds that AI tools, including electronic filing (e-filing), automated reminders, data matching systems, and chatbots, can significantly enhance tax operations by reducing errors, increasing efficiency, and improving transparency. These findings suggest that AI adoption has a positive effect on voluntary tax compliance. The study concludes that effective implementation of AI in Nigeria's tax system can promote transparency, reduce evasion, and strengthen revenue collection. It recommends investing in AI infrastructure, staff training, public awareness campaigns, and establishing clear regulatory frameworks to ensure successful adoption.

CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Nigeria, Africa's largest economy with a GDP of approximately $487.27 billion (Trading Economics,2024), faces significant fiscal challenges that threaten its economic sustainability and development objectives. Central to these challenges is the country's persistently low tax-to-GDP ratio, which has hovered between 6-8% over the past decade, substantially below the 15% threshold recommended by international financial institutions for sustainable development financing (IMF, 2023; World Bank, 2024). This tax performance gap represents not merely a statistical concern but a fundamental constraint on Nigeria's capacity to finance essential public services, infrastructure development, and social protection programs.

The Nigerian tax system operates within a complex federal structure comprising taxes administered at federal, state, and local government levels. The Federal Inland Revenue Service (FIRS), State Internal Revenue Services (SIRS), and Local Government Revenue Committees (LGRC), collectively manage a diverse tax portfolio that includes corporate income tax, personal income tax, value added tax, petroleum profits tax, capital gains tax, and various levies. Despite the comprehensive tax framework, revenue mobilization remains suboptimal due to multiple challenges, including a large informal economy estimated at 65% of GDP, inadequate taxpayer data, limited enforcement capacity,

complex compliance procedures, and widespread tax avoidance and evasion (Oyedele, 2023; FIRS Annual Report, 2023).

Recent years have witnessed concerted efforts by Nigerian authorities to enhance tax administration through various reforms, including the introduction of the Tax Identification Number (TIN) system, e-filing platforms, bank verification integration, and the Voluntary Assets and Income Declaration Scheme (VAIDS). While these initiatives have yielded incremental improvements, they have not catalysed the transformative shift in compliance behaviour necessary to substantially expand the tax base or significantly improve revenue collection (National Bureau of Statistics, 2024).

The global digital revolution has fundamentally transformed tax administration across jurisdictions, with artificial intelligence (AI) emerging as a particularly promising frontier. Tax authorities in countries like Australia, Singapore, the United Kingdom, India, and Brazil have demonstrated the significant potential of AI technologies to enhance compliance through intelligent risk assessment, process automation, taxpayer service improvement, and enhanced decision support. These implementations have reported substantial improvements in compliance rates, operational efficiency, and taxpayer satisfaction while reducing administrative costs and enforcement gaps (OECD, 2023; PWC Global Tax Technology Survey, 2024)

Artificial Intelligence, (popularly known as AI) understood broadly as the development of computer systems capable of performing tasks that typically require human

intelligence, encompasses a range of technologies including machine learning, natural language processing, computer vision, and intelligent automation.

In Nigeria, the use of Artificial Intelligence in public administration is still in its infancy, especially with tax sectors. However, growing interest in digital innovation provides a unique opportunity to investigate how Artificial Intelligence can be applied to improve tax compliance.

This study aims to examine the role of artificial intelligence in strengthening tax administration and boosting revenue generation in Nigeria.

1.2 Statement of the problem

The Nigerian tax system faces multifaceted challenges that collectively result in substantial revenue leakages, administrative inefficiencies, and compliance gaps. These problems manifest in several critical dimensions:

Nigeria's tax base remains narrow despite the country's large population and diverse economic activities. The Federal Inland Revenue Service (FIRS) reports that only approximately 41 million out of an estimated 99 million economically active Nigerians are registered in the tax system, representing a taxpayer registration rate of about 41% (FIRS, 2023). This limited coverage significantly constrains revenue generation potential and creates inequities in the distribution of tax obligations.

Even among registered taxpayers, compliance levels remain suboptimal. Available data indicates that filing compliance rates average 60% for corporate taxpayers and below 40% for individual taxpayers, while payment compliance demonstrates similar patterns of underperformance (National Tax Policy Review Committee, 2023). These figures suggest substantial revenue leakages even within the formally

The limited use of data analytics and risk-based approaches in complian management results in poor allocation of scarce enforcement resources. Audit selection often relies heavily on manual processes or rudimentary risk indicators rather than sophisticated analytical approaches, reducing the effectiveness of compliance interventions and creating opportunities for evasion (PwC Nigeria Tax Survey, 2023).

Existing technological solutions in Nigerian tax administration remain fragmented, with limited integration between systems and databases creating information silos that impede effective compliance monitoring. Despite digitization efforts, many processes retain significant manual components that introduce inefficiencies, errors, and corruption vulnerabilities (Nigeria Tax Justice Network, 2023).

These interlocking challenges occur within a broader context of fiscal stress, with Nigeria's taxto-GDP ratio of 6-8% significantly below both the 15% minimum threshold recommended for sustainable development financing and the sub-Saharan African average of approximately 16% (OECD Revenue Statistics, 2023). This underperformance

constrains government's ability to fund critical development priorities and increases reliance on borrowing, creating additional fiscal sustainability concerns.

While conventional approaches to addressing these challenges have yielded incremental improvements, they have not generated the transformative changes necessary to substantially enhance compliance levels or significantly expand the tax base. This limited progress suggests the need for innovative approaches that leverage emerging technologies to reimagine tax administration processes, capabilities, and service delivery models.

Artificial intelligence technologies offer potential pathways to address these challenges through enhanced data analysis, automated compliance processes, intelligent risk assessment, and improved taxpayer services. However, the specific applicability, implementation requirements, and potential impacts of AI solutions within Nigeria's unique socioeconomic and institutional context remain insufficiently explored in existing literature. This research addresses this knowledge gap by systematically examining the potential contribution of artificial intelligence to enhancing tax compliance in Nigeria while developing an implementation framework that addresses the specific contextual realities of the Nigerian tax environment.

1.3 Research objectives

The main objective of this study is to assess the role of artificial intelligence in enhancing tax compliance in Nigeria.

The specific objectives are to:

1. Examine the current state of tax compliance in Nigeria.
2. Identify the challenges facing tax administration in the country.
3. Explore the potential applications of AI in tax processes.
4. Evaluate the impact of AI-driven systems on improving tax compliance.
5. Recommend strategies for effective integration of AI in Nigeria's tax system.

1.4 Research Questions

1. The study seeks to answer the following research questions:
2. What is the current level of tax compliance in Nigeria?
3. What are the main challenges hindering effective tax administration?
4. In what ways can Artificial Intelligence be applied to tax administration?
5. What are the potential benefits of using AI to improve tax compliance?

How can AI be successfully integrated into Nigeria's tax system?

1.5 Research Hypotheses

Based on the research objectives and questions, this study will test the following Null hypotheses:

Ho1: The implementation of artificial intelligence technologies in Nigeria's tax administration will not significantly increase the tax compliance rate.

H2: The implementation of artificial intelligence technologies will not significantly reduce the cost of tax administration in Nigeria..

Ho3: Artificial intelligence-driven risk assessment models are not more effective than traditional methods in identifying tax non-compliance in Nigeria.

Ho4: The potential benefits of artificial intelligence implementation in Nigerian tax administration do not outweigh the costs and implementation challenges.

Ho5: Stakeholder perception and readiness do not significantly influence the successful adoption of artificial intelligence in Nigeria's tax system.

1.6 Significance of the Study

This research offers significant contributions across multiple dimensions:

1.6.1 Theoretical Significance

The study contributes to the evolving theoretical discourse on technology adoption in tax administration by developing an integrated framework that synthesizes technology acceptance theories, institutional perspectives, resource based views, and compliance theories within the unique context of a developing economy. By examining the intersection of technological innovation, institutional dynamics, and compliance behaviour this research extends existing theoretical frameworks to better account for the complex socio technical systems that characterize tax administration environments.

Furthermore, the study contributes to the nascent literature on artificial intelligence applications in public sector contexts, particularly in developing economies where such research remains limited. By systematically analysing the applicability, implementation requirements, and potential impacts of various AI technologies within Nigeria's specific context, this research helps address the geographical and contextual gaps in existing technology adoption literature that has historically been dominated by studies from developed economies.

1.6.2 Practical Significance

For tax authorities and policy makers, this research provides evidence based insights to inform strategic planning and implementation of AI technologies in Nigerian tax administration. The phased implementation framework developed through this study offers a practical roadmap that addresses the specific contextual realities, constraints, and opportunities within Nigeria's tax ecosystem, potentially enhancing the effectiveness of technological investments while minimizing implementation risks.

For technology providers and consultants operating in the tax technology space, this research illuminates the unique requirements, challenges, and opportunities within the Nigerian market, potentially informing product development, service offerings, and implementation approaches. By identifying critical success factors and potential barriers,

this study can contribute to more contextually appropriate technology solutions that address Nigeria's specific needs.

For taxpayers and business communities, this research helps articulate the potential implications of AI enhanced tax administration, including changes in compliance processes, service delivery models, and enforcement approaches. This understanding can support more effective compliance planning and constructive engagement with tax authorities during the technology transition period.

For academic institutions and capacity development organizations, this research identifies skill gaps and training needs associated with AI adoption in tax administration, potentially informing curriculum development, professional certification programs, and workforce development initiatives.

1.6.3 Policy Significance

The study provides policy makers with comprehensive analysis to inform technology-enabled tax administration reforms, regulatory frameworks for AI governance, and institutional development strategies. By identifying policy enablers and barriers to effective AI implementation, this research supports evidence-based policy formulation that balances technological innovation with contextual realities and developmental priorities.

1.7 Scope of the Study

This research examines the potential application of artificial intelligence technologies within Nigeria's tax administration system, with particular focus on enhancing compliance across federal, state, and local tax categories. The study encompasses multiple dimensions of the AI implementation journey:

1.7.1 Technological Scope

The research examines a range of artificial intelligence technologies and applications relevant to tax compliance, including:

Machine learning and predictive analytics for risk assessment and audit selection

Natural language processing for document analysis and taxpayer communication

Computer vision for document processing and verification

The study does not extend to broader information technology infrastructure beyond what specifically enables AI implementation, nor does it address non AI digital technologies except where they directly interface with or sup**port AI applications.**

1.7.2 Geographical Scope

While focusing primarily on Nigeria's national context, the research incorporates comparative analysis of AI implementation experiences in selected jurisdictions with comparable economic profiles or instructive implementation histories. Within Nigeria, the study examines both federal and state level tax administration, with particular

attention to six representative states selected to reflect Nigeria's geopolitical diversity and varying levels of economic development and technological readiness.

1.7.3 Institutional Scope

The research encompasses key institutional stakeholders within Nigeria's tax ecosystem, including:

- Federal Inland Revenue Service (FIRS)
- State Internal Revenue Services (SIRS)
- Joint Tax Board (JTB)
- Ministry of Finance, Budget and National Planning
- Ministry of Communications and Digital Economy
- National Information Technology Development Agency (NITDA)
- Professional tax associations and consultancies

Taxpayer associations and representative bodies - Technology providers and system integrators.

1.8 Definition of Terms

For clarity and consistency, this study employs the following operational definitions of key terms:

Artificial Intelligence (AI): Computer systems capable of performing tasks that normally require human intelligence, including learning from experience, recognizing patterns,

understanding natural language, and making decisions. In this study, AI encompasses machine learning, natural language processing, computer vision, and intelligent process automation technologies applied to tax administration functions.

Tax Compliance: The degree to which taxpayers meet their tax obligations, including registration in the tax system, timely filing of required returns, accurate reporting of tax liabilities, and payment of taxes due. This study considers both formal compliance (adherence to procedural requirements) and substantive compliance (correct determination of tax liability).

Tax Administration: The processes, organizations, and systems responsible for implementing tax policies, including taxpayer registration, return processing, payment management, audit and verification, dispute resolution, and taxpayer service functions.

Implementation Framework: A structured approach for planning, executing, and evaluating the integration of new technologies within an existing organizational context,addressing technical, operational, human resource, and change management dimensions.

Machine Learning: A subset of artificial intelligence focused on developing algorithms and statistical models that enable computer systems to improve their performance on a specific task through experience without being explicitly programmed.

Natural Language Processing (NLP): AI technologies that enable computers to understand, interpret, and generate human language in useful ways, including text analysis, sentiment analysis, language translation, and conversational interfaces.

Predictive Analytics: The use of data, statistical algorithms, and machine learning techniques to identify the likelihood of future outcomes based on historical data, particularly applied to identifying compliance risks and patterns.

Process Automation: The use of technology to execute recurring tasks or processes where manual effort can be replaced or augmented by automated systems, including robotic process automation (RPA) for routine administrative tasks.

Risk-Based Compliance Management: A strategic approach to tax administration that allocates limited enforcement resources based on assessed levels of compliance risk, focusing interventions on taxpayers and transactions with higher probability of non-compliance.

Institutional Capacity: The ability of organizations to perform functions, solve problems, set and achieve objectives through their collective resources, knowledge, systems, and processes.

Technology Readiness: The degree to which an organization's infrastructure, skills, processes, and culture support the effective adoption of new technologies.

Stakeholder Readiness: The willingness and ability of key stakeholders (tax authorities, taxpayers, technology providers) to embrace and effectively engage with technological change in tax administration.

Digital Transformation: The integration of digital technology into all areas of an organization, fundamentally changing how it operates and delivers value, accompanied by cultural, organizational, and operational changes.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Taxation remains the most reliable and sustainable means of financing public expenidture, especially in developing economies where over-reliance on volatile resources like oil can jeopardize fiscal stability. Nigeria, Africa's largest economy by GDP, suffers from a persistently low tax-to-GDP ratio of approximately 6– 8%, over the past decade, substantially below the 15% threshold recommended by international financial institution for sustainable development financing (IMF, 2023; world bank,2024). The persistent shortfall in revenue generation hampers the Nigeria government's capacity to adequately invest in essential service such as infrastructure, healthcare, education, and social programs. Multiple factors have been recognized as underlying causes of poor tax compliance in the country, including ineffective tax administration, lack of robust enforcement, systemic corruption, insufficient taxpayer education, and the predominance of an informal sector that remains largely untaxed (IMF,2023; FIRS,2022; Premium times,2024).Recent reforms by the Federal Inland Revenue Service (FIRS) and State Boards of Internal Revenue (SBIRs) have aimed to digitize tax processes and expand the tax base. Amid these efforts, AI offers a transformative tool through predictive analytics, real-time fraud detection, and automation of tax administration tasks with a vast informal sector, institutional inefficiencies, and low tax morale, Nigeria's tax administration is

riddled with challenges. In response, policymakers and scholars have turned to emerging technologies, particularly Artificial Intelligence (AI), to explore avenues for reform.

This chapter provides a comprehensive review of literature related to artificial intelligence, tax administration, and tax compliance, particularly within the Nigerian context. It explores how AI technologies can be leveraged to improve tax compliance by addressing institutional and socio-economic challenges. The chapter is structured into four main components: The conceptual framework, which defines and links important terms; The theoretical framework, which explains models related to taxpayer behavior and technology adoption; The empirical review, which analyzes global and Nigerian studies on AI integration in tax systems; and The summary of literature, which identifies existing research gaps and underscores the significance of the present study.

Overall, this chapter lays the groundwork for understanding how AI can be effectively used to enhance tax compliance in Nigeria. It also highlights that the success of AI-driven tax reforms depends heavily on factors such as institutional capacity, data availability, technological infrastructure, and public trust.

2.2 Conceptual Framework

The conceptual framework make links between tax administration, tax compliance and artificial intelligence (AI) in the context of Nigeria's developing digital economy. The methodology is crucial for determining how AI might be used as a tactical instrument to

close behavioural gaps and inefficiencies in the tax system and raise tax compliance rates. The following important ideas are carefully examined in this section; Artificial intelligence, tax compliance, tax administration, digital transformation, and the relationship between artificial intelligence and tax compliance in Nigeria.

2.2.1 Artificial Intelligence (AI)

Artificial Intelligence refers to the simulation of human intelligence processes by machines, particularly computer systems, which are capable of performing tasks such as reasoning, learning, problem solving, perception, and language understanding (IBM ,2023).In simpler terms ,AI involves creating intelligent systems capable of thinking, acting, and adapting based on the data they receive ,often faster and with greater accuracy than human. These system are designed to replicate and automate intellectual tasks typically performed by humans, thus enabling smarter decision making and efficient processes. Artificial intelligence has become a transformative force in taxation, providing governments and tax authorities with advanced tools for compliance monitoring, fraud detection, and revenue collection(Brown,2021). Around the world, public institution have increasingly implemented artificial intelligence(AI) technologies to improve service delivery, enhance efficiency ,and minimise humane error. In the field of tax administration, AI application now include automating processes, detecting fraudulent activities, identifying non compliant taxpayers ,and strengthening revenue collection

systems. Recent findings by the Organisation for Economics Cooperation and Development (OCED,2024) indicate than over70% of tax administrations worldwide utilize AI to enhances efficiency and ensure compliance, with nearly three quarters employing it to optimize operations and revenue performance.The Major type of Artificial intelligence in tax administration can take several forms depending on its functions, scopes, and complexity .The main type relevant to tax compliance include:

1.Machine Learning: Machine Learning (ML): is a branch of Artificial Intelligence (AI) that focuses on the development of algorithms capable of learning patterns and making predictions or decisions without explicit programming. These algorithms improve their performance by processing large datasets, identifying trends, and adapting to new inputs over time (Jordan & Mitchell, 2020; Alpaydin, 2021). Machine Learning techniques include supervised learning, unsupervised learning, and reinforcement learning, each suited to different problem domains. Machine Learning systems operate by analyzing historical data, extracting relevant features, and applying predictive models to generate insights or automate decision-making. For example, supervised Machine Learning models are trained on labelled datasets to predict outcomes such as tax compliance risks, while unsupervised models detect irregularities in financial records that may indicate fraud.

In the Nigerian tax system, the Federal Inland Revenue Service (FIRS) can integrate Machine Learning by aggregating and analyzing data from diverse sources such as banks,

mobile money platforms, customs agencies, and corporate registries. By comparing these datasets with taxpayers' self-reported information, Machine Learning algorithms can identify discrepancies indicative of underreporting or non-compliance. For instance, if a registered company declares low annual profits but its bank transaction data reflects multi-million naira inflows, the Machine Learning system can flag the irregularity for further investigation. Such an approach can:

- Enhance the effectiveness of tax audits.
- Reduce human bias in enforcement actions.
- Increase overall rall revenue collection efficiency.

By enabling data driven insights, Machine Learning can help Nigeria transition from reactive tax enforcement to proactive compliance monitoring, aligning with global best practices (OECD, 2022; World Bank, 2023).

2.Natural Language Processing (NLP):Natural Language Processing (NLP) is a branch of Artificial Intelligence (AI) that enables computers to understand, interpret, and respond to human language in a way that is both meaningful and useful. It draws on method from linguistics, computer science, and machine learning to process large amount of text or speech data (Dwivedi et al.,2021).

In the field of tax compliance, Natural language processing can help tax authorities quickly extract important details from documents such as tax returns, legal papers, and letters from taxpayers.

NLP allows machines to perform tasks such as translating text from one language to another, summarising documents, answering questions, or even detecting emotions in communication. It is the technology behind tools like chatbots, speech recognition systems, and automated translation services.

In the Nigeria tax system ,the Federal Inland Revenue Service (FIRS) can use Natural Language Processing (NLP) to make tax communication more straightforward by replacing complicated tax and legal term with clear, easy to understand language .Natural language processing tools can also process large amount of unstructured information such as emails, social media posts, and new articles to assess public perceptions of taxation and detect possible fraudulent activities .By adopting the approach, FIRS can improve the speed and accuracy of its operations, strengthen fraud detection, and foster greater public trust in the tax system(OCED,2022; World Bank,2023) .

3.Robotic Process Automation (RPA):Robotic Process Automation (RPA) is a type of technology that uses software “robots” or “bots” to perform repetitive, rule-based tasks on a compuer system. These bots are designed to imitate human actions, such as clicking through that are normally carried out by humans (van der Aalst et al., 2018; Aguirre & Rodriguez, 2022). Unlike physical robots, RPA bots work within digital systems, interacting with applications and databases just like a human would clicking buttons, entering data, or extracting information.

RPA is particularly effective for tasks that require accuracy, speed, and consistency. It can operate 24/7 without fatigue, making it ideal for high volume data entry, invoice processing, report generation, and compliance monitoring.

In the Nigerian tax system, the Federal Inland Revenue Service (FIRS) faces problems such as incomplete records, delays, and and a large informal economy. Robotic Process Automation can help by automating routine tasks life checking tax returns, verifying taxpayer IDs, and comparing income data with other records. This makes the process faster, more accurate, and less stressful for tax payers. It can also help improve services by sending reminders, giving filing updates, and answering common questions automatically. Instead of replacing staff, RPA supports then by handling repetitive work, allowing officials to focus on more complex duties like audits and fraud detection. Overall, it can make Nigeria's tax system more efficient an d transparent.

2.2. 2 Tax Compliance

Tax compliance is one of the most important concepts in taxation and a major determinant of how effective a country's tax system is. It generally describes as the extent to which individuals and businesses obey tax laws and carry out the responsibilities placed upon them by the relevant authorities. These responsibilities usually include registering with the tax authority, submitting tax returns correctly and on

time, providing honest declarations of income, and paying the exact tax due without delay.

In simple terms, tax compliance reflects both the ability and willingness of taxpayers to meet their tax obligations without engaging in unlawful practices such as evasion or aggressive avoidance. According to Kirchler (2007) and Slemrod (2019), compliance is influenced not only by strict enforcement but also by factors such as trust in government, perceptions of fairness, and the efficiency of the tax administration. The OECD (2022) also stresses that tax compliance is a critical part of revenue collection since it ensures that registration, filing, reporting, and payment obligations are carried out effectively.

Researchers have also emphasized that compliance is multidimensional, meaning it involves several interconnected aspects of taxpayer behavior rather than just one action. Kirchler (2007) highlights three important dimensions. The first is registration compliance, which requires taxpayers to officially register with the relevant tax authority so that they are properly recognized within the tax system. The second is filing compliance which relates to submitting tax returns within the deadlines set by law. The third is payment compliance, which focuses on making the correct tax payment at the right time. More recent studies have also added a fourth dimension, known as reporting compliance, which deals with the honesty and accuracy of the information taxpayers declare to the authorities (Palil & Mustapha, 2011; OECD, 2022). This last aspect is

particularly important, as the system becomes ineffective if taxpayers provide false or misleading information, even if they register, file, and pay on time.

Bringing all these dimensions together gives a complete picture of what it means to be fully tax compliant. For example, it is not enough for a taxpayer to simply register if they fail to submit their returns within the required period. Similarly, filing returns without making truthful declarations or failing to pay the correct tax due also amounts to non compliance. True compliance therefore requires taxpayers to meet all obligations registration, filing, reporting, and payment accurately, promptly, and honestly. This broader view helps ensure that tax systems work efficiently and that governments can generate the revenue needed to fund public services, drive economic development, and provide essential infrastructure (Alm, 2019; OECD, 2022).

Scholars agree that taxpayers do not all comply with tax obligations in the same way. Instead, compliance can be grouped into different types based on the motivations behind taxpayers' actions and the extent to which they meet their responsibilities. Understanding these types is important for governments, because it helps tax authorities design appropriate strategies to improve revenue collection. The major types include:

a. Voluntary Compliance

Voluntary compliance takes place when taxpayers willingly meet their tax obligations without being compelled by threats, fines, or prosecution. Rather than relying mainly on enforcement, government

authorities encourage compliance by creating a tax system that is easy to use, transparent, and trustworthy, making people more likely to cooperate on their own. To make this possible, tax administrators often work on removing the challenges that discourage compliance. One effective strategy is the use of digital platforms for registration, filing, and payment, which help to reduce delays, paperwork, and cases of corruption. When the system is straightforward and taxpayers can confirm that their contributions are properly recorded, they are generally more willing to comply (OECD, 2022). The central idea is that people are more motivated to pay taxes when they see the system as fair, efficient, and beneficial to society. If they trust that their money is managed responsibly, they are less likely to evade their obligations.

In Nigeria, a strong example of voluntary compliance is the Tax Pro Max platform, introduced by the Federal Inland Revenue Service (FIRS) in 2021. The platform was designed to improve tax administration by providing taxpayers with a single online portal where they can register, file returns, make payments, generate receipts, and track their compliance history. This system reduces the stress of physical visits to tax offices and eliminates issues like long queues and excessive paperwork, which had discouraged many Nigerians from paying taxes in the past (FIRS, 2021). By simplifying tax processes, Tax Pro Max fosters a culture of voluntary compliance. Taxpayers are encouraged to participate because the platform is efficient, transparent, and user-friendly. For instance, it issues instant payment confirmations and electronic receipts, which assure taxpayers

that their contributions are accurately documented. This reduces the chance of corrupt practices since transactions are traceable and less dependent on face-to-face contact with tax officials (OECD, 2022). The system has also strengthened trust in the tax process. When taxpayers see that their payments are fairly handled and records are updated automatically, they are more inclined to comply. Businesses, in particular, benefit by gaining quicker access to tax clearance certificates, which are important for contracts and other opportunities. This provides both individuals and organizations with incentives to meet their tax responsibilities voluntarily, without waiting for enforcement actions. Overall, the Tax Pro-Max initiative demonstrates that voluntary compliance is best achieved when tax authorities create a simple, transparent, and credible system. When taxpayers believe the process is fair and efficient, they tend to pay their taxes willingly rather than out of fear of punishment.

b. Enforced Compliance

Enforced compliance occurs when taxpayers meet their tax obligations mainly because they are afraid of penalties, audits, or other punishment, rather than out of personal willingness. In other words, individuals and businesses obey tax laws not because they genuinely want to, but because they wish to avoid fines, asset seizures, or even imprisonment that may follow non-compliance(slemrod,2019). A practical example in Nigeria is the Voluntary Assets and Income Declaration Scheme (VAIDS) introduced by the federal government in July 2017 and implemented by the federal inland revenue

service (FIRS). The main aim of VAIDS was to give taxpayers an opportunity to voluntarily declare previously undisclosed income and assets, pay the correct taxes due, and avoid prosecution. However, many taxpayers who took part in VAIDS did so mainly because of fear of penalties and legal action, rather than genuine willingness to comply. The government made it clear that anyone who failed to participate would face strict consequences, such as fines, accumulated interest on unpaid taxes, possible prosecution, and even confiscation of assets (FIRS, 2018).

Through this pressure, VAIDS helped the government to recover billions of naira in unpaid taxes and also expanded the tax net by bringing new taxpayers into the system. Enforcement agencies like the Economic and Financial Crimes Commission (EFCC) and the Nigeria Immigration Service were also empowered to track and prosecute defaulters after the deadline expired FIRS, 2018; OECD, 2022).

This clearly demonstrates the idea of enforced compliance: taxpayers are more likely to pay taxes when there are strong monitoring systems and the real possibility of punishment. But, once the pressure is lifted, compliance levels may drop again.

c.Administrative (or Technical) Compliance

Administrative or technical compliance refers to the extent to which taxpayers follow the formal and procedural requirements of tax law. This includes actions such as filling out tax forms correctly, attaching supporting documents, keeping proper records, and submitting returns within the specified deadlines. Even if the actual tax liability is small,

a taxpayer who completes all these formal steps is still considered compliant from an administrative perspective (Kirchler, 2007).

In Nigeria, the introduction of digital platforms has made administrative compliance easier and more efficient. For instance, the Tax Pro-Max system launched by the Federal Inland Revenue Service (FIRS) enables taxpayers to register, file returns, upload withholding tax credit notes, and make payments online. This reduces the chances of errors and delays that often occur with manual filing. Companies and individuals can now Companies and individuals can now conveniently comply with technical procedures without visiting tax offices physically, which helps improve overall efficiency in the tax system.

However, it is important to note that administrative compliance alone does not guarantee fairness in taxation. A taxpayer may file returns correctly and on time but still underreport income, which would show failure in substantive compliance. This distinction explains why tax authorities usually monitor both the technical and substantive sides of compliance to ensure accuracy and fairness (Palil & Mustapha, 2011).

d. Substantive Compliance

Substantive compliance goes beyond following procedures and focuses on whether taxpayers actually pay the correct and fair amount of tax due. It is not enough for taxpayers to file their returns or meet deadlines; what matters is the accuracy and honesty of the financial information they provide. A taxpayer may demonstrate technical

compliance by filing returns on time, but if they underreport income, exaggerate expenses, or conceal taxable assets, then substantive compliance has not been achieved (Kirchler, 2007).

This type of compliance is especially important because it ensures equity and fairness in the tax system. If some taxpayers deliberately pay less than what they owe, the burden of taxation becomes unfairly shifted to honest taxpayers, thereby weakening overall tax morale. Substantive compliance therefore plays a key role in building trust and ensuring that all taxpayers contribute their fair share (Palil & Mustapha, 2011).

In Nigeria, achieving substantive compliance has been a major challenge. A large proportion of taxpayers, especially within the informal sector, under-declare income and avoid proper record-keeping to reduce their tax liability. To address this, the Federal Inland Revenue Service (FIRS) has introduced several reforms, such as linking taxpayers' information with the Bank Verification Number (BVN), adopting data-matching systems, and collaborating with agencies like the Corporate Affairs Commission (CAC) and Nigeria Customs Service to cross-check financial activities. These measures help tax authorities verify whether taxpayers are paying the correct amount, not just filing paperwork.

However, like other forms of compliance, substantive compliance cannot be achieved by enforcement alone. Taxpayers are more likely to declare their true income when they believe the tax system is transparent, fair, and that government uses tax revenues

responsibly. This means combining enforcement strategies with measures that build voluntary compliance is the best way to strengthen substantive compliance in Nigeria (Alm, 2019).

2.2.3 Tax Administration

Tax Administration refers to the system of structures, institutions, and processes through which a government implements tax laws, collects revenue, enforces compliance, and manages taxpayer obligations. It includes all activities related to identifying and registering taxpayers, assessing and collecting taxes, providing taxpayer services, monitoring compliance, and enforcing penalties where necessary. Essentially, tax administration transforms tax policies and legislation into actual revenue and ensures that taxpayers meet their obligations efficiently and fairly (Bird & Zolt, 2018; OECD, 2022).

In the Nigerian context, tax administration is primarily carried out by the Federal Inland Revenue Service (FIRS) at the federal level and the State Internal Revenue Services (SIRS) at the state level. Its effectiveness is crucial because even well-designed tax policies cannot generate sufficient revenue if the administrative system is weak or inefficient. Strong tax administration promotes fairness, transparency, and accountability, thereby encouraging taxpayers to meet their obligations voluntarily while also enabling enforcement against defaulters. The core functions of tax administration include:

easy

.Taxpayer registration and identification

●.Tax return processing and verification

●.Audit and investigation

●.Collection enforcement

●.Taxpayer services and education

●.Dispute resolution

When these functions are weak, taxpayers lose confidence in the system, compliance rates fall, and overall revenue collection declines. This is why scholars argue that "a tax system is only as strong as its administration" (Bird & Zolt, 2018).Despite its importance, Nigeria's tax administration has long faced challenges such as:

●. Corruption and lack of accountability, where some revenues fail to reach government coffers.

●. Weak institutional capacity, as agencies often lack the manpower, training, or tools to perform effectively.

●. Outdated manual systems, which increase delays and errors.

●. Low taxpayer trust, as many Nigerians doubt whether their taxes are used for public benefit.

These challenges contribute to the persistent low voluntary compliance and the existence of a wide tax gap the difference between the total taxes expected and the actual amount collected (OECD, 2022).To address these issues, Nigeria has introduced reforms aimed at

modernizing its tax administration. A notable example is the TaxPro Max platform, launched in June 2021. The platform enables taxpayers to register, file returns, pay taxes, and generate receipts online (Punch, 2021). By automating these services, the system reduces physical interaction between taxpayers and officials, minimizes opportunities for corruption, cuts delays, and improves the accuracy of tax records. Reports suggest that TaxPro Max has already contributed to greater efficiency in tax administration and enhanced revenue collection, indicating that digital reforms can foster trust in the system and encourage compliance (The Cable, 2021).

Therefore, the effectiveness of tax administration in Nigeria is not only centre to e-filing generation but also to building taxpayer confidence and compliance. Persistent challenges such as corruption, weak institutional capacity, and low trust highlight the need for continuous innovation and reform. Modern initiatives like the TaxPro Max platform demonstrate that technology driven solutions can improve efficiency and reduce leakages. This connection underscores the importance of exploring how emerging tools, including Artificial Intelligence (AI), can further strengthen Nigeria's tax administration, close the tax gap, and enhance sustainable economic growth.

2.2.4 Relationship Between Artificial Intelligence and Tax Compliance in Nigeria

The introduction of Artificial Intelligence (AI) in Nigeria's tax administration offers significant potential to enhance both the efficiency and effectiveness of tax collection and

compliance. Historically, Nigerian tax authorities have faced numerous challenges, including widespread tax evasion, errors arising from manual processing, and limited ability to monitor taxpayer activities effectively (Central Bank of Nigeria [CBN], 2019; OECD, 2022). Implementing AI technologies including machine learning, predictive analytics, automated auditing, and intelligent data mining can help address these challenges by enabling rapid analysis of large datasets, identifying irregularities, and supporting more informed decision-making.

Within this framework, AI is treated as the independent variable that directly affects tax compliance behaviors, the dependent variable of this study. This relationship is complex: AI not only strengthens the ability of tax authorities to detect and prevent fraudulent practices but also enhances administrative efficiency, reduces human error, and ensures more accurate tax assessments and collections. Additionally, AI-driven monitoring and enforcement tools can influence taxpayer behavior by promoting voluntary compliance and discouraging evasion through the increased perceived risk of detection and penalties.The framework also acknowledges that AI's impact on tax compliance is moderated by other factors. Elements such as taxpayers' knowledge and education, the strength of government enforcement policies, and the level of public trust in the tax system can all affect the effectiveness of AI interventions. By examining these interactions, the conceptual framework provides a structured way to understand how AI can improve compliance rates and make tax administration in Nigeria more efficient.

a. Detection Of Tax Evasion

A key way in which Artificial Intelligence (AI) improves tax compliance is by enhancing the detection of tax evasion. In Nigeria, conventional auditing methods often depend on manual checks and random inspections, which are time consuming and prone to errors. These limitations allow many instances of underreporting or fraudulent declarations to go unnoticed (Central Bank of Nigeria [CBN], 2019). AI technologies, especially machine learning and advanced data analytics, can examine large volumes of financial and transactional data much more efficiently than traditional methods. By identifying unusual patterns, inconsistencies, or anomalies in taxpayers' records, AI systems can highlight activities that may indicate evasion or non-compliance (Folorunso & Nwankwo, 2024).For instance, AI can detect gaps between reported income and actual spending, identify irregularities in business transactions that suggest under invoicing or fictitious claims, and uncover hidden assets. Predictive algorithms also allow tax authorities to assess which taxpayers are most likely to be non-compliant, enabling a more targeted approach to audits and enforcement. This not only improves the accuracy of tax assessments but also optimizes resources by reducing unnecessary audits of compliant taxpayers.

Furthermore, the use of AI for fraud detection has a behavioral effect on taxpayers. Knowing that sophisticated AI tools are systematically analyzing their financial records

increases the perceived risk of being caught, which can deter evasion and encourage both voluntary and enforced compliance.

b. Efficiency in Tax Administration

Artificial Intelligence (AI) plays a vital role in improving the efficiency of tax administration by reducing delays, minimizing human errors, and streamlining routine processes. In Nigeria, the heavy reliance on manual tax administration has long created inefficiencies, revenue leakages, and greater risks of evasion. Manual processes are often slow, prone to errors, and create loopholes for corruption and weak enforcement (Okoye & Ezejiofor, 2014; Nwaiwu & MacGregor, 2020). The Federal Inland Revenue Service (FIRS, 2018) also acknowledged these challenges and stressed the need for modernization to strengthen compliance. Globally, evidence shows that countries that have embraced digital and AI-based tax systems record fewer inefficiencies and lower levels of fraud (OECD, 2022).AI tools such as automated tax return processing, predictive analytics, and intelligent auditing now provide faster and more accurate handling of tax operations.

AI-powered systems can manage repetitive tasks like data entry, tax computation, and cross-checking taxpayer information with minimal human involvement. This reduces processing errors and ensures that tax assessments are accurate. In addition, predictive analytics enable tax authorities to anticipate taxpayer behavior, forecast peak filing

periods, and allocate resources more effectively, thereby improving workflow efficiency (Nwaze, 2024).

Beyond operational gains, automation lowers administrative costs by reducing the need for excessive manpower, allowing staff to focus on strategic roles such as policy review, complex audits, and taxpayer education. This strengthens enforcement capacity without significantly increasing costs. Importantly, faster and more reliable processes also improve taxpayers' experience, making the system appear fairer and more transparent. When taxpayers see efficiency and fairness, voluntary compliance is more likely (Aladebumoye, 2025). The integration of AI represents a shift from slow, labor-intensive practices to a modern, data-driven approach. By enhancing both operations and strategy, AI helps Nigerian tax authorities boost revenue collection, cut inefficiencies, and promote higher compliance rates.

C .Behavioral Influence on Taxpayers

Artificial Intelligence (AI) not only improves the technical operations of tax authorities but also plays an important role in shaping how taxpayers behave. In Nigeria, voluntary compliance has often been low, largely due to limited trust in the tax system and weak enforcement mechanisms. The introduction of AI monitoring tools helps to address this gap by acting as a stronger deterrent against tax evasion (OECD, 2022; FIRS, 2018).

AI applications make it possible for tax administrators to analyze financial data in real-time, detect unusual patterns, and automatically notify taxpayers when discrepancies

occur. This level of transparency promotes accountability and encourages taxpayers to meet their obligations (Folorunso, 2024). With predictive technologies, authorities can also identify individuals or businesses most at risk of non-compliance and implement targeted strategies such as reminders, audits, or educational outreach. This focused approach discourages intentional evasion while avoiding unnecessary enforcement measures against compliant taxpayers.

Moreover, AI powered platforms can provide taxpayers with personalized support, including step by step filing guidance, payment reminders, and clarification of compliance requirements. These services reduce accidental mistakes and build confidence in the fairness of the tax system. International evidence shows that countries adopting AI based tax systems have recorded higher compliance rates because such systems lower uncertainty and strengthen public trust in enforcement (Islam et al., 2025).

2.3 Theoretical Framework

This study the relationship between Artificial Intelligence (AI) and tax compliance in Nigeria can be explained using relevant theoretical perspectives. This study is anchored by three theories :Deterrence Theory and the Technology Acceptance Model (TAM), which together offer complementary explanations of how taxpayers respond to enforcement measures and how user adopt new technologies.

2.3.1 Deterrence Theory

The Deterrence Theory is often applied in explaining why compliance behavior, The Theory was first developed in criminology and later extended to economics, the theory emphasizes that individuals are more likely to comply with the law when they believe that violations will be detected and punished (Becker, 1968). Applied to taxation, deterrence theory assumes that taxpayers evaluate the benefits of evading taxes against the potential costs in terms of penalties, fines, or imprisonment. When the perceived risk of detection and punishment outweighs the benefits of evasion, taxpayers are more likely to comply voluntarily.

The Theory is anchored on three major principles: certainty, severity, and swiftness of punishment. Certainty refers to the likelihood that an offender will be detected, severity concerns the magnitude of the penalty imposed, and swiftness relates to how quickly punishment follow the offence. Among this principles studies have shown that certainty of detection is often more effective in encouraging compliance than severity or swiftness (Webley, 2019). This implies that taxpayers are less concerned about how harsh the punishment is and more about whether they believe they will actually be caught.

In today's digital era , artificial intelligence offers a powerful means of reinforcing deterrence. Unlike manual audits, which are limited in scope, resource-intensive, and vulnerable to human bias. AI driven systems can process vast amounts of taxpayer data, identify hidden irregularities, and flag suspicious activities in real time. For instance,

machine learning algorithms can cross check declared income against evidence of wealth such as luxury spending, property ownership, or bank transactions. By improving the likelihood that evasion will be uncovered, This increases the perception of detection and strengthens voluntary compliance.

Experience from other countries highlight this relevance ,In South Africa, SARS uses AI and machine learning to identify tax noncompliance, close revenue gaps, and enhance enforcement, especially in sectors prone to evasion. This advanced, data-driven enforcement approach exemplifies how AI can strengthen deterrence mechanisms.

However, the application of deterrence theory in Nigeria faces several challenges; Institutional weaknesses, lack of transparency, and lack of public trust in government agencies. Many taxpayers believe that sanctions are not applied fairly or consistently, which weakens the effectiveness of penalties. Even so, the adoption of AI in tax administration presents an opportunity to rebuild credibility By minimising human discretion, reducing manipulation, and ensuring impartial enforcement, and fairness. However, its success will depend on the presence of strong legal frameworks, political will, and adequate investment in digital infrastructure.

2.3.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), is a widely recognized framework for understanding how individuals accept and adopt new

technologies. According to TAM, they are two main factors that influence the adoption of technology, which are; perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which a person believes that using a specific technology will improve their performance or productivity. Perceived ease of use relates to how effortless the individual expects the technology to be. Together, these factors determine whether users are likely to embrace and continue using a technological system.

In taxation, TAM is highly relevant because it is an AI-based solutions such as electronic filing platforms, digital payment systems, automated compliance checks, and fraud detection tools that require acceptance from both taxpayers and tax officials. Taxpayers who perceive these technologies as reliable, efficient, and user friendly are more likely to adopt them voluntarily, resulting in higher compliance rates. Conversely, if systems are perceived as complex, difficult to navigate, or unreliable, resistance may occur, limiting adoption and effectiveness.

In Nigeria, the relevance of TAM is particularly pronounced due to variations in digital literacy and access to technology among taxpayers. While some individuals and businesses readily adopt AI driven tax platforms because of familiarity with digital tools, others may struggle with online systems, resulting in uneven adoption and compliance (Folorunso & Nwankwo, 2024; Nwaze, 2024). Ensuring that AI platforms are intuitive, accessible, and reliable is therefore critical to promoting widespread acceptance.

TAM also applies to tax administrators. Successful AI implementation depends on officials perceiving the technology as beneficial and easy to use. For example, AI-enabled audit tools and fraud detection systems can reduce manual workload, enhance accuracy, and streamline enforcement processes. When administrators trust the technology and find it user-friendly, the probability of effective deployment increases, ultimately improving overall tax compliance outcomes.

Addressing both technological and human factors is essential for maximizing AI adoption in Nigeria's tax system. Training programs, public awareness campaigns, and well-designed, user-friendly systems can significantly enhance perceptions of usefulness and ease of use. By applying TAM principles, policymakers and tax authorities can encourage greater acceptance of AI technologies, thereby improving taxpayer compliance, minimizing errors, and increasing the efficiency of tax administration (Folorunso & Nwankwo, 2024; Nwaze, 2024; Okeke et al 2025) .

Technology Acceptance Model provides a robust framework for understanding the role of AI in enhancing tax compliance. By emphasizing perceptions of usefulness and ease of use, TAM highlights the importance of designing systems that are accessible, intuitive, and effective for both taxpayers and administrators. In the Nigerian context, where technological skills and infrastructure vary, applying TAM principles is crucial to ensuring successful AI adoption and realizing its full potential in improving tax compliance (Davis, 1989; Folorunso & Nwankwo, 2024; Nwaze, 2024; Okeke et al 2025).

2.3.3 Agency Theory

Agency Theory was introduced by Jensen and Meckling (1976), it describes the relationship between a principal(ownershareholders), who delegates authority, to an agent(Board/Management), who is expected to act on behalf of the principal. The theory emphasises that in reality, the goals of the principal and the agent do not always align. Agents may act in their own interest, seeking personal benefits rather than prioritising the objectives of the principal, thereby creating what is known as the "agency problem." This often results in inefficiencies, lack of accountability, and additional monitoring costs.

In the area of taxation, the government can be viewed as the principal, while taxpayers serve as the agents. The government expects taxpayers to comply with tax laws by accurately reporting income and paying taxes. However, many taxpayers act opportunistically by underreporting their earnings, inflating deductions, or concealing assets. This self interested behaviour undermines revenue mobilisation efforts and remains one of the biggest challenges to tax compliance in Nigeria.

One of the main challenges identified in Agency Theory is the problem of information asymmetry, which arises when agents possess an informational advantage over principals. In the context of taxation, taxpayers usually have deeper knowledge of their actual financial situation than the tax authorities. This imbalance is more pronounced in Nigeria, where poor record management, uncoordinated databases, and weak third-party

verification systems create loopholes that allow taxpayers to exploit the system and evade taxes.

Artificial intelligence has the potential to minimise this agency problem by bridging the information gap and improving oversight. AI applications can combine data from multiple sources such as banks, customs agencies, property registries, and identity systems to provide tax authorities with a more accurate view of taxpayers' financial activities. Predictive analytics can identify irregularities in income reporting, automated audits can detect suspicious filings, and AI powered chatbots can enhance taxpayer education. Collectively, these tools reduce the advantages agents hold over principals and promote greater alignment between taxpayer behaviour and government objectives.

Evidence from other contexts supports this argument. In OECD countries, advanced analytics have been employed to reduce discrepancies between declared and actual income (OECD, 2019). Kenya's adoption of e-tax platforms has also helped to curb evasion by minimizing the information advantage of taxpayers (Mutisya & Muturi, 2018). In Nigeria, steps such as linking Bank Verification Numbers (BVN) and National Identification Numbers (NIN) to taxpayer records show progress in reducing information asymmetry, but the use of AI could make these initiatives more efficient (Adegbie et al., 2021).Despite its potential, the application of AI in Nigeria faces obstacles, including poor infrastructure, high implementation costs, weak institutional capacity, and concerns

over data protection. Furthermore, political will and fair enforcement remain essential for success.

Agency Theory is relevant to this study because it explains the conflict of interest between taxpayers and government, highlights the problem of information asymmetry, and shows how AI can serve as a corrective mechanism to reduce agency problems, improve compliance, and strengthen revenue generation in Nigeria.

2.4 Empirical Review

Several empirical studies in Nigeria have examined the relationship between taxation, technology adoption, and compliance. These works provide important insights into how digitalization and, more recently, artificial intelligence can strengthen revenue mobilization, reduce leakages, and improve voluntary compliance among taxpayers.

Adegbie and Fakile (2011) conducted a study examining the connection between taxation and Nigeria's economic development. Using secondary data and statistical analysis, they observed that taxation plays a critical role in providing government revenue needed for infrastructure, public services, and long-term national growth. Their findings revealed that an effective tax system can significantly contribute to development when revenues are properly harnessed and channelled into productive sectors. However, the study also identified several weaknesses within Nigeria's tax administration. These included corruption, loopholes in tax laws, widespread evasion, and weak institutional capacity to

enforce compliance. Such shortcomings, they argued, limited the extent to which taxation could serve as a reliable tool for national development. Adegbie and Fakile therefore recommended strengthening administrative structures, reducing corruption, and introducing reforms that would encourage voluntary compliance and broaden the tax base. The relevance of their study to the present research lies in the recognition that without effective administration, taxation cannot deliver developmental outcomes. By implication, the integration of modern technologies such as artificial intelligence could help address many of the inefficiencies they identified, thereby enhancing compliance and ensuring that taxation fulfils its developmental role in Nigeria.

Abiola and Asiweh (2012) carried out one of the earliest empirical studies on tax administration and government revenue in Nigeria. Drawing on survey data from staff of the Federal Inland Revenue Service (FIRS) and analysis of revenue performance reports, they examined the challenges undermining effective compliance. Their findings revealed that systemic inefficiencies, poor record keeping, and widespread corruption among officials significantly weakened revenue mobilisation. Manual processes created loopholes that made monitoring difficult and encouraged tax evasion, while weak enforcement reduced the credibility of the tax system. The authors recommended the adoption of modern technological tools to improve monitoring, enhance accountability, and minimise leakages in the system. This study remains relevant to the present research as it illustrates that traditional, paper-based tax administration is insufficient, and that

sustainable compliance in Nigeria requires technology driven reforms such as artificial intelligence.

Adebisi and Gbegi (2013) examined the effects of tax evasion and avoidance on personal income tax administration in Nigeria, using secondary data obtained from government and tax authority records. Their study revealed that tax evasion was not only widespread but also deeply rooted in the weaknesses of Nigeria's enforcement mechanisms and institutional frameworks. They noted that compliance failures were driven by both deliberate dishonesty among taxpayers and inefficiency within revenue agencies, which lacked the capacity to properly monitor and enforce tax laws. Although the study did not consider artificial intelligence, it remains important because it underscores the need for strong monitoring frameworks in tax administration. In the present context, AI provides a potential solution by enabling automated audits, anomaly detection, and predictive analysis, thereby directly addressing the longstanding weaknesses highlighted in their findings.

Olusuyi and Yidiat (2021) investigated the effect of electronic tax filing (e-filing) on revenue generation in Nigeria. Their study relied on survey responses from taxpayers as well as performance reports from the Federal Inland Revenue Service (FIRS). The findings indicated that e-filing had a significant positive impact on tax revenue, as it streamlined processes that were previously cumbersome under manual systems. By reducing bureaucratic bottlenecks and simplifying compliance procedures, e-filing made

it easier for taxpayers to meet their obligations, thereby encouraging voluntary compliance and improving overall efficiency in tax administration. Despite these positive outcomes, the study also noted several challenges that restricted the full potential of e-filing in Nigeria. Poor internet connectivity, inadequate infrastructure, and low levels of taxpayer awareness were identified as major barriers to effective implementation. Many taxpayers, particularly in rural areas, lacked access to the resources needed to take advantage of electronic filing systems. Olusuyi and Yidiat (2021) therefore concluded that while digitalization can substantially improve compliance, its success depends on complementary measures such as infrastructural investments, capacity building, and taxpayer sensitization. These insights are directly relevant to the adoption of artificial intelligence in tax administration, as AI systems will also require strong institutional support, reliable infrastructure, and effective education campaigns to achieve meaningful results.

Adeyeye, Fonga, and Adeyeye (2022) carried out a study on the implementation of Nigeria's self-assessment tax system, with the aim of determining its effectiveness in improving compliance and revenue generation. The researchers used questionnaires distributed to both taxpayers and tax officials to gather first-hand insights. Their findings revealed that the self-assessment regime encouraged taxpayers to take greater responsibility for declaring their income, which in turn promoted voluntary compliance and strengthened the culture of accountability. The system was also associated with

improved revenue mobilization, as it reduced delays and reliance on direct assessments from tax officials. However, the study also identified several obstacles that limited the full success of the self-assessment system. These included insufficient transparency in administration, inadequate taxpayer awareness of the procedures, and the lack of continuous training and capacity-building for both taxpayers and officials. The authors stressed that reforms of this nature cannot succeed in isolation; they must be supported by strong institutional frameworks, sensitization campaigns, and regular monitoring. This insight is particularly important when considering the role of artificial intelligence in tax administration. Just as self-assessment requires awareness and institutional support to function effectively, AI adoption will equally depend on readiness, stakeholder understanding, and complementary policies to ensure that the technology delivers its intended outcomes.

Isimoya (2022) examined the effect of digitalization on tax compliance and revenue generation in Lagos State, Nigeria. The study adopted a descriptive survey method, collecting data from taxpayers and tax practitioners to understand how electronic systems influence compliance behaviour. The results showed that the use of digital tools such as electronic filing and electronic audits was positively associated with improved revenue mobilization. By simplifying tax procedures and reducing administrative bottlenecks, these reforms made compliance less burdensome for taxpayers and encouraged greater participation in the formal tax system. The study therefore demonstrated that

digitalisation can play a vital role in promoting voluntary compliance and strengthening government revenue. In addition to these findings, Isimoya (2022) stressed that the simplification of tax processes reduces both the cognitive and administrative barriers that often discourage compliance. When taxpayers perceive that filing returns or making payments is straightforward and transparent, they are more willing to comply. This insight is particularly relevant for advancing the debate on artificial intelligence in taxation. AI-driven tools, which can automate data verification, detect irregularities, and provide personalised taxpayer support, have the potential to build on the gains of earlier ICT reforms. Thus, the study highlights digitalisation as a necessary foundation for the gradual introduction of AI in Nigeria's tax administration.

Finally ,Mas'ud, Mohammed, and Gimba (2023) investigated the role of digitalization in subnational tax administration across Nigeria. Their study was motivated by the growing reliance of state governments on internally generated revenue (IGR) to fund development, and the recognition that traditional manual systems were no longer adequate. Drawing on surveys of state revenue officials and analysis of administrative records, they found that the adoption of digital tools such as electronic filing, online payment platforms, and centralised taxpayer databases improved compliance and enhanced transparency in revenue collection. By reducing physical contact between taxpayers and revenue officers, digitalisation helped to limit corrupt practices and revenue leakages that had long undermined state tax systems. Their findings also revealed that digital reforms

contributed to more efficient record keeping and greater predictability in revenue mobilization. Despite these gains, the study highlighted significant challenges in implementation. Digital adoption varied widely across states, with some achieving full deployment of e-systems while others lagged behind due to poor infrastructure, limited technical expertise, and inadequate investments in ICT facilities. The authors further observed that the use of advanced technologies such as artificial intelligence remained almost completely absent from Nigeria's subnational tax systems. While basic digital tools had delivered improvements, there was no evidence of intelligent applications that could automatically detect anomalies, identify evasion patterns, or predict taxpayer behaviour. Based on this gap, the authors recommended a gradual integration of AI into Nigeria's tax administration. Such a shift, they argued, would strengthen enforcement, enhance efficiency, and position states to generate more sustainable revenue in the future.

In summary, the studies reviewed illustrate a clear progression in Nigeria's tax administration. The earliest works (2011–2013) documented the limitations of manual systems, where inefficiencies, corruption, and weak enforcement undermined revenue generation and compliance. Subsequent research (2021–2022) highlighted the contributions of digitalisation initiatives such as electronic filing and self-assessment, which improved transparency and encouraged voluntary compliance, though challenges such as infrastructural deficits and inadequate taxpayer education persisted. More recent scholarship (2023 onwards) has shifted attention to the potential of artificial intelligence,

emphasising its capacity to automate compliance processes, expand coverage to the informal sector, and strengthen enforcement mechanisms, while also recognising ethical and legal concerns.

Despite these valuable contributions, empirical evidence on the practical application of artificial intelligence in Nigeria's tax administration remains limited. This gap provides the foundation for the present study, which seeks to examine how AI can be applied to enhance compliance, reduce evasion, and improve overall revenue mobilization in Nigeria.

2.5 Summary of Literature Review

The review of related literature provides a comprehensive foundation for understanding the intersection of artificial intelligence and tax compliance in Nigeria. From a conceptual perspective, scholars have consistently highlighted that technology has played a central role in reshaping tax administration both globally and nationally. Reforms such as electronic filing systems, digital taxpayer databases, and online payment platforms have simplified procedures, reduced leakages, and promoted greater transparency and accountability in tax management. These innovations demonstrate the potential of technology to improve compliance and revenue mobilization. However, in the Nigerian context, their effectiveness has been undermined by persistent structural challenges,

including weak infrastructure, corruption, limited monitoring mechanisms, and low levels of digital literacy among taxpayers.

Within this landscape, artificial intelligence is increasingly recognized as the next stage of digital transformation. AI applications such as machine learning, predictive analytics, and robotic process automation have the potential to move beyond traditional ICT tools by enabling real-time monitoring, automated audits, and more accurate detection of evasion. These advanced capabilities offer opportunities for addressing weaknesses in Nigeria's current tax system. Nonetheless, the literature also notes that the successful adoption of AI depends on overcoming institutional, infrastructural, and behavioural barriers. Situating AI within these realities underscores both its promise and its challenges, thereby reinforcing the importance of further inquiry into how AI can be adapted to Nigeria's tax environment.

The theoretical perspectives reviewed deepen this understanding. Deterrence theory emphasises that taxpayers are more likely to comply when the risk of detection and punishment is high. Yet, evidence shows that weak enforcement in Nigeria has historically reduced the effectiveness of deterrence, creating an enabling environment for evasion (Abiola & Asiweh, 2012). Artificial intelligence can strengthen deterrence by automating detection, increasing the certainty of audits, and reducing opportunities for manipulation. The Technology Acceptance Model (TAM) highlights that the effectiveness of any tax innovation depends on whether taxpayers find it useful and easy

to adopt. This insight, which has been validated in the context of efiling (Olusuyi & Yidiat, 2021), is directly relevant to AI tools, which must be accessible, transparent, and trusted to achieve high adoption rates. Agency theory further explains the persistent conflict of interest between taxpayers and the state, where information asymmetries favour concealment. AI solutions, particularly predictive analytics and data matching tools, can reduce these asymmetries and strengthen oversight. Collectively, these theories suggest that AI is not only a technical reform but also a behavioural and institutional mechanism that can reshape compliance dynamics in Nigeria.

Empirical studies provide additional insights into the progress and limitations of tax reforms. Early contributions exposed the inefficiencies of manual tax administration, where corruption, poor record-keeping, and weak enforcement undermined revenue generation (Abiola & Asiweh, 2012; Adebisi & Gbegi, 2013). These findings justified the need for reforms that reduced human discretion and enhanced monitoring. Later research documented improvements following digitalisation initiatives such as e-filing and self-assessment, which were shown to encourage voluntary compliance and improve transparency (Olusuyi & Yidiat, 2021; Adeyeye, Fonga, & Adeyeye, 2022). Nonetheless, infrastructural deficits, limited taxpayer awareness, and weak institutional capacity constrained their overall impact. More recent studies confirmed that digitalisation at national and subnational levels improved efficiency and accountability but highlighted that most Nigerian systems remain at the basic ICT stage, with little evidence of AI

integration (Mas'ud, Mohammed, & Gimba, 2023). Research focusing on informal sector taxation further revealed that this significant portion of the economy remains largely outside the tax net. Studies recommend that profiling, biometric solutions, and other AI-driven tools could provide effective strategies for incorporating informal operators into the system (Okoye & Ezejiofor, 2016; Ojo & Gbadebo, 2020). Broader contributions on taxation and development reinforced the argument that without strong administration and compliance mechanisms, taxation cannot meaningfully support Nigeria's economic growth (Adegbie & Fakile, 2011).

The reviewed literature shows that technology has significantly reshaped Nigeria's tax administration, moving it from largely manual procedures to digital processes that have improved transparency and compliance. However, substantial challenges remain, including infrastructural deficiencies, limited institutional capacity, and the continued exclusion of the informal sector from effective taxation. While artificial intelligence has been recognised as a promising tool for addressing these challenges, there is still limited empirical evidence on its practical application within Nigeria's tax system. This gap highlights the significance of the present study, which aims to explore how AI can be effectively applied in tax administration to reduce evasion, enhance monitoring, and strengthen overall compliance outcomes.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology employed in the study. It explains the research design, population of the study, sampling technique and sample size, source of data, research instrument, validity and reliability of the instrument, operationalization of variables, model specification, and the method of data analysis. The aim is to ensure that the research is systematic, reliable, and capable of addressing the research questions on Artificial Intelligence and tax compliance in Nigeria.

3.2 Research Design

This study uses a descriptive survey research design. The design is suitable because it enables the researcher to gather first-hand information from respondents on their opinions, attitudes, and experiences concerning Artificial Intelligence and tax compliance in Nigeria. By focusing on individuals who are directly involved in the tax system, the design ensures that the information collected is practical and relevant.

The survey design also allows for the collection of standardized data from a relatively large number of respondents within a short period of time and at a minimal cost. This makes it very useful for academic research where resources are limited but a wide coverage is required. Since the study involves both tax officials and taxpayers, the survey

approach helps to capture the perspectives of different groups, thereby giving a more complete picture of the subject matter.

The descriptive nature of the design makes it possible to examine the relationship between Artificial Intelligence and tax compliance without manipulating any variables. It focuses on observing and describing what already exists in the Nigerian tax system, such as the use of Artificial intelligence tools and their effect on compliance levels.

This design also allows the application of statistical methods for data analysis. Descriptive statistics such as tables, percentages, and charts can be used to present the responses in a clear manner, while inferential statistics such as regression analysis can be used to test the hypotheses and determine the extent to which Artificial Intelligence affects tax compliance in Nigeria.

3.3 Population of the Study

The population of this study consists of 100 respondents, made up of taxpayers and tax officials in Nigeria. The taxpayers include registered business owners and self-employed individuals who are directly responsible for filing and paying taxes. The tax officials are drawn from staff of revenue agencies who are involved in the administration and monitoring of tax compliance.

This population was selected because both taxpayers and tax officials are key stakeholders in the tax system. Tax officials provide information on the administrative

side of compliance, while taxpayers give practical insights on how tax policies and the use of Artificial Intelligence affect their level of compliance. Together, these groups are well positioned to provide reliable and relevant data for the study

3.4 Sampling Technique

This study adopted a of purposive Sampling technique to select respondents.

Purposive Sampling:This was applied in selecting tax officials, as only those directly involved in tax administration and monitoring could provide meaningful insights into the subject of Artificial Intelligence and tax compliance. Thus, 100(one hundred)participants were selected based on the knowledge and expertise on tax matters and the issues of artificial intelligence. A Further reason for using one hundred participants was the time constraints for completing the project.

3.5 Sources of Data

The study relied solely on primary data as its source of information. Primary data refers to original information collected directly from respondents for the purpose of this research. Data was gathered through the administration of structured questionnaires distributed to taxpayers and tax officials.This choice was made because primary data provides first-hand, reliable, and specific information that directly addresses the research objectives. It reflects the real-life experiences, perceptions, and attitudes of the respondents regarding Artificial Intelligence and tax compliance in Nigeria. Using

primary data also ensures that the study is original, up-to-date, and tailored to the specific context under investigation.

3.6 Research Instrument

The main instrument for data collection in this study is a structured questionnaire. The questionnaire was designed in line with the research objectives, research questions, and hypotheses of the study to ensure that the data collected is directly relevant for analysis.The questionnaire is divided into five major sections for clarity and ease of response:

Section A: Demographic Information

This section gathers background information on respondents, such as gender, age, educational qualification, Occupation, and years of tax experience. This helps to describe the profile of the respondents and allows for subgroup comparisons.

Section B: Current State of Tax Compliance

Questions in this section address the first objective of the study: to examine the current state of tax compliance in Nigeria. Items measure respondents' level of compliance, their filing and payment behavior, and their general perception of compliance among taxpayers.

Section C: Challenges of Tax Administration

This section covers the second objective: to identify the challenges facing tax administration in Nigeria. It includes questions on difficulties taxpayers face in fulfilling

obligations, administrative bottlenecks, corruption, technological gaps, and other compliance-related issues.

Section D: Application and Impact of Artificial Intelligence

Questions in this section link directly to the third and fourth objectives: to explore potential applications of AI in tax processes and to evaluate the impact of AI-driven systems on improving tax compliance. Items measure awareness of AI, perceptions of its usefulness, potential benefits, and effectiveness in reducing evasion, lowering administrative costs, and enhancing risk assessment compared to traditional methods. This section also provides the data needed to test hypotheses H2, H3, and H4.

Section E: Strategies for Effective AI Integration

This section addresses the fifth objective: to recommend strategies for effective integration of AI in Nigeria's tax system. Respondents provide opinions on the most feasible, acceptable, and sustainable approaches for AI adoption, as well as potential barriers to successful implementation. This section also supports hypothesis H5.

Most items in Sections B–E are structured on a five-point Likert scale, ranging from Strongly Agree (5) to Strongly Disagree (1). This format allows respondents to express the degree of their agreement with each statement, ensuring more precise measurement of attitudes and perceptions.

The questionnaire was carefully developed based on existing studies on taxation and Artificial Intelligence, while also being customized to fit the Nigerian context. This ensures that the instrument is both academically grounded and practically relevant.

3.7 Validity and Reliability of the Instrument

The questionnaire was validated by the supervisor to ensure that it adequately addressed the research objectives and was clear to respondents. This validation ensured that the instrument was reliable and suitable for collecting the data required for the study.

3.8 Model Specifications

In order to examine the role of Artificial Intelligence in enhancing tax compliance in Nigeria, this study specifies a regression model that relates the dependent variable (Tax Compliance) to the independent variable (Artificial Intelligence Adoption), while also controlling for demographic factors such as age, education, and income. The inclusion of demographic variables ensures that the estimated effect of Artificial Intelligence is not biased by individual differences among respondents.

The functional form of the model is expressed as:

$TC = f(AI, AGE, EDU, INC)$

For estimation purposes, the model is expressed in a linear regression form as:

$TC_i = \beta0 + \beta1\ AI_i + \beta2\ AGE_i + \beta3\ EDU_i + \beta4\ INC_i + \varepsilon_i$

Where:

TC = Tax compliance score of respondent i

AI = Artificial Intelligence adoption score of respondent i

AGE = Age of respondent i

EDU = Educational attainment of respondent i

INC = Income level of respondent i

$\beta 0$ = Constant term

$\beta 1$-$\beta 4$ = Coefficients of the explanatory variables

ε_i = Stochastic error term

The parameter of primary interest is $\beta 1$. A positive and statistically significant $\beta 1$ would imply that the adoption of Artificial Intelligence contributes to improved tax compliance in Nigeria.

The model will be estimated using the Ordinary Least Squares (OLS) technique, as it is appropriate for continuous dependent variables and provides the Best Linear Unbiased Estimates (BLUE) under the classical regression assumptions. Robust standard errors will be applied to correct for potential heteroskedasticity by adjusting the estimated standard errors of the regression coefficients. This ensure that the statistical tests (such as t-test and p-value) remain valid and reliable, thereby enhancing the robustness of the empirical results.

3.9Measurement/Operationalization of Variables

Table 3.1 :Operationalization of Variables

Variable	Type	Measurement/Indicators	Scale of Measuremet	Source of Data
Tax compliance	Dependent Variable	Measured through respondents self-reported compliance behaviors (timely filing, accuracy of returns, avoidance of evasion)using Likert-scale items	Ordinal (aggregated index)	Questionnaires
Artificial Intelligence Adoption (AI)	Independen t Variable	Perception of Artificial intelligence tools used in tax administration (e-filing, AI-assisted audits,chatbots, automated reminders data matching)	Ordinal (aggregated index)	Questionnaires
Age	Control Variable	Chronological age of respondent,grouped into categories (18-30years,31-45 years,46-60 years,60 years and above)	Interval/Ratio	Questionnaires(Demographics)
Education	Control Variable	Highest level of education attained (Secondary, Diploma, Bachelor's, Postgraduate)	Ordinal	Questionnaires (Demographics)
Years of Experience in Tax Matters	Control Variable	Years of Experience in Tax Matters (Less than 5 years, 5-10years, 11-20years and above 20 years)	Ordinal	Questionnaires (Demographics)

Source:Fieldwork survey 2025

3.10 Data Organisation

The data collected from the administered questionnaires will be systematically organized to ensure accuracy, reliability, and ease of analysis. Responses will first be screened to

identify and exclude incomplete or inconsistent questionnaires. Thereafter, the valid responses will be coded and entered into a statistical software package (such as SPSS or STATA) for analysis.

Each variable will be assigned a numerical code to allow for quantitative analysis. For instance, responses on the Likert scale (e.g., Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree) will be coded as 5, 4, 3, 2, and 1 respectively. Demographic variables such as age, education, and income will also be categorized and coded appropriately.

After coding, the data will be cleaned to eliminate entry errors and ensure consistency. The organized dataset will then be used to generate descriptive statistics (such as frequencies, percentages, and mean scores) as well as inferential statistics (such as regression analysis) to test the study's hypotheses.

This structured approach to data organization ensures that the raw responses from the field are transformed into a reliable dataset that can meaningfully address the research objectives.

3.11 Method of Data Organisation

The results of the analysis will be presented in a clear and systematic manner to ensure proper understanding. Data collected from the field will first be summarised using descriptive statistics such as frequencies, percentages, means, and standard deviations. These results will be displayed in tables, charts, and graphs for easy interpretation.

Inferential statistics such as regression outputs will be presented in tables that show the estimated coefficients, significance levels, and goodness-of-fit measures. Where necessary, charts and figures will be used to highlight patterns and relationships between variables.This approach to data presentation will make the findings more accessible, enable comparison across variables, and provide a logical basis for discussing how Artificial Intelligence influences tax compliance in Nigeria.

3.12 Method of Data Analysis

The data collected for this study will be analysed using both descriptive and inferential statistical techniques. Descriptive statistics such as frequencies, percentages, means, and standard deviations will be employed to summarise the demographic characteristics of respondents and to provide a general overview of their perceptions.

Inferential statistics will then be applied to test the research hypotheses and examine the relationship between Artificial Intelligence adoption and tax compliance. Specifically, the study will employ the Ordinary Least Squares (OLS) regression technique, as it is suitable for estimating the relationship between a dependent variable and one or more independent variables. The regression results will show the magnitude, direction, and statistical significance of the effect of Artificial Intelligence on tax compliance while controlling for demographic variables such as age, education, and income.

The level of statistical significance will be set at 5% (), which implies that the probability of committing a Type I error is limited to 5%. All analyses will be carried out using Statistical Package for Social Sciences (SPSS) or any other appropriate econometric software.

This approach ensures that the data is not only described but also subjected to rigorous testing, thereby providing reliable evidence for drawing conclusions and making recommendations

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents, analyzes, and interprets the data collected through questionnaires administered to respondents on the topic Artificial Intelligence and Tax Compliance in Nigeria. The aim is to determine how Artificial Intelligence (AI) influences tax compliance, reduces tax evasion, and improves revenue collection in Nigeria. The data were analyzed in line with the research objectives using descriptive statistics such as frequencies and percentages.

The data presented here were obtained from selected respondents who are directly or indirectly involved in tax matters, including taxpayers, tax officers, and professionals in related fields. Their responses provide valuable insights into the current state of tax compliance, the challenges faced by the tax system, and the potential of Artificial Intelligence as a tool for improving efficiency in tax administration. This analysis is structured according to the research objectives outlined in Chapter One. Each objective is analyzed using descriptive statistical tools such as frequency distribution tables and simple percentages to summarize the responses of participants. The use of these statistical methods ensures that the findings are presented in a clear and comprehensible manner, thereby making it easier to draw meaningful conclusions.

A total of 100 questionnaires were distributed to respondents, as determined by the sample size calculation in Chapter Three. All 100 questionnaires were successfully completed and returned, representing a 100% response rate.

4.2 Data Presentation

4.2.1 Demographic Information of Respondents

The demographic profile of the respondents was analyzed to provide a background to the data collected. This is important because the characteristics of the respondents, such as gender, age, educational qualification, occupation, and years of experience in tax matters may influence perceptions of tax compliance and the use of Artificial Intelligence (AI) in Nigeria. The demographic distribution of respondents is presented in the Table below.

Table 4.1: Gender Distribution of Respondents

Respondents	**Frequency**	**Percentage**
Female	41	41.0
Male	59	59.0
Total	**100**	**100**

Source: Fieldwork survey 2025

From the table above, the gender distribution of the respondents shows that 59% of the respondents were male, while 41% were female. This indicates that both genders were

adequately represented in the study, though male respondents slightly dominated the sample. The relatively balanced representation suggests that the opinions and responses gathered reflect a fair cross-section of both male and female participants involved in tax-related activities in Nigeria. The dominance of male respondents may be attributed to the fact that men often constitute a higher proportion of individuals engaged in formal business operations and tax administration roles in Nigeria. Nevertheless, the participation of female respondents (41%) demonstrates growing involvement of women in economic and professional sectors, including taxation and technology adoption. This gender composition therefore provides a diverse and inclusive perspective on how Artificial Intelligence can influence tax compliance in Nigeria.

Table 4.2: Age Distribution of Respondents

Age category	**Frequency**	**Percentage**
18 -30years	91	91
31-45 years	2	2
46-60years	4	4
60 years and above	3	3
Total	**100**	**100**

Source: Fieldwork survey 2025

The results in Table 4.2 reveal that the majority of respondents (91%) were between 18 and 30 years of age. This indicates that most of the participants were young adults who are likely to be active in various economic activities, either as entrepreneurs, employees, or professionals involved in tax-related matters. The dominance of this age group suggests a youthful and vibrant population that is generally more open to embracing new technologies, including Artificial Intelligence (AI), in Nigeria's tax system. Furthermore, 2% of the respondents were between 31 and 45 years, while 4% were between 46 and 60 years, and only 3% were 60 years and above. The relatively smaller representation of older respondents implies that tax-related innovations and digital systems may appeal more to younger individuals who are typically more technologically inclined. This finding highlights an important aspect of AI adoption in Nigeria that the success of implementing AI-driven tax compliance systems may rely heavily on the younger generation's familiarity with and acceptance of modern technology. Their active participation in digital financial transactions and online business activities positions them as key drivers of technology-based tax compliance in the country.

Table 4.3: Educational Qualification of Respondents

Educational level	**Frequency**	**Percentage**
Secondary School level	10	10
Diploma/NCE	7	7
Bachelor's Degree	70	70
Postgraduate Degree	13	13
Total	**100**	**100**

Source: Fieldwork survey 2025

The result in Table 4.3 reveals that the majority of respondents (70%) possessed a Bachelor's degree, while 10% each had Secondary School and(13%) had Postgraduate qualifications. In addition, 7% of the respondents held Diploma or NCE certificates. This distribution shows that most participants were well-educated and had attained a level of education sufficient to understand the principles of taxation, technology, and the potential role of Artificial Intelligence (AI) in improving tax compliance in Nigeria. The dominance of degree holders among the respondents suggests that the study drew responses from individuals who are likely knowledgeable about current developments in taxation and digital transformation. Their educational background enhances the reliability of the information obtained, as they can provide informed opinions on the adoption and

application of AI tools in tax administration. The presence of respondents with lower educational qualifications, though smaller in proportion, adds diversity to the sample. It reflects the inclusion of a broader segment of the Nigerian population, thereby ensuring that the findings of the study represent both professionals and everyday taxpayers. Overall, the educational distribution of respondents demonstrates that the study population is sufficiently literate and capable of appreciating the implications of using AI to strengthen tax compliance and revenue collection in Nigeria.

Table 4.4: Occupation of Respondents

Occupation	**Frequency**	**Percentage**
Taxpayers (Business Owner/Self-Employed)	87	87
Tax official (Revenue Agency Staff)	13	13
Total	**100**	**100**

Source: Fieldwork survey 2025

The result in Table 4.4 shows that 87% of the respondents were taxpayers, while 13% were tax officials. This indicates that the majority of participants were individuals from the private sector, such as business owners and self-employed persons, who are directly involved in tax payment and compliance activities in Nigeria. Their participation

provides valuable firsthand insight into the realities, challenges, and attitudes surrounding tax compliance within the Nigerian economy. The inclusion of 13% of tax officials (revenue agency staff) is also significant, as it ensures that the study captures the perspectives of those responsible for tax administration and enforcement. This combination of taxpayers and tax officials provides a balanced and holistic view of the relationship between Artificial Intelligence and tax. The dominance of taxpayers in the sample reflects the study's emphasis on understanding compliance behavior from the viewpoint of those who interact most frequently with the tax system. Since taxpayers are the ultimate subjects of tax policies and AI-based innovations, their responses are crucial in evaluating how Artificial Intelligence can enhance voluntary compliance and improve revenue generation in Nigeria.

Table 4.5: Years of Experience in Tax Matters

Years of Experience in Tax Matters	**Frequency**	**Percentage**
Less than 5 years	84	84
5-10years	8	8
11-20years	3	3
Above 20 years	5	5
Total	**100**	**100**

Source: Fieldwork survey 2025

The result in Table 4.5 shows that most respondents (84%) had less than five years of experience in tax matters, indicating that the majority of participants were relatively new to the Nigerian tax system. This suggests that a large proportion of respondents represent a younger, more dynamic group who may be familiar with digital processes and open to modern technological innovations such as Artificial Intelligence (AI). Their inclusion in the study provides valuable contemporary insights into how emerging technologies can improve tax compliance and administration in Nigeria., 8% of the respondents had between five and ten years of experience, 3% had between eleven and twenty years, while only 5% had over twenty years of experience. The smaller representation of highly experienced individuals may reflect the limited number of long-term professionals in the Nigerian tax sector compared to the growing number of new entrants and business owners who are engaging with the system in recent years. The predominance of respondents with limited experience also highlights an evolving tax environment where digitalization and AI-driven solutions are increasingly relevant to new taxpayers and administrators. Their responses therefore provide a realistic assessment of how AI can be adopted and integrated into Nigeria's tax operations to simplify compliance and enhance efficiency.

4.2.2 Research Questions

Research Questions 1: To Examine the Current State of Tax Compliance in Nigeria

Table 4.6: Current Tax Compliance (TC)

S/N	Statement	S A	A	N	D	S D	T N	MS	S D	D
1	I always file my tax return	21	35	37	5	2	100	3.65	0.94	Agreed
2	I accurately report my income and other taxable information	27	34	26	10	3	100	3.72	1.06	Agreed
3	I am aware of penalties for non compliance with tax regulations	33	37	18	10	2	100	3.89	1.04	Agreed
4	Most taxpayers I know comply with tax filling requirements	23	40	20	12	5	100	3.64	1.11	Agreed
5	Tax compliance is influenced by ease of filing and payment processes	27	45	20	5	3	100	3.88	0.96	Agreed
	Cluster mean							3.76		

Source: Fieldwork survey 2025

The result in Table 4.6 presents the respondents' views on their level of tax compliance in Nigeria. The mean values of all items are above 3.00, indicating general agreement among respondents. This implies that the majority of taxpayers demonstrate a reasonable level of compliance with tax obligations. The highest mean score (3.88) was recorded for the statement Tax compliance is influenced by ease of filing and payment processes. This

suggests that simplified and user-friendly tax systems encourage compliance among taxpayers. Respondents also agreed that awareness of penalties for non-compliance (mean = 3.84) motivates them to fulfill their tax obligations. The mean score of 3.72 for I accurately report my income and other taxable information shows that most respondents tend to be honest in their tax declarations. However, the item Most taxpayers I know comply with tax filing requirements had a relatively lower mean (3.64), indicating that while individual compliance may be high, perceived compliance among peers may vary. The findings imply that the level of tax compliance among respondents in Nigeria is moderately high, and that compliance is largely influenced by the ease of filing and awareness of penalties. This supports the notion that improving tax systems and promoting awareness can further enhance voluntary compliance.

Research Questions 2: To Identify the Challenges of Tax Administration in Nigeria

Table 4.7 : Challenges of Tax Administration (CTA)

S/N	Statement	S A	A	N	D	S D	T N	MS	S D	D
1	Tax procedures in Nigeria are too complex and difficult to follow	34	40	21	5	-	100	4.03	0.87	Agreed
2	Corruption with tax agencies affects compliance tax	50	39	10	1	-	100	4.38	0.70	Agreed
3	Lack of awareness about tax policies discourages compliance	40	45	13	2	-	100	4.23	0.75	Agreed
4	Inadequate use of technology slows down tax administration	44	41	11	3	1	100	4.24	0.84	Agreed
5	Tax related information provided by authorities is not clear or accessible	26	48	20	6	-	100	3.94	0.83	Agreed
	Cluster mean							4.16		Agreed

Source: Fieldwork survey 2025

The result in Table 4.7presents respondents' perceptions of the challenges affecting tax administration in Nigeria. All mean scores are above 3.90, indicating strong agreement that these factors hinder effective tax collection. The highest mean (4.38) was for Corruption within tax agencies affects compliance levels, showing that corruption is perceived as the most significant barrier to tax administration. Other major challenges include lack of awareness about tax policies (4.23), inadequate use of technology (4.24), and complex tax procedures (4.03). These results suggest that limited taxpayer education, poor technological adoption, and cumbersome procedures reduce efficiency in tax administration. Respondents also agreed that tax-related information provided by

authorities is unclear or inaccessible (3.94), highlighting communication gaps that may discourage voluntary compliance. The findings indicate that corruption, low awareness, technological inefficiencies, complex procedures, and unclear information are the main obstacles to effective tax administration in Nigeria. Addressing these challenges is crucial for improving tax compliance and revenue collection.

Research Questions 3 and 4: Artificial intelligence Applications and Impact on Tax Compliance

Table 4.8: Artificial Intelligence (AI)

S/N	Statement	S A	A	N	D	S D	T N	MS	S D	D
1	I am aware of AI tools used in tax administration (e-filing, AI audits, chatbots, automated reminders, data matching)	27	41	16	14	2	100	3.77	1.06	Agreed
2	AI tools have the potential to reduce errors in tax filing and processing	32	50	12	5	1	100	4.07	0.85	Agreed
3	AI can enhance monitoring and detection of tax evasion	32	51	12	4	1	100	4.09	0.83	Agreed
4	The use of AI in tax administration reduces administrative costs	24	53	18	4	1	100	3.95	0.82	Agreed
5	AI adoption can improve overall tax compliance levels among taxpayers	29	48	16	6	1	100	3.98	0.88	Agreed
6	AI tools make tax procedures faster and more efficient	36	55	8	3	2	103	4.16	0.85	Agreed
	Cluster mean							4.003		

Source: Fieldwork survey 2025

The result in table 4.8 presents respondents' views on the use of Artificial Intelligence (AI) in tax administration and its perceived impact on improving tax compliance in Nigeria. All mean values are above 3.5, indicating general agreement that AI tools are valuable in the tax process. The respondents moderately agree that they are aware of AI tools used in tax administration (mean = 3.77, SD = 1.06). This suggests that while some taxpayers are knowledgeable about e-filing systems, AI audits, chatbots, automated reminders, and data matching, there is still room to improve awareness. Strong agreement was observed for several statements indicating the impact of AI on tax processes:

a.AI enhances monitoring and detection of tax evasion (mean = 4.09, SD = 0.83),

b.AI reduces errors in filing and processing (mean = 4.07, SD = 0.85),

c.AI makes tax procedures faster and more efficient (mean = 4.18, SD = 0.78),

d.AI reduces administrative costs (mean = 3.95, SD = 0.82),

e.AI adoption can improve overall compliance among taxpayers (mean = 3.98, SD = 0.88).

These results indicate that respondents perceive AI as a tool that enhances efficiency, accuracy, and overall effectiveness of tax administration. The relatively low standard deviations show that responses were fairly consistent across participants, reflecting a shared perception of AI's benefits. The findings suggest that AI has the potential to significantly improve tax compliance in Nigeria by streamlining processes, reducing errors, and enhancing monitoring. However, the moderate awareness level highlights the

need for public education and capacity-building to maximize the benefits of AI in tax administration.

Research Questions 5: Strategies for Effective Integration of AI in Nigeria's Tax System

Table 4.9 Strategies for Effective Artificial intelligence Integration (SAI)

S/N	Statement	S A	A	N	D	S D	T N	MS	S D	D
1	Training of tax officials on AI is necessary for effective implementation	46	42	9	2	1	100	4.30	0.69	Agreed
2	Public awareness campaigns on AI applications in tax administration will improve compliance	45	40	11	3	1	100	4.25	0.84	Agreed
3	Integrating AI gradually alongside existing systems is more effective than sudden implementation	40	42	16	2	-	100	4.20	0.77	Agreed
4	Clear policies and guidelines on AI use in tax processes are essential	38	49	10	2	1	100	4.21	0.78	Agreed
5	Incentives for using AI-based tax platforms can increase taxpayer adoption	30	43	21	3	3	100	3.94	0.95	Agreed
	Cluster mean							**4.18**		

Source: Fieldwork survey 2025

The analysis indicates that training tax officials (mean = 4.30) is the most critical strategy for effective AI adoption. Proper training equips officials with the skills to operate AI tools efficiently, minimizes errors, and ensures smooth handling of tax processes. Similarly, public awareness campaigns (mean = 4.25) are essential to educate taxpayers

about AI systems, build trust, and encourage voluntary participation in digital tax platforms. Respondents also emphasized the importance of gradual integration of AI alongside existing systems (mean = 4.20), which allows both staff and taxpayers to adapt to new technology without disrupting ongoing operations. In addition, clear policies and guidelines (mean = 4.21) provide structure, accountability, and transparency, reducing potential misuse of AI systems and ensuring consistent application across tax administration. While slightly lower, incentives for taxpayers (mean = 3.95) remain important as they can motivate citizens to adopt AI-based platforms, such as e-filing and automated reminders, and reinforce positive compliance behavior. Overall, the findings suggest that a combination of training, awareness, structured policies, gradual implementation, and incentives is essential for successful AI integration, improving compliance, efficiency, and reducing administrative challenges.

4.3 Hypotheses Testing

Hypothesis One (Ho_1): The implementation of artificial intelligence technologies in Nigeria's tax administration will not significantly increase the tax compliance rate.

The analysis of AI adoption and tax compliance items shows mean values ranging from 3.64 to 3.89, all within the Agreed range. The cluster mean of 3.76 for tax compliance and 4.003 for AI adoption indicates that respondents generally agree that AI tools are used effectively in tax administration and positively influence compliance. This implies

that the use of AI (such as e-filing, automated reminders, and chatbots) improves the accuracy, timeliness, and monitoring of tax payments. Based on this, the null hypothesis (Ho_1) is rejected, meaning the implementation of AI technologies significantly increases the tax compliance rate in Nigeria.

Hypothesis Two (Ho_2): The implementation of artificial intelligence technologies will not significantly reduce the cost of tax administration in Nigeria.

The analysis of AI adoption and administrative cost reduction shows mean values ranging from 3.95 to 4.16, all in the Agreed range. The cluster mean of 4.003 for AI adoption and 4.003 for cost reduction indicates that respondents generally agree that AI tools reduce errors, automate tasks, and lower administrative expenses. Based on this, the null hypothesis (Ho_2) is rejected, meaning the implementation of AI technologies significantly reduces the cost of tax administration in Nigeria.

Hypothesis Three (Ho_3): Artificial intelligence-driven risk assessment models are not more effective than traditional methods in identifying tax non-compliance in Nigeria.

The analysis of AI monitoring and risk assessment items shows mean values ranging from 3.9 to 4.20, all within the Agreed range. The cluster mean of 4.003 indicates that respondents generally agree that AI tools enhance monitoring and detection of tax non-compliance. This implies that the use of AI, such as automated data matching, AI audits,

and monitoring systems, improves the accuracy of detecting errors, enhances oversight, and strengthens compliance enforcement in tax administration. Based on this, the null hypothesis (Ho_3) is rejected, meaning AI-driven risk assessment models are perceived as effective in detecting tax non-compliance in Nigeria.

Hypothesis Four (Ho_4): The potential benefits of artificial intelligence implementation in Nigerian tax administration do not outweigh the costs and implementation challenges.

The analysis of AI benefit-related items shows mean values ranging from 3.91 to 4.20, all within the Agreed range. The cluster mean of 4.003 indicates that respondents generally agree that the benefits of AI, such as improving compliance, reducing errors, and making tax processes more efficient, are significant. This implies that AI adoption provides tangible advantages that can outweigh the costs and challenges associated with its implementation. Based on this, the null hypothesis (Ho_4) is rejected, meaning the potential benefits of AI implementation in Nigerian tax administration are perceived to outweigh the costs and implementation challenges.

Hypothesis Five (Ho_5): Stakeholder perception and readiness do not significantly influence the successful adoption of artificial intelligence in Nigeria's tax system.

The analysis of stakeholder perception and readiness items shows mean values ranging from 3.94 to 4.30, all within the Agreed range. The cluster mean of 4.18 indicates strong

agreement among respondents that factors such as training officials, public awareness campaigns, gradual integration, clear policies, and incentives are crucial for the successful adoption of AI in tax administration. This implies that stakeholder readiness and perception play a key role in ensuring effective implementation and adoption of AI systems. Based on this, the null hypothesis (Ho_5) is rejected, meaning stakeholder perception and readiness significantly influence the successful adoption of AI in Nigeria's tax system.

4.4 Discussion of Findings

The findings of this study have provided empirical evidence on the role of artificial intelligence (AI) in improving tax administration and compliance in Nigeria. The discussion is organized in line with the research objectives and hypotheses of the study.

1. AI Adoption and Tax Compliance

The study revealed that AI adoption significantly influences tax compliance in Nigeria. Respondents agreed that AI tools such as e-filing, automated reminders, and chatbots improve the timeliness and accuracy of tax filing. The cluster mean for tax compliance was 3.76, while the cluster mean for AI adoption was 4.003, indicating strong agreement that AI positively affects compliance. Respondents reported that AI tools improve the accuracy and timeliness of tax filing, reduce errors, and enable better monitoring of tax payments. These results support the rejection of Hypothesis One (Ho_1) and indicate that

AI adoption is a key factor in improving voluntary compliance among taxpayers in Nigeria.

2.Challenges of Tax Administration

The study revealed that several factors hinder effective tax administration in Nigeria. Respondents agreed that challenges such as corruption within tax agencies, complex tax procedures, limited awareness of tax policies, inadequate use of technology, and unclear tax-related information negatively affect tax compliance. The mean values for these items ranged from 3.94 to 4.38, with the highest mean recorded for corruption within tax agencies (4.38). The cluster mean for challenges of tax administration was 4.16, indicating strong agreement that these factors are significant obstacles to effective tax collection. Respondents noted that corruption and complex procedures slow down tax administration, while poor awareness and unclear information reduce taxpayers' willingness and ability to comply. These results support the rejection of Hypothesis Two (Ho_2) and indicate that addressing these administrative challenges is critical for improving compliance and revenue collection in Nigeria.

3. AI Applications and Impact on Tax Compliance

The study revealed that AI applications significantly enhance the effectiveness of tax administration in Nigeria. Respondents agreed that AI tools, including automated monitoring, data matching, risk assessment models, and error-reduction systems, improve the accuracy, speed, and efficiency of tax processes. Mean values for these items ranged

from 3.77 to 4.16, with a cluster mean of 4.003, indicating strong agreement that AI positively impacts tax compliance. Respondents reported that AI tools enhance monitoring and detection of tax evasion, reduce administrative errors, and make tax procedures faster and more efficient. These results support the rejection of Hypotheses Three (Ho_3) and Four (Ho_4) and indicate that AI-driven systems are perceived as effective tools for identifying non-compliance and improving overall tax administration in Nigeria.

4. Stakeholder Readiness and Strategies for Effective AI Integration

The study revealed that both stakeholder readiness and specific strategies are crucial for the successful adoption of AI in Nigerian tax administration. Respondents agreed that training tax officials, public awareness campaigns, gradual integration of AI alongside existing systems, clear policies and guidelines, and incentives for taxpayers are essential for smooth implementation. Mean values for these items ranged from 3.94 to 4.30, with a cluster mean of 4.18, indicating strong agreement on their importance. Training equips tax officials to efficiently operate AI tools, while public awareness campaigns encourage taxpayers to engage with AI systems. Gradual integration and clear policies promote transparency and accountability, ensuring smooth adaptation by both staff and taxpayers. Incentives motivate voluntary adoption, reinforcing compliance behavior. These findings suggest that addressing stakeholder readiness and implementing structured strategies are

critical to effective AI integration, improving compliance, reducing administrative inefficiencies, and enhancing revenue collection in Nigeria.

4.5 Summary of the Chapter

This chapter presented, analyzed, and interpreted the data collected through the questionnaire administered to taxpayers and tax officials across selected sectors in Nigeria. A total of 100 valid responses were analyzed, covering respondents' demographic profiles and their views on tax compliance, challenges of tax administration, AI adoption, and strategies for effective AI integration. The demographic analysis revealed that respondents were fairly balanced in terms of gender and represented a wide distribution of educational qualifications, job roles, and sectors. However, the sample was largely composed of younger respondents with less than five years of experience in tax-related roles, reflecting the views of early-career professionals who are actively engaged with modern tax processes. The analysis of the research objectives showed that respondents generally agreed on the positive role of AI adoption in improving tax compliance. Specifically, AI tools such as e-filing, automated reminders, chatbots, and data-matching systems enhanced the accuracy, timeliness, and monitoring of tax payments. Challenges of tax administration, including corruption, complex procedures, limited awareness, inadequate technology use, and unclear information, were identified as significant barriers to compliance. Additionally, respondents emphasized that stakeholder readiness and strategic measures including training, public awareness

campaigns, gradual integration, clear policies, and incentives are critical for effective AI adoption.

Hypothesis testing confirmed these results, as all five null hypotheses were rejected. This indicates that AI adoption significantly increases tax compliance, reduces errors, improves efficiency, and is more effective than traditional methods in monitoring and detecting non-compliance in Nigeria. The findings also emphasize that addressing administrative challenges and preparing stakeholders are essential for maximizing the benefits of AI in tax administration.

In summary, this chapter concludes that AI adoption, combined with stakeholder readiness and strategic measures, is essential for enhancing tax compliance, reducing administrative inefficiencies, and improving overall tax administration in Nigeria.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study examined the role of Artificial Intelligence (AI) in improving tax compliance in Nigeria. The main objectives were to assess the current level of tax compliance, identify challenges facing tax administration, explore how AI can be applied in tax processes, evaluate its impact on compliance, and suggest ways for effective integration of AI into the Nigerian tax system.

Data for the study were collected from 100 respondents, which included both taxpayers and tax officials. The analysis showed that the level of tax compliance in Nigeria is still moderate. Many taxpayers try to comply with tax regulations, but several issues continue to hinder effective compliance. These problems include corruption among some tax officers, poor enlightenment of taxpayers, complex tax procedures, lack of adequate technology, and weak monitoring systems.

This study also found that Artificial Intelligence tools such as electronic filing (e-filing), automated reminders, chatbots, and data-matching systems can help improve the efficiency of tax administration. Respondents agreed that the use of AI makes tax processes faster, reduces mistakes, helps track payments easily, and limits opportunities for evasion. Results from the hypothesis testing further showed that AI adoption has a significant positive effect on tax compliance in Nigeria. This means that when AI is

properly applied, it can increase voluntary compliance, reduce administrative stress, and improve transparency in tax operations.

This study also discovered that successful implementation of AI in tax administration requires proper training for tax officers, public awareness for taxpayers, and gradual introduction of new technologies to ensure smooth adaptation.

In summary, this study show that Artificial Intelligence has great potential to enhance Nigeria's tax system by making it more transparent, efficient, and reliable. If properly used, AI can help reduce evasion, encourage honesty among taxpayers, and boost government revenue collection.

5.2 Conclusion

From the findings of this research, it is clear that Artificial Intelligence (AI) plays a growing and influential role in Nigeria's tax system. The study has shown that while tax compliance challenges such as corruption, lack of awareness, and poor technology persist, Artificial intelligence offers practical solutions that can make tax administration more efficient and transparent.

The introduction of Artificial Intelligence based systems such as automated data processing, e-filing platforms, and digital monitoring tools has the potential to reduce human error, curb tax evasion, and encourage voluntary compliance. However, the

success of these innovations depends on proper implementation, continuous staff training, and public trust in the system.

In conclusion, Artificial intelligence is not just a technological advancement but a reform tool that can reshape Nigeria's tax administration for the better. When effectively integrated, it can strengthen revenue generation, reduce administrative burdens, and build a more transparent and accountable tax environment.

5.3 Recommendations

Based on the conclusions drawn, the following recommendations are proposed to strengthen the role of Artificial Intelligence in enhancing tax compliance in Nigeria.

1. Invest in Artificial intelligence Infrastructure:

The government and tax agencies should invest in modern digital infrastructure and Artificial intelligence technologies to support automation, data analysis, and monitoring of tax activities. Reliable internet access, secure databases, and modern ICT facilities are essential for effective AI implementation.

2. Capacity Building and Training:

Continuous training programs should be organized for tax officials to equip them with the necessary technical skills to operate and manage AI systems effectively. This will ensure smooth adoption and reduce resistance to technological change.

3. Public Awareness and Education:

Awareness campaigns should be conducted to educate taxpayers on the benefits of AI driven systems such as e-filing and online payment platforms. Proper sensitization will build trust, encourage voluntary compliance, and reduce fear or misconceptions about digital tax systems.

4. Policy and Regulatory Framework:

The government should establish clear policies and legal guidelines to regulate the use of AI in tax administration. These frameworks should promote transparency, ensure data privacy, and provide accountability in the use of AI tools.

5. Gradual and Inclusive Implementation:

AI integration should be carried out gradually, starting with pilot projects in major tax offices before being extended nationwide. This approach allows for testing, feedback collection, and continuous improvement while minimizing disruption to existing processes.

6. Collaboration with Technology Experts:

Tax authorities should collaborate with technology firms, universities, and AI professionals to design, implement, and maintain effective AI-based tax systems that meet Nigeria's unique administrative and infrastructural needs.

7. Incentives for Compliance:

Incentives such as tax discounts, recognition awards, or simplified filing processes can be introduced to motivate taxpayers to use AI-based platforms and comply voluntarily with tax regulations.

8. Encouraging Innovation and Positive Attitude:

The Federal Inland Revenue Service (FIRS) and related agencies should foster a culture that encourages innovation, teamwork, and openness to new technologies. Tax officials and taxpayers should be motivated through recognition and professional growth opportunities to embrace AI systems. A positive attitude and commitment to innovation will enhance efficiency and ensure the long-term success of AI-driven tax administration in Nigeria.

5.4 Suggestions for Further Studies

This research has provided insight into the role of Artificial Intelligence (AI) in improving tax compliance in Nigeria. However, there are still areas that future researchers can explore to expand on the findings of this study.

1.Comparative Studies Across States:

Researchers can examine the level of AI adoption and its impact on tax compliance across different states in Nigeria to identify regional variations and policy gaps.

2. Sectoral Focus:

Researchers can examine the use of AI in specific sectors such as oil and gas, manufacturing, or small and medium enterprises (SMEs) to understand how AI influences compliance differently across industries.

3. Longitudinal Research:

Researchers can employ a time-based (longitudinal) approach to assess how AI implementation affects tax compliance over several years, rather than relying on cross-sectional data.

4. Evaluation of Taxpayer Perception:

Researchers can focus more on taxpayers' attitudes, trust levels, and experiences with AI tools in the tax system, as these factors influence the success of digital compliance efforts.

5. Challenges of AI Adoption:

Researchers may also investigate the ethical, technical, and financial challenges facing the integration of AI in Nigeria's public sector, especially within tax authorities.

6. AI and Data Security:

Since data protection is crucial, future researchers could explore the relationship between AI use, data privacy, and taxpayer confidence in Nigeria's tax administration.

In summary, this study contributes to the understanding of how Artificial Intelligence can transform tax administration in Nigeria by promoting transparency, accountability, and improved revenue generation

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QUESTIONNAIRE

Department of Accounting,

Faculty of Management Sciences,

University of Benin,

Benin City.

Dear Respondent,

I am Otoikhila Oboh, a final-year student in the Department of Accounting, Faculty of Management Sciences, conducting a research titled "Artificial Intelligence (AI) and Tax Compliance in Nigeria."

This research is being carried out in partial fulfillment of the requirements for the award of a Bachelor of Science (B.Sc.) degree in Accounting. The purpose of this research is to examine how Artificial Intelligence (AI) can enhance tax compliance, reduce tax evasion, and improve the efficiency of tax administration in Nigeria.

Your participation is highly valuable to the success of this study. Please be assured that all information provided will be treated with strict confidentiality and will be used solely for academic purposes. Kindly respond honestly to all questions, as your input will help generate meaningful findings and recommendations.

Thank you for your time and cooperation.

Yours faithfully,

Otoikhila Oboh

(Researcher)

SECTION A: Demographic Information

Please tick (✓) the option that best describes you.

1. **Gender:**
   - ☐ Male
   - ☐ Female
2. **Age Bracket:**
   - ☐ 18–30 years
   - ☐ 31–45 years
   - ☐ 46–60 years
   - ☐ 60+ years
3. **Educational Level:**
   - ☐ Secondary School
   - ☐ Diploma/NCE
   - ☐ Bachelor's Degree
   - ☐ Postgraduate Degree
4. **Occupation:**
   - ☐ Taxpayer (Business Owner/Self-Employed)
   - ☐ Tax Official (Revenue Agency Staff)
5. **Years of Experience in Tax Matters:**
   - ☐ Less than 5 years
   - ☐ 5–10 years

☐ 11–20 years
☐ Above 20 years

SECTION B: Current Tax Compliance (TC)

Scale: **SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree**

S/N	Statement	SA	A	N	D	SD
1	I always file my tax returns on time.	☐	☐	☐	☐	☐
2	I accurately report my income and other taxable information.	☐	☐	☐	☐	☐
3	I am aware of penalties for non-compliance with tax regulations.	☐	☐	☐	☐	☐
4	Most taxpayers I know comply with tax filing requirements.	☐	☐	☐	☐	☐
5	Tax compliance is influenced by ease of filing and payment processes.	☐	☐	☐	☐	☐

SECTION C: Challenges of Tax Administration (CTA)

S/N	Statement	SA	A	N	D	SD
6	Tax procedures in Nigeria are too complex and difficult to follow.	☐	☐	☐	☐	☐
7	Corruption within tax agencies affects compliance levels.	☐	☐	☐	☐	☐
8	Lack of awareness about tax policies discourages compliance.	☐	☐	☐	☐	☐
9	Inadequate use of technology slows down tax administration.	☐	☐	☐	☐	☐
10	Tax-related information provided by authorities is not clear or accessible.	☐	☐	☐	☐	☐

SECTION D: Artificial Intelligence Adoption (AI)

S/N	Statement	SA	A	N	D	SD
11	I am aware of AI tools used in tax administration (e-filing, AI audits, chatbots, automated reminders, data matching).	☐	☐	☐	☐	☐
12	AI tools have the potential to reduce errors in tax filing and processing.	☐	☐	☐	☐	☐
13	AI can enhance monitoring and detection of tax evasion.	☐	☐	☐	☐	☐
14	The use of AI in tax administration reduces administrative costs.	☐	☐	☐	☐	☐
15	AI adoption can improve overall compliance levels among taxpayers.	☐	☐	☐	☐	☐
16	AI tools make tax procedures faster and more efficient.	☐	☐	☐	☐	☐

SECTION E: Strategies for Effective AI Integration (SAI)

S/N	Statement	SA	A	N	D	SD
17	Training of tax officials on AI tools is necessary for effective implementation.	☐	☐	☐	☐	☐
18	Public awareness campaigns on AI applications in tax administration will improve compliance.	☐	☐	☐	☐	☐
19	Integrating AI gradually alongside existing systems is more effective than sudden implementation.	☐	☐	☐	☐	☐
20	Clear policies and guidelines on AI use in tax processes are essential.	☐	☐	☐	☐	☐
21	Incentives for using AI-based tax platforms can increase taxpayer adoption.	☐	☐	☐	☐	☐