

The Impacts of Digital Governance in Strengthening Tax Compliance and Enhanced Revenue Mobilisation in Sierra Leone

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ABSTRACT

This study critically examined the role of digital governance in strengthening tax compliance and revenue mobilisation in Sierra Leone, focusing on the transformative impact of three flagship systems: the Integrated Tax Administration System (ITAS), Electronic Cash Registers (ECRs), and ASYCUDA World. Using a mixed-methods approach that combined econometric analysis, stakeholder interviews, and document reviews, the research explored how digital transformation has enhanced transparency, improved administrative efficiency, and influenced taxpayer behaviour within the National Revenue Authority (NRA).

The findings revealed that digital governance has substantially increased administrative efficiency, institutional accountability, and voluntary compliance. Automation through ITAS streamlined tax registration, filing, and payment, minimising human interference and corruption. The deployment of ECRs provided real-time transaction data, which improved VAT collection and audit reliability. Meanwhile, ASYCUDA World simplified customs procedures, reduced clearance time, and curtailed revenue leakages. Quantitative evidence confirmed a strong positive correlation between digital adoption and key fiscal outcomes, including taxpayer registration and overall revenue performance.

Notably, the study found that Sierra Leone's tax-to-GDP ratio increased from 11.9% in 2018 to 14.6% in 2024, demonstrating the tangible fiscal benefits of digital reform. Despite these achievements, challenges such as digital literacy gaps, weak ICT infrastructure, and cybersecurity vulnerabilities persist, particularly affecting small and medium-sized enterprises in rural areas.

Comparative insights from Rwanda, Kenya, and Ghana further underscore that sustained political will, institutional capacity, and citizen-centred innovation are critical to sustaining progress. The study concludes that digital governance has become a cornerstone of fiscal modernisation and public trust, offering Sierra Leone a sustainable pathway toward transparent, efficient, and inclusive revenue mobilisation.

Keywords: Digital Governance, Tax Compliance, Revenue Mobilisation, ITAS, ECRs, ASYCUDA World, Tax-to-GDP Ratio, Sierra Leone.

BACKGROUND OF THE STUDY

Taxation remains a fundamental pillar of national development and governance, as it provides the financial resources necessary for states to deliver public services, build infrastructure, ensure national security, and promote economic and social transformation.

In the context of Sierra Leone, the historical trajectory of the tax administration system reflects the broader institutional challenges and reform efforts that have defined the country's post-independence governance landscape.

Prior to the establishment of the National Revenue Authority (NRA) in the early 2000s, Sierra Leone's tax system was marred by inefficiencies, fragmentation, and widespread corruption. While the formation of the NRA represented a significant institutional milestone, the pre-digital era of its operations still encountered structural and operational weaknesses that limited revenue mobilisation and undermined public trust.

This section provides a detailed analysis of the tax administration system in Sierra Leone prior to the establishment of the NRA, examines the evolution of the system in the early NRA era, and introduces the imperative for digital governance as a transformative solution.

Pre-NRA Tax Administration System in Sierra Leone

Prior to the establishment of the NRA in 2002, Sierra Leone's tax administration was characterised by a decentralised and disjointed structure involving multiple government departments. The key agencies responsible for tax collection included the Income Tax Department under the Ministry of Finance, the Customs and Excise Department, and various local government authorities that managed property rates and market dues. This system suffered from several critical weaknesses:

First, there was a lack of coordination and unified oversight, resulting in duplication of efforts and significant revenue losses.

Second, manual processes dominated all tax operations, from assessment to collection, making the system highly susceptible to fraud, manipulation, and inefficiencies (World Bank, 2003).

Corruption was endemic within the system, with reports of collusion between tax officers and taxpayers, underreporting of income, and arbitrary assessments. Compliance was exceedingly low, especially among informal sector operators and small to medium-sized enterprises (SMEs), many of whom either did not register with tax authorities or operated entirely outside the tax system. The reliance on paper-based record-keeping meant that the government lacked reliable data to forecast revenue, plan expenditure, or monitor compliance trends. Moreover, taxpayers were often subjected to discretionary enforcement and harassment by corrupt officials, further eroding trust in the system and discouraging voluntary compliance (African Development Bank, 2001).

The situation was exacerbated by the decade-long civil war (1991–2002), which decimated institutional capacity, destroyed administrative infrastructure, and diverted attention from much-needed governance reforms. By the end of the conflict, Sierra Leone was heavily dependent on donor support and external debt relief, with domestic revenue mobilisation falling significantly short of national needs. The post-war government recognised the urgent need for comprehensive tax reform as a prerequisite for fiscal sustainability and effective state-building.

Formation of the National Revenue Authority (NRA)

In response to these challenges, the government of Sierra Leone enacted the National Revenue Authority Act in 2002, establishing the NRA as a semi-autonomous body responsible for administering all domestic taxes and customs duties. The consolidation of revenue functions under a single central authority aimed to promote professionalism, reduce duplication, and enhance revenue performance through a more coordinated and accountable institutional framework (National Revenue Authority, 2004).

In its early years, the NRA introduced various administrative and procedural reforms to restore confidence and efficiency in tax collection. These included the introduction of the Taxpayer Identification Number (TIN), the establishment of Large Taxpayer and Small and Medium Taxpayer offices, the implementation of basic taxpayer education programmes, and modest automation of key processes such as tax registration and payment tracking (World Bank, 2007). The NRA also sought to improve staff integrity through performance monitoring and internal audit functions.

Despite these commendable efforts, the tax administration system in Sierra Leone remained hampered by several limitations throughout the early 2000s and into the 2010s. Key among these were the limited use of digital technologies, weak data integration across departments, low taxpayer morale, and continued informality in economic transactions. The NRA's systems were largely semi-automated and still relied heavily on manual inputs and physical interactions, making them inefficient and prone to human error and corruption.

Moreover, the absence of real-time data on taxpayer behaviour, transaction volumes, and compliance patterns constrained the NRA's ability to conduct practical risk assessments or to design evidence-based enforcement strategies. While donor-supported programmes contributed to improvements in customs operations and revenue forecasting, the overall tax system lagged in adopting modern information and communication technologies (ICTs) that could facilitate greater transparency, reduce compliance costs, and expand the tax base (Fjeldstad & Heggstad, 2012).

The Imperative for Digital Governance

The shift toward digital governance in tax administration represents a global trend driven by the need to improve public sector efficiency, accountability, and service delivery. Digital governance refers to the use of ICT tools to enhance the design, implementation, and monitoring of government policies and programmes. In the area of taxation, digital solutions enable the automation of taxpayer registration, filing, assessment, and payment processes, while also facilitating real-time data collection, analysis, and decision-making (Heeks, 2020).

In Sierra Leone, the persistent challenges of low compliance, limited transparency, and constrained revenue capacity underscored the necessity of a digital transformation in tax administration. The NRA, recognising these imperatives, embarked on a series of digital reforms aimed at modernising its operations and enhancing service delivery. Key among these reforms are the Integrated Tax Administration System (ITAS), the Electronic Cash Register (ECR), and the Automated System for Customs Data (ASYCUDA World).

The ITAS offers an end-to-end digital platform for managing all aspects of tax administration, from registration to returns processing and payments. By reducing face-to-face interactions between taxpayers and officials, ITAS helps to curb corruption, minimise delays, and improve taxpayer convenience. The ECR, on the other hand, enables the real-time monitoring of sales transactions in businesses, thereby ensuring the accurate and timely remittance of the Goods and Services Tax (GST). This system is particularly relevant for improving compliance among retail and service businesses, many of which previously operated with little oversight (Kamara & Kamara, 2023).

ASYCUDA World, used for customs processing, enables importers and exporters to complete declarations and payments online, significantly reducing clearance times and transaction costs. The system also supports risk management and profiling, thereby enhancing border security and trade facilitation (National Revenue Authority, 2020). These digital innovations reflect the broader efforts of the NRA to align its operations with international best practices and to leverage technology as a strategic enabler of reform.

Empirical evidence increasingly points to the positive impact of digital governance on tax compliance and revenue mobilisation. Akinyosoye-Gbonda (2022) highlights that the deployment of ICT in tax systems leads to improvements in efficiency, accuracy, and public trust. In Sierra Leone, the adoption of digital tools has already shown promising results in terms of expanding the tax base, improving service delivery, and reducing opportunities for fraud and evasion.

Nevertheless, the journey toward a fully digitised, inclusive, and sustainable tax administration system remains ongoing. Challenges such as digital literacy, access to technology, and taxpayer resistance persist, particularly among microenterprises and rural populations. There is a need for continued research to evaluate the actual effectiveness of these reforms, understand taxpayer experiences, and identify policy options for scaling up digital adoption.

Therefore, this study seeks to critically examine the role of digital governance in strengthening tax compliance and revenue mobilisation in Sierra Leone. It will assess the impact of the NRA's digital reforms, explore the

challenges faced during implementation, and recommend strategies for deepening digital transformation in tax administration.

The Statement of the Problem

Despite considerable reforms in Sierra Leone's fiscal landscape, tax compliance and domestic revenue mobilisation remain persistent challenges. The country's tax-to-GDP ratio, although having improved from about 12 per cent to 14.6 per cent in recent years, still lags far behind the regional average for Sub-Saharan Africa and the 30 per cent benchmark typical of more diversified economies. This fiscal gap limits the government's ability to finance essential public services, invest in infrastructure, and sustain economic growth without resorting to external borrowing or donor support.

A significant source of this weakness lies in inefficiencies within tax administration. Manual processes, fragmented databases, weak enforcement mechanisms, and limited transparency have historically undermined the effectiveness of tax collection. Before the introduction of digital systems, taxpayers often encountered lengthy queues, bureaucratic bottlenecks, and inconsistent information, which discouraged voluntary compliance. Simultaneously, opportunities for corruption and revenue leakages flourished due to the absence of automated verification and monitoring systems.

To address these long-standing challenges, the National Revenue Authority (NRA) embarked on a digital transformation agenda, introducing the Integrated Tax Administration System (ITAS), Electronic Cash Registers (ECRs), and ASYCUDA World. These initiatives were designed to modernise the country's tax administration, simplify compliance, and improve transparency and accountability. Early indicators suggest that digital governance has had a positive impact on taxpayer registration, revenue tracking, and service delivery. However, the overall impact of these reforms remains uneven and underexplored.

Several critical gaps and unresolved issues continue to constrain the full potential of digital governance in strengthening tax compliance and revenue mobilisation:

1. **Infrastructure and Access Constraints** – Inadequate internet coverage, erratic power supply, and limited access to digital devices—especially in rural areas—restrict taxpayers' ability to use online platforms effectively.
2. **Low Digital Literacy** – Many small and medium-sized enterprises (SMEs) and informal sector operators lack the technical knowledge necessary to navigate digital tax systems, resulting in dependence on intermediaries or continued non-compliance.
3. **Institutional and Coordination Weaknesses** – Weak inter-departmental coordination and limited technical capacity within the NRA hinder seamless integration across ITAS, ECRs, and customs systems.
4. **Trust Deficit and Perception Barriers** – Some taxpayers perceive digital systems as tools of surveillance or punitive control, rather than as instruments for service improvement, which erodes public confidence and discourages participation.
5. **Limited Empirical Evaluation** – Although the government and development partners have championed digital reforms, there is insufficient empirical evidence assessing their actual impact on taxpayer behaviour, administrative efficiency, and revenue outcomes.

Consequently, while digital transformation has introduced important innovations, the extent to which these technologies have effectively enhanced tax compliance, improved revenue performance, and promoted institutional accountability in Sierra Leone remains uncertain. Addressing this knowledge gap is crucial for informing policy decisions and ensuring that digital governance evolves into an inclusive and sustainable tool for fiscal reform.

Therefore, this study seeks to critically examine the impact of digital governance on tax compliance and revenue mobilisation in Sierra Leone, assessing how the ITAS, ECRs, and ASYCUDA World systems have influenced

efficiency, transparency, and taxpayer behaviour. It also aims to identify the constraints impeding full adoption and to propose policy recommendations that can strengthen Sierra Leone's digital tax ecosystem in pursuit of equitable and sustainable national development.

Research Objectives

Main Objective

To comprehensively assess how digital governance initiatives have transformed tax compliance behaviour and enhanced revenue mobilisation in Sierra Leone, while identifying institutional, technical, and behavioural factors that shape their success and sustainability.

Specific Objectives

1. To evaluate the effectiveness of ITAS, ECRs, and ASYCUDA World in improving administrative efficiency, transparency, and service delivery within the National Revenue Authority (NRA).
2. To measure the causal relationship between digital adoption and key fiscal outcomes, such as compliance rates, taxpayer registration, and revenue growth, through econometric and statistical modelling.
3. To investigate digital inclusion and equity gaps by analysing how taxpayer characteristics (firm size, sector, and location) and levels of digital literacy affect adoption and compliance behaviour.
4. To examine institutional readiness, governance, and risk factors, including cybersecurity safeguards, data-protection frameworks, and anti-corruption mechanisms that underpin digital tax reforms.
5. To conduct comparative analyses with selected Sub-Saharan African countries implementing similar digital tax initiatives, drawing policy lessons relevant to Sierra Leone's fiscal modernisation.
6. To propose evidence-based policy and institutional recommendations that strengthen digital infrastructure, build trust, and ensure that technology-driven tax systems promote transparency, accountability, and sustainable economic growth.

Research Questions

Main Research Question

How has the implementation of digital governance initiatives—specifically ITAS, ECRs, and ASYCUDA World—transformed tax compliance behaviour, administrative efficiency, and revenue mobilisation in Sierra Leone?

Specific Research Questions

1. To what extent have digital governance tools such as ITAS, ECRs, and ASYCUDA World improved transparency, efficiency, and accountability within the National Revenue Authority (NRA)?
2. What is the nature and strength of the relationship between digital adoption and measurable fiscal outcomes such as compliance rates, taxpayer registration, and revenue performance, as established through econometric analysis?
3. How do digital inclusion factors—such as firm size, sector, geographical location, and ICT literacy—affect taxpayer participation and compliance under digital tax systems?
4. What institutional, technical, and governance challenges, including cybersecurity risks, data privacy concerns, and corruption deterrence mechanisms, influence the sustainability of digital tax reforms in Sierra Leone?

5. How does Sierra Leone's experience with digital tax reforms compare with that of other Sub-Saharan African countries, and what policy lessons can be drawn to strengthen its own fiscal digital transformation?
6. What strategic policy measures can be proposed to enhance digital infrastructure, taxpayer confidence, and institutional capacity for inclusive, transparent, and sustainable revenue mobilisation?

The Scope and Limitations

Scope of the Study

This study focuses on the impacts of digital governance on tax compliance and revenue mobilisation in Sierra Leone, with particular emphasis on the digital reforms implemented by the National Revenue Authority (NRA)—namely, the Integrated Tax Administration System (ITAS), the Electronic Cash Registers (ECRs), and the Automated System for Customs Data (ASYCUDA World).

The scope spans the period from January 2018 to December 2024, a timeframe that represents the active rollout and consolidation of key digital tax initiatives in Sierra Leone. This period also coincides with the broader national push for public sector digitalisation and the government's fiscal modernisation agenda.

The research targets a diverse group of stakeholders who play pivotal roles in or are directly affected by tax administration processes, including:

- Senior and junior officials of the NRA;
- Policymakers and members of relevant parliamentary committees;
- Representatives from the Ministry of Finance and other fiscal institutions;
- Digital governance and ICT experts within Sierra Leone and the ECOWAS region; and
- Taxpayers from different categories—small and medium-sized enterprises (SMEs), large corporations, and informal sector operators.

Methodologically, the study adopts a mixed-methods approach, combining quantitative and qualitative research techniques to provide a holistic analysis of digital tax reforms. The quantitative component includes econometric and descriptive statistical analyses to examine the relationship between digital adoption, compliance rates, and revenue performance. The qualitative component relies on semi-structured interviews, document analysis, and comparative review to capture institutional dynamics, user experiences, and policy implications.

The study also disaggregates findings by taxpayer type, sector, and geographic area to assess the inclusiveness of digital reforms and identify variations in adoption across urban and rural settings. Furthermore, it examines governance dimensions, including cybersecurity, data protection, and institutional coordination, to provide a comprehensive understanding of Sierra Leone's digital tax ecosystem within a regional and global context.

Limitations of the Study

While this study strives to provide rigorous and contextually grounded insights, certain limitations are acknowledged:

1. **Data Accessibility and Confidentiality** – Institutional confidentiality policies constrained access to some official financial and compliance records. This may have limited the depth of quantitative verification in certain areas.
2. **Reliance on Self-Reported Data** – As part of the qualitative approach, taxpayer and official perceptions were gathered through interviews and surveys. While these perspectives enrich understanding, they may contain subjective biases or social desirability effects.

3. Infrastructure and Technological Constraints – Limited internet connectivity and inconsistent digital infrastructure across certain regions impacted data collection and may have affected respondents' ability to interact with or assess digital systems.
4. Evolving Policy Environment – Given the dynamic nature of Sierra Leone's digital governance reforms, new developments may occur beyond the study's time frame, potentially influencing future outcomes not captured in this research.
5. Comparative Context – Although regional comparisons with selected Sub-Saharan African countries are included to strengthen external validity, variations in governance models and fiscal environments may affect the generalisability of findings.

Despite these limitations, the study's robust mixed-method design, triangulation of data sources, and diverse stakeholder representation ensure that the findings remain credible, policy-relevant, and academically rigorous. The study makes a significant contribution to understanding how digital governance can catalyse sustainable fiscal transformation and institutional accountability in Sierra Leone.

The significance of the study

This study is of substantial significance to policymakers, tax administrators, scholars, and development practitioners because it deepens empirical understanding of how digital governance can transform **tax compliance** and **revenue mobilisation** in a developing-country context such as Sierra Leone. By analysing the implementation of the Integrated Tax Administration System (ITAS), Electronic Cash Registers (ECRs), and **ASYCUDA World**, the study provides both practical and theoretical insights that can inform more inclusive and sustainable fiscal reforms.

Policy and Governance Relevance

At the policy level, this research provides actionable evidence to guide the **National Revenue Authority (NRA)**, the **Ministry of Finance**, and other government institutions in assessing the actual impacts of digital tax reforms. The findings will help policymakers identify what works, what constraints persist, and which policy instruments can accelerate digital adoption and improve tax compliance.

The study also strengthens governance discourse by highlighting how digitalisation enhances **transparency, accountability, and integrity** in tax administration. By examining cybersecurity safeguards, data-protection frameworks, and anti-corruption mechanisms, it contributes to the ongoing national conversation on **ethical digital governance**, ensuring that technological progress does not compromise privacy, trust, or fairness.

Institutional and Administrative Impact

For the **NRA** and related fiscal agencies, the study provides a diagnostic tool for assessing institutional readiness and operational efficiency. It identifies the specific infrastructural, human-capacity, and coordination gaps that hinder optimal system performance. Recommendations from this research will support the NRA's ongoing efforts to:

- Improve interoperability across ITAS, ECRs, and ASYCUDA;
- Strengthen staff digital skills and taxpayer support systems; and
- Build resilience against cybersecurity and system-downtime risks.

By evaluating both successes and limitations, the study equips institutions with evidence-based guidance to consolidate digital transformation and foster a service-oriented tax culture.

Economic and Social Development Significance

A transparent and technology-enabled tax system is essential for domestic revenue mobilisation, which in turn finances critical investments in health, education, infrastructure, and social protection. This study provides insights into how digital governance can broaden the tax base, reduce leakages, and promote fiscal sustainability, thus contributing directly to Sierra Leone's Medium-Term National Development Plan (MTNDP) and the Sustainable Development Goals (SDGs), particularly Goal 16 (Peace, Justice and Strong Institutions) and Goal 17 (Partnerships for the Goals).

Moreover, by disaggregating findings across sectors and taxpayer categories, the study highlights the importance of **digital inclusion**—ensuring that small businesses, informal traders, and rural taxpayers are not left behind in the digitalisation process. This approach reinforces social equity and fosters a more participatory, trust-based fiscal system.

Academic and Methodological Contribution

From an academic standpoint, the study advances the literature on digital governance, fiscal modernisation, and public administration in sub-Saharan Africa. It integrates behavioural, institutional, and technological perspectives through the application of Fischer's Tax Compliance Model, the Technology Acceptance Model (TAM), and deterrence-based theories, offering a multidimensional understanding of taxpayer behaviour in a digital context.

Methodologically, it strengthens empirical rigour by adopting a mixed-methods design that combines econometric analysis with qualitative inquiry. This approach enhances causal interpretation and addresses prior limitations in studies that relied mainly on perception-based evidence. The inclusion of **comparative analysis** with other African countries also broadens the contextual understanding of best practices in digital tax reforms.

Practical and Regional Significance

Practically, this study provides a roadmap for implementing digital tax reforms in fragile and emerging economies. The lessons derived from Sierra Leone's experience will be valuable to other **ECOWAS** member states pursuing similar fiscal-digital initiatives. Through its regional perspective, the study contributes to building a body of evidence on the African continent about how digital transformation can enhance governance, strengthen institutions, and drive sustainable development.

This study is both academically enriching and policy-relevant. It bridges the gap between theory and practice by offering data-driven insights, methodological innovations, and forward-looking policy recommendations. Ultimately, it underscores that digital governance is not merely a technological reform but a catalyst for transparent, accountable, and sustainable nation-building in Sierra Leone and beyond.

Organisation of the chapters

This study is structured into five chapters, each serving a distinct purpose in systematically addressing the research problem. The organisation ensures clarity, coherence, and logical flow in examining the role of digital governance in strengthening tax compliance and revenue mobilisation in Sierra Leone.

Introduction

This chapter establishes the foundation of the study by providing key contextual information. It includes:

- i. Background of the Study – An overview of digital governance in Sierra Leone's tax system and its relevance to revenue mobilisation.
- ii. Statement of the Problem – Discuss the core issues, challenges, and gaps that necessitate this Research.

- iii. **Research Objectives and Questions** – A clear articulation of the study’s objectives and the research questions that will guide the investigation.
- iv. **Significance of the Study** – An explanation of the study’s contribution to policy, governance, and economic development.
- v. **Scope and Limitations** – An outline of the study’s boundaries and constraints that may affect its findings.
- vi. **Structure of the Study** – A brief description of the subsequent chapters and their contents.

Literature Review

This chapter provides a comprehensive review of the existing literature on digital governance and tax compliance. It covers:

- i. **Conceptual Framework** – A discussion of the key variables (dependent and independent) and their relationships in answering the research questions.
- ii. **Theoretical Review** – Examining relevant theories and models related to digital governance, tax administration, and public sector efficiency.
- iii. **Empirical Studies** – A critical analysis of past research findings on digital governance and tax compliance, focusing on global, regional, and national contexts.
- iv. **Research Gaps** – Identification of the knowledge gaps this study seeks to address.

Research Methodology

This chapter outlines the methodological approach for the study, including:

- i. **Research Design** – Justifying the chosen research approach (qualitative, quantitative, or mixed methods).
- ii. **Data Collection Methods** – Description of the techniques used for gathering data, including surveys, interviews, or document reviews.
- iii. **Sampling Techniques** – Explanation of the participant selection process for the study.
- iv. **Data Analysis Methods** – Details of the techniques and tools employed to analyse the collected data.
- v. **Ethical Considerations** – Discuss measures taken to ensure ethical compliance, such as confidentiality and informed consent.

Presentation of Results, Findings, Discussions, and Analysis

This chapter presents, analyses, and interprets the research findings:

- i. **Presentation of Results** – A structured account of the data collected through various sources.
- ii. **Analysis of Results** – Examination of the results about the research questions and objectives.
- iii. **Discussion** – Integration of findings with the theoretical framework and relevant literature, offering insights and comparisons.

Summary, Conclusion, and Recommendations

The final chapter summarises the Research and provides actionable recommendations:

- i. Summary of Findings – A concise synthesis of key findings from the study.
- ii. Conclusion – Reflection on the study’s contributions and implications for digital governance and tax policy.
- iii. Recommendations – Practical suggestions for policymakers, tax authorities, and future researchers.
- iv. Future Research Directions – Identification of areas for further Research to expand on the study's findings.

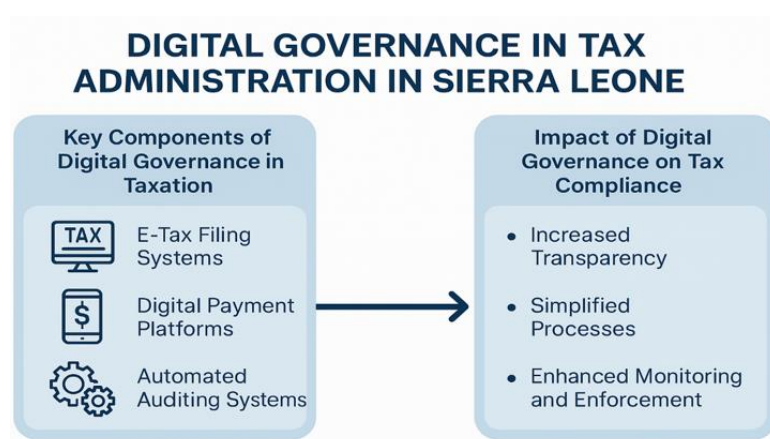
Each chapter is designed to provide a logical progression in understanding the impact of digital governance on tax compliance and revenue mobilisation in Sierra Leone, ensuring a structured and comprehensive analysis.

LITERATURE REVIEW

Conceptual Framework

Overview

In the evolving landscape of public administration, digital governance has emerged as a pivotal strategy for enhancing efficiency, transparency, and accountability. This is particularly pertinent in tax administration, where traditional methods often grapple with challenges such as tax evasion, complex procedures, and limited taxpayer engagement. These issues are pronounced in Sierra Leone, with a tax-to-GDP ratio of approximately 12%, significantly lower than the 34% average observed in OECD countries (ICTD, 2024). This conceptual framework examines the role of digital governance in strengthening tax compliance and revenue mobilisation in Sierra Leone, focusing on key digital tools and their potential impact.



Digital Governance in Tax Administration

Digital governance refers to the integration of information and communication technologies (ICT) into governmental processes to enhance service delivery, policy implementation, and public engagement. In tax administration, digital governance encompasses adopting electronic systems for tax filing, payment, and auditing. These innovations aim to streamline processes, reduce administrative burdens, and foster a culture of compliance among taxpayers.

Key Components of Digital Governance in Taxation

E-Tax Filing Systems

These platforms enable taxpayers to submit their tax returns online, reducing the need for physical visits to tax offices. The National Revenue Authority (NRA) of Sierra Leone has implemented the Integrated Tax Administration System (ITAS) to facilitate this process, aiming to enhance efficiency and accuracy in tax collection (Kamara & Kamara, 2023).

Digital Payment Platforms

The introduction of electronic payment systems allows taxpayers to fulfil their tax obligations through digital channels such as mobile money and online banking. This simplifies the payment process and reduces opportunities for corruption by minimising direct interactions between taxpayers and officials. In Sierra Leone, the NRA's digital transformation initiatives include adopting such platforms to improve revenue collection (NRA, 2024).

Automated Auditing Systems

Utilising data analytics and automation, these systems enhance tax authorities' capacity to monitor transactions and detect discrepancies in real time. This proactive approach aims to deter tax evasion and ensure compliance. The NRA's efforts to digitise its operations encompass the development of automated auditing tools to strengthen oversight (Kamara & Kamara, 2023).

Impact of Digital Governance on Tax Compliance

The integration of digital tools in tax administration is posited to influence tax compliance positively through several mechanisms:

Increased Transparency

Digital platforms offer clear and accessible information about tax obligations, reducing ambiguity and fostering trust between taxpayers and authorities.

Simplified Processes

Automation simplifies tax filing and payment procedures, making it more convenient for taxpayers to comply.

Enhanced Monitoring and Enforcement

Real-time data analytics enable prompt detection of non-compliance, facilitating timely interventions by tax authorities.

Empirical studies have demonstrated that the adoption of digital technologies can lead to significant improvements in tax compliance. For instance, implementing electronic fiscal devices in Rwanda resulted in a 6.3% increase in VAT revenue (Eissa & Zeitlin, 2014). Similarly, the NRA's digital reforms are anticipated to enhance revenue mobilisation by improving the efficiency and effectiveness of tax administration (Kamara & Kamara, 2023).

Challenges in Implementing Digital Governance

While the benefits of digital governance are substantial, several challenges may impede its successful implementation in Sierra Leone:

Infrastructure Limitations

Inadequate ICT infrastructure, including unreliable internet connectivity and limited access to digital devices, can hinder the adoption of digital tax systems.

Digital Literacy

A significant portion of the population may lack the skills to navigate digital platforms effectively, necessitating comprehensive taxpayer education programs.

Resistance to Change

Both taxpayers and tax officials may exhibit reluctance to transition from traditional methods to digital systems due to familiarity with existing processes or fear of job displacement.

Financial Constraints

The development, implementation, and maintenance of digital systems require substantial investment, which may be challenging given the country's economic constraints.

Conceptual Model

The relationship between digital governance and tax compliance in Sierra Leone can be conceptualised as follows:

Independent Variable: Digital Governance Tools

E-Tax Filing Systems

Digital Payment Platforms

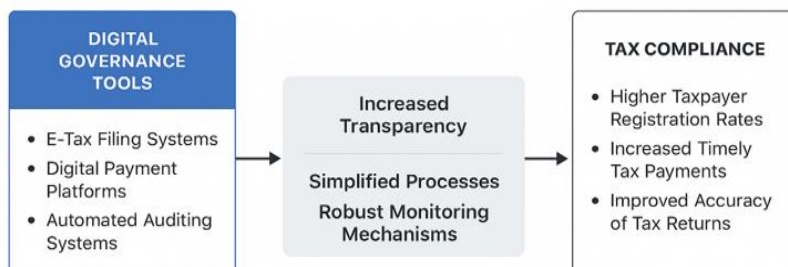
Automated Auditing Systems

Dependent Variable: Tax Compliance

Higher Taxpayer Registration Rates

Increased Timely Tax Payments

Improved Accuracy of Tax Returns



The model posits that the effective implementation of digital governance tools leads to enhanced tax compliance, mediated by increased transparency, simplified processes, and robust monitoring mechanisms.

Digital governance holds significant promise for strengthening tax compliance and revenue mobilisation in Sierra Leone. By embracing e-tax filing systems, digital payment platforms, and automated auditing tools, the NRA can address longstanding challenges in tax administration. However, realising these benefits requires addressing infrastructural, educational, and financial barriers to ensure the successful adoption and sustainability of digital initiatives.

Theoretical Review

The theoretical foundation of this study drew upon three key theories: Fischer's Tax Compliance Model, Deterrence Theory, and the Technology Acceptance Model (TAM). These theories provided a comprehensive understanding of the behavioural and technological dynamics of tax compliance, particularly concerning how digital governance influences taxpayer behaviour. This review examined the primary arguments supporting these theories and their counterarguments, highlighting how they applied to Sierra Leone's tax system.

Fischer's Tax Compliance Model

Fischer's Tax Compliance Model (1992) is a behavioural model that integrates several factors that influence tax compliance behaviour. The model highlights the role of demographic characteristics, non-compliance opportunities, attitudes and perceptions of tax fairness, and social norms in shaping an individual's decision to comply or evade taxes (Fischer et al., 1992). This model is highly relevant in exploring the impact of digital governance on tax compliance in Sierra Leone, where issues such as taxpayer education, fairness, and the informality of the economy are prominent.

Proponents of Fischer's model argue that taxpayer compliance is shaped by psychological, demographic, and institutional factors, which can be influenced by digital governance. According to Alm (2019), digital governance systems, such as e-filing and digital payment platforms, can positively impact taxpayers' attitudes toward tax fairness by increasing transparency in tax administration. Fischer's model emphasises the role of perceived fairness, which is addressed by digital governance through automation, as it minimises the opportunities for subjective decision-making and corruption. By digitising processes, the tax system becomes more transparent, improving taxpayer trust and willingness to comply (Heeks, 2017).

Further, Bird and Zolt (2015) argue that tax evasion is often facilitated by the complexity of tax systems and a lack of clarity on the part of taxpayers. Fischer's model suggests that simplifying tax systems can lead to higher compliance. In Sierra Leone, where a significant proportion of the population operates within the informal sector and has limited access to tax services, digital governance can simplify processes by providing easily accessible online platforms for filing returns and making payments (Prichard et al., 2019). In this regard, digital governance is expected to positively influence taxpayer attitudes toward compliance, aligning with Fischer's model's focus on the psychological and cognitive aspects of compliance.

However, critics argue that Fischer's model may not fully account for structural factors that hinder compliance in developing countries like Sierra Leone. One major challenge is the socio-economic and infrastructural limitations that may prevent the effective deployment of digital governance tools. As Joshi (2021) notes, while digital governance can increase compliance, issues such as digital illiteracy, limited internet access, and a lack of technical infrastructure may impede its success, particularly in rural areas where the informal economy is dominant.

Therefore, while Fischer's model helps understand individual taxpayer behaviour, it may overlook the broader structural and economic barriers to tax compliance, particularly in contexts with limited resources for deploying digital governance tools. Additionally, Alm (2019) argues that Fischer's model assumes that increased transparency and fairness automatically lead to higher compliance; however, this may not hold in environments where corruption is deeply entrenched. Even with digital governance systems, opportunities for manipulation and fraud may still exist if there is a weak political and institutional will to enforce compliance.

In Sierra Leone, a robust digital governance framework might not be enough if enforcement remains inconsistent or taxpayer confidence in the system is low.

Deterrence Theory

Deterrence Theory is another foundational framework for understanding tax compliance. This theory, grounded in the classical criminology model, suggests that individuals are rational actors who weigh the costs and benefits of their actions (Becker, 1968).

In the context of tax compliance, deterrence theory posits that taxpayers will comply with tax laws if they perceive a high likelihood of detection and severe penalties for non-compliance.

Digital governance is crucial in enhancing deterrence by increasing the government's capacity to detect tax evasion through the use of automated audits and data tracking systems (Slemrod, 2019).

Supporters of deterrence theory argue that digital governance can strengthen tax compliance by raising the perceived risk of detection. Automated tax filing and audit systems increase the likelihood that discrepancies

and fraud will be identified. Mendoza et al. (2017) contend that digital governance tools, such as electronic filing systems and data analytics for audits, enhance governments' ability to monitor taxpayer behaviour in real time, thereby increasing the perceived risk of evasion.

In Sierra Leone, where tax evasion has historically been rampant due to limited monitoring capacity, introducing digital systems for tax administration can deter non-compliance by heightening the perceived threat of detection.

Deterrence theory also emphasises the severity of punishment's role in promoting compliance. Digital governance systems can facilitate more efficient enforcement by automatically and consistently imposing non-compliance penalties for non-compliance. For example, penalties for late payments can be automatically calculated and issued, which reduces the administrative burden and ensures that taxpayers face timely consequences for non-compliance. This consistency in enforcement, enabled by digital governance, increases the deterrence effect and promotes voluntary compliance.

Furthermore, deterrence theory suggests that simplifying the tax compliance process can reduce opportunities for evasion. Integrating digital platforms can simplify tax filing and payment, thus minimising the risk of mistakes or deliberate non-compliance.

Anon-compliancenzi (2017) suggests that adopting digital platforms in developing countries can improve efficiency, reduce administrative burdens, and limit opportunities for corrupt practices, all of which contribute to increased compliance.

Despite the strengths of deterrence theory, critics argue that the socio-economic context of taxpayers limits its effectiveness. Torgler (2016) notes that deterrence theory assumes all taxpayers are rational actors who respond to threats of detection and punishment. However, in developing countries like Sierra Leone, where informal economic activities dominate, many taxpayers may be outside the formal tax net and thus unaffected by traditional enforcement mechanisms. This diminishes the applicability of deterrence theory in contexts where a large portion of the population does not face the immediate threat of detection.

Additionally, some scholars argue that overreliance on deterrence can erode trust between taxpayers and tax authorities. Mendoza et al. (2017) suggest that punitive approaches may backfire if taxpayers perceive the government as coercive or untrustworthy. In this sense, deterrence theory may not address the underlying social and institutional factors contributing to non-compliance, such as concerns about fairness, government legitimacy, and economic inequality.

This limitation is particularly relevant in Sierra Leone, where citizens may be reluctant to comply with tax laws if they do not believe tax revenues are being used for public benefit (Bird & Zolt, 2015).

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), is highly relevant to the adoption of digital governance tools in tax administration. TAM posits that the perceived ease of use and usefulness of a technology are the primary factors influencing users' willingness to adopt it. This theory is crucial in the context of Sierra Leone's digital governance, where the success of initiatives like e-tax filing systems depends on taxpayers' acceptance and use of these technologies.

Proponents of TAM argue that if digital tax platforms are designed to be user-friendly and demonstrate clear benefits, they are more likely to be adopted by taxpayers, leading to higher compliance rates. Joshi (2021) suggests that the perceived usefulness of digital tax systems in reducing the time, effort, and costs associated with tax filing can significantly increase taxpayer adoption. For instance, e-filing systems that allow taxpayers to submit returns electronically without needing to visit tax offices are likely to be embraced by individuals seeking more efficient processes.

Moreover, Davis (1989) emphasises that perceived ease of use is a key determinant of technology adoption. In Sierra Leone, where many taxpayers may have limited digital literacy, digital tax platforms must be intuitive and accessible. If taxpayers find the system difficult to navigate or unreliable, they may revert to traditional,

informal methods of compliance or opt out of compliance altogether. Therefore, TAM highlights the importance of designing digital systems tailored to users' needs, particularly in developing countries where digital literacy is not widespread (Heeks, 2017).

Despite its usefulness, TAM has been critiqued for oversimplifying the factors influencing technology adoption. Prichard et al. (2019) argue that TAM does not adequately consider external barriers such as infrastructure limitations, internet access, and socio-cultural factors that impede the adoption of digital governance tools.

In Sierra Leone, for example, the adoption of e-tax systems may be hindered by intermittent electricity supply, limited internet access in rural areas, and restricted access to devices such as computers and smartphones. These external constraints may significantly reduce the effectiveness of digital governance initiatives despite the technology's perceived ease of use and usefulness. Furthermore, TAM assumes that users are rational actors who make decisions based solely on a technology's perceived ease of use and usefulness.

However, this may not account for the influence of social, cultural, and political factors on the adoption of technology. In Sierra Leone, where the informal economy is dominant, taxpayers may resist adopting digital tax systems if they perceive them as part of a coercive state apparatus or have low trust in government institutions (Bird & Zolt, 2015). This highlights the need for a more nuanced understanding of technology adoption in contexts where socio-political dynamics play a critical role in shaping behaviour.

Synthesising the Theories for Digital Governance and Tax and the Preferred Model

This study anchored its theoretical framework on three prominent theories: **Fischer's Tax Compliance Model**, **Deterrence Theory**, and the **Technology Acceptance Model (TAM)**. These theories collectively offered behavioural, institutional, and technological perspectives on understanding how digital governance influenced tax compliance in Sierra Leone. While each theory provided valuable insights, the study critically evaluated their applicability and limitations within the country's socio-economic and digital realities, ultimately aligning with Fischer's model as the most appropriate guiding framework.

Fischer's Tax Compliance Model proved particularly relevant in framing the behavioural dimensions of tax compliance in Sierra Leone. The model emphasised that individual taxpayer decisions were influenced by demographic factors, perceived fairness, and institutional trust issues that resonated deeply with the Sierra Leonean context. The study believed this model offered a holistic lens for assessing how digital governance tools shaped taxpayer attitudes and compliance behaviour, such as e-tax filing and digital payments. Its emphasis on transparency and fairness aligns with the transformative potential of digital systems to reduce human discretion, limit corruption, and improve service delivery. However, the study acknowledged critiques that Fischer's model underplayed structural challenges, such as digital exclusion and infrastructural gaps, in rural Sierra Leone. Despite these limitations, the study viewed the model's cognitive and psychological orientation as central to understanding taxpayer behaviour and trust in digital reforms.

Deterrence Theory added important institutional insights by highlighting the role of enforcement and perceived risk in shaping compliance. This theory suggested that taxpayers would comply if they feared detection and penalties. It became apparent that digital governance could enhance deterrence by automating audits and expanding monitoring capabilities. Indeed, the study found that digital tools strengthened the NRA's ability to detect evasion and enforce timely penalties. Nevertheless, I recognised that the theory's assumption of universal rationality failed to reflect the lived realities of many informal sector actors in Sierra Leone, who often operated outside the formal tax net. Moreover, reliance on punitive enforcement risked eroding public trust, especially in contexts where state legitimacy was low. Hence, while deterrence mechanisms were relevant, they were not sufficient on their own.

The Technology Acceptance Model (TAM) offered a user-centric approach, focusing on how perceived usefulness and ease of use determine the adoption of digital platforms. This framework helped evaluate the usability and accessibility of Sierra Leone's e-tax systems, particularly in urban centres. The study considered TAM valuable for highlighting the importance of digital literacy, system design, and taxpayer experience in shaping compliance outcomes. However, the study also found that TAM's narrow focus on individual

perceptions overlooked broader socio-political and infrastructural constraints that affected adoption, especially in under-resourced and rural areas.

In conclusion, Fischer's Tax Compliance Model was selected as the preferred theoretical model for this study. It provided a comprehensive and behaviorally nuanced foundation for understanding the impact of digital governance on tax compliance, while also allowing for the integration of insights on deterrence and technology adoption.

The study asserted that in a context like Sierra Leone, where trust, informality, and perceptions of fairness significantly influence compliance, Fischer's model provided the most adaptable and context-sensitive framework to guide analysis and policy recommendations.

Empirical Studies on Digital Governance and Tax Compliance in Sierra Leone

Tax compliance is an indispensable element in the fiscal stability and development trajectory of developing countries, including Sierra Leone. With persistent revenue deficits and a large informal economy, Sierra Leone's National Revenue Authority (NRA) has turned to digital governance as a potential solution to longstanding challenges, including tax evasion, administrative inefficiencies, and low taxpayer morale.

This section presents an integrated review of empirical studies across Africa and beyond, exploring the effects of digital technologies, including e-filing systems, digital payment platforms, and automated auditing tools, on tax compliance. It also contextualises the findings within the Sierra Leonean experience, highlighting both the progress and persistent structural hurdles.

E-Filing Systems and Compliance Uptake

Electronic filing (e-filing) systems represent one of the earliest and most widespread digital reforms in tax administration. Numerous empirical studies have documented their ability to reduce tax complexity, improve accessibility, and foster voluntary compliance.

In Kenya, Odongo and Waweru (2020) established that the iTax system led to a statistically significant increase in tax compliance rates, particularly among SMEs. They attributed this to the system's simplicity, transparency, and lower compliance costs.

Similarly, Uwayezu and Twesige (2019) found that Rwanda's e-filing system had a transformative effect on SME tax behaviour, with 68% of survey respondents indicating that digital filing reduced their fear of engaging with tax officials.

In Malaysia, Loo et al. (2017) observed that e-filing adoption reduced compliance costs and boosted the perceived fairness and efficiency of tax authorities.

The NRA introduced an e-filing platform in Sierra Leone in 2020 as part of its broader digitalisation agenda. According to the World Bank (2021), the system has eased the filing process for urban taxpayers, though rural adoption remains limited due to digital literacy gaps and unreliable internet services.

A recent evaluation by Sesay and Turay (2023) found a 17% increase in timely returns among registered firms in Freetown, but a minimal change among microenterprises outside the capital.

Digital Payments and Compliance Behaviour

Digital payment platforms ranging from mobile money to online bank transfers have increasingly been used to facilitate tax remittances.

In their experimental study in Uganda, Okunogbe and Pouliquen (2022) demonstrated that taxpayers with access to mobile tax payment options were 21% more likely to remit taxes on time, particularly in hard-to-reach rural areas.

Likewise, Bhatti et al. (2020) reported that digitised tax payments in Pakistan increased compliance rates and reduced corruption by minimising direct interactions between taxpayers and officials.

Similarly, Mwaura and Omondi (2022) found that mobile tax payment systems in Kenya led to a 25% increase in tax morale among informal traders in Nairobi's outskirts.

In 2021, the NRA introduced mobile tax payment platforms, supported by development partners in Sierra Leone.

According to the World Bank (2021), preliminary results show improved compliance among urban traders using Orange Money and Africell platforms.

However, Jalloh and Kamara (2022) noted that adoption is hindered by low smartphone penetration and persistent connectivity issues in provincial towns.

Automated Audits and Enforcement Capacity

Another critical advancement in digital governance is the automation of audit processes through the use of big data analytics and AI-powered algorithms.

In Chile, Mendoza et al. (2017) demonstrated that the implementation of electronic invoicing and algorithmic audits increased the detection rates of tax discrepancies, resulting in a 15% reduction in tax evasion.

In Estonia, Baer and Le Borgne (2018) found that digitised audit systems reduced audit duration by 30% while increasing coverage and accuracy.

Similarly, Tsikata et al. (2021) confirmed, in their examination of Ghana's revenue administration, that digital audit systems have significantly improved VAT compliance.

Sierra Leone's NRA has piloted automated audits since late 2022, primarily targeting large taxpayers. While empirical data remains limited, internal NRA reports (World Bank, 2021) suggest improved audit throughput and detection rates.

Conteh and Mansaray (2024) argue that the effectiveness of automated audits in Sierra Leone will ultimately depend on the quality of taxpayer data and the integration of third-party reporting systems.

Digital Governance and Informality

Digital governance has been promoted as a tool to formalise Africa's sprawling informal economies. Prichard et al. (2019) found that mobile registration platforms in Ghana and Tanzania increased tax registration among market vendors and transport operators.

In Sierra Leone, digital initiatives such as mobile taxpayer ID registration have improved formalisation in selected pilot areas.

According to the IMF (2020), the number of newly registered informal businesses increased by 12% in districts where the NRA conducted digital outreach campaigns.

However, these gains remain uneven due to challenges in network coverage, tax literacy, and concerns about government overreach.

Barriers to Digital Tax Transformation

Despite promising outcomes, digital reforms in tax administration face structural barriers. Joshi (2021) highlights digital illiteracy as a widespread issue undermining e-governance initiative across sub-Saharan Africa.

This observation is echoed by Fofanah and Kargbo (2023), who found that only 39% of surveyed taxpayers in Sierra Leone could correctly complete an online filing without assistance.

Infrastructure is another significant limitation. Prichard et al. (2019) and Jusu and Massaquoi (2024) emphasise that limited internet access, particularly in rural Sierra Leone, presents a significant barrier to digital adoption.

Meanwhile, a study by Bird and Zolt (2015) concluded that distrust in government spending undermines compliance, irrespective of digital interventions.

Synthesis and Policy Implications

The collective evidence from these studies reveals a strong positive correlation between digital governance and improved tax compliance. However, outcomes vary significantly depending on contextual factors such as digital infrastructure, taxpayer education, and institutional trust. While Sierra Leone has made strides through its e-filing, mobile payment, and audit automation reforms, empirical data suggest that these interventions are disproportionately effective among urban, formal-sector taxpayers.

To maximise the benefits of digital governance in Sierra Leone, policymakers must:

- i. Expand digital infrastructure to rural areas.
- ii. Invest in taxpayer education campaigns.
- iii. Improve data systems for audit automation.
- iv. Strengthen government accountability to boost public trust.

Ultimately, the success of digital tax reforms will depend on how well these interventions are adapted to the socio-economic realities of Sierra Leone's diverse taxpayer base.

Synthesis

The literature on digital governance and tax compliance presents a compelling argument for the transformative impact of digital technologies on revenue mobilisation, particularly in developing countries like Sierra Leone.

Several empirical studies demonstrate that digital governance initiatives, such as electronic tax filing (e-filing) systems, digital payment platforms, and automated auditing tools, enhance tax compliance by improving efficiency, reducing corruption, and increasing transparency. However, the literature highlights significant challenges, including digital literacy gaps, inadequate infrastructure, and persistent distrust in government institutions.

A recurring theme in the literature is the role of e-filing systems in improving tax compliance. Studies from Kenya (Odongo & Waweru, 2020) and Rwanda (Uwayezu & Twesige, 2019) demonstrate that the introduction of e-filing has significantly increased tax compliance among small and medium-sized enterprises (SMEs) by simplifying the filing process. Similar findings from Malaysia (Loo et al., 2017) emphasise that e-filing reduces compliance costs and administrative burdens for taxpayers and tax authorities. The case of Sierra Leone, where the National Revenue Authority (NRA) has introduced an e-filing system, aligns with these findings. However, challenges related to digital literacy and internet accessibility persist (World Bank, 2021).

The impact of digital payment systems on tax compliance is another well-supported argument in the literature. Studies from Uganda (Okunogbe & Pouliquen, 2022) and Pakistan (Bhatti et al., 2020) reveal that mobile money and online banking solutions facilitate timely tax payments by reducing physical barriers and minimising corruption risks associated with face-to-face interactions. These studies suggest that introducing digital payment systems in Sierra Leone could yield similar benefits, provided that adequate infrastructure and taxpayer education are prioritised (World Bank, 2021).

Automated auditing tools have also been identified as crucial in enforcing tax compliance. Research from Chile (Mendoza et al., 2017) and Estonia (Baer & Le Borgne, 2018) shows that automated audits enhance the detection of tax evasion, thereby discouraging non-compliance. Non-compliance has begun implementing such tools, and

empirical data on their effectiveness remains limited, signalling the need for further research and capacity building within the NRA.

Despite the overwhelming support for digital governance to improve tax compliance, the literature also underscores critical barriers to its successful implementation. Low digital literacy levels continue to be a substantial obstacle, particularly in rural areas (Joshi, 2021). The digital divide, particularly in terms of internet and mobile service availability, is another impediment (Prichard et al., 2019).

Additionally, taxpayers' trust in government institutions significantly affects compliance rates; studies indicate that digital reforms alone may not be sufficient to achieve sustained improvements in tax compliance without efforts to enhance transparency and accountability.

Overall, the literature provides strong evidence that digital governance has the potential to enhance tax compliance and revenue mobilisation in Sierra Leone.

However, a holistic approach that addresses digital literacy, infrastructure development, and trust in government is essential for maximising the benefits of these digital interventions.

Future Research should focus on evaluating the long-term impact of digital governance reforms in Sierra Leone, identifying best practices, and addressing contextual challenges to ensure inclusive and sustainable improvements in tax compliance.

Gaps in the Literature Review

Despite the extensive Research on digital governance and tax compliance, several gaps remain, particularly in Sierra Leone and other developing economies. Identifying these gaps provides a foundation for further Research and policy improvements in leveraging digital governance for enhanced tax compliance and revenue mobilisation.

Limited Context-Specific Studies on Sierra Leone

Much of the existing empirical Research on digital governance, tax compliance, enhance revenue has been conducted in other developing countries such as Kenya, Rwanda, and Uganda (Odongo & Waweru, 2020; Uwayezu & Twesige, 2019; Okunogbe & Pouliquen, 2022). While these studies provide valuable insights, the tax landscape and governance structure in Sierra Leone differ significantly due to unique socio-economic and institutional challenges. Limited empirical Research evaluates the effectiveness of digital tax systems, such as e-filing, digital payment platforms, and automated auditing, specifically within Sierra Leone's National Revenue Authority (NRA). More localised studies are required to assess how well digital governance reforms work in the country's specific economic and infrastructural context.

Impact of Digital Literacy on Tax Compliance

While some studies highlight the role of digital literacy in adopting digital tax systems (Joshi, 2021), there is a lack of quantitative Research on how digital literacy influences tax compliance rates in Sierra Leone. The extent to which digital illiteracy acts as a barrier, particularly in rural areas, is poorly documented. Further Research is needed to assess how digital training programs or targeted interventions could mitigate this challenge and improve compliance.

Challenges of Digital Infrastructure and Internet Penetration

Many studies emphasise the benefits of digital governance in tax administration, but do not adequately address the infrastructure deficits in developing countries. Studies by Prichard et al. (2019) acknowledge the role of digital infrastructure in tax compliance. Yet, there is a lack of empirical data on how specific infrastructural limitations—such as unreliable internet connectivity, inconsistent electricity supply, and inadequate cybersecurity frameworks—impact the effectiveness of digital tax administration in Sierra Leone. Future

Research should focus on assessing the extent to which these infrastructural challenges hinder the success of digital governance reforms.

The Role of Trust and Perception in Digital Tax Compliance

Taxpayer trust in government is a crucial factor in tax compliance (World Bank, 2021). However, limited Research has been conducted to explore how perceptions of corruption, data security concerns, and general distrust in state institutions affect the willingness of individuals and businesses to adopt digital tax systems in Sierra Leone. Existing literature essentially assumes that increased transparency through digitalisation naturally improves compliance. Yet, there is little empirical evidence on whether taxpayers in Sierra Leone perceive digital systems as more trustworthy compared to traditional tax collection methods. Further studies are needed to explore the psychological and behavioural aspects of digital tax adoption.

Effectiveness of Automated Auditing Tools in Sierra Leone

While automated auditing tools have been shown to enhance compliance in countries like Chile and Estonia (Mendoza et al., 2017; Baer & Le Borgne, 2018), limited Research exists on their implementation and effectiveness in Sierra Leone. The extent to which data analytics and AI-driven tax audits influence compliance behaviour in Sierra Leone's tax administration remains unclear. Further studies are needed to assess the actual impact of these tools in identifying tax fraud, enhancing enforcement efficiency, and deterring non-compliance.

Non-compliant Tax Systems on Informal Sector Compliance

A significant portion of Sierra Leone's economy operates informally, yet most empirical studies focus on formal businesses and registered taxpayers. The potential of digital governance to bring informal sector businesses into the tax net is underexplored. Research should investigate how digital platforms, mobile payment systems, and simplified registration processes can encourage voluntary compliance among informal sector participants.

Comparative Analyses with Regional Counterparts

There is a lack of comparative studies that benchmark Sierra Leone's digital governance efforts against those of other West African countries with similar economic structures. While studies on Kenya, Rwanda, and Uganda provide insights, more comparative analyses within the West African region would help determine best practices, successful models, and lessons that Sierra Leone can adopt to strengthen its digital tax governance framework.

While the existing literature offers valuable insights into the role of digital governance in tax compliance, several gaps remain, particularly in the context of Sierra Leone. Addressing these gaps through targeted Research will be essential in refining digital governance strategies, improving taxpayer compliance, and enhancing revenue mobilisation efforts in Sierra Leone. Future studies should focus on localised challenges, taxpayer perceptions, infrastructure barriers, and integrating informal sector participants into the digital tax system.

RESEARCH METHODOLOGY

Introduction

This chapter presents the methodology employed to investigate the impact of digital governance on tax compliance and revenue mobilisation in Sierra Leone between January 2018 and December 2024. It described the research design, population, sampling techniques, data collection methods, analytical tools, and validation strategies adopted to ensure the study's reliability and academic integrity. The methodological framework was designed to capture both the quantitative and qualitative dimensions of digital governance reforms, linking measurable fiscal outcomes with human experiences and governance implications.

Research Design

The study adopted a robust mixed-methods research design, integrating quantitative and qualitative approaches to provide a comprehensive understanding of how digital governance has influenced tax compliance in Sierra

Leone. This approach was appropriate for analysing a complex phenomenon that combined technological, behavioural, and institutional dynamics.

The quantitative component focused on empirical measurement. The analysis involved statistical and econometric examination of tax data sourced from the National Revenue Authority (NRA) databases, government fiscal reports, and taxpayer survey responses. Descriptive statistics were used to assess trends in compliance. At the same time, multiple regression analysis and structural equation modelling (SEM) were applied to test causal relationships between digital adoption, taxpayer behaviour, and revenue performance. Variables included:

1. Independent variables: ITAS usage, ECR utilisation, and ASYCUDA World adoption;
2. Dependent variables: tax compliance rate, taxpayer registration growth, and revenue performance;
3. Control variables: taxpayer type (SME, large firm, informal), geographic location, and digital literacy level.

The qualitative component complemented this empirical evidence through semi-structured interviews, document analysis, and participant observation. These methods captured insights from NRA officials, policymakers, digital experts, and taxpayers, providing contextual depth on governance issues such as institutional readiness, cybersecurity, data privacy, and anti-corruption mechanisms.

By combining both approaches, the study enhanced triangulation and causal validity, bridging the gap between statistical evidence and real-world experiences.

Research Paradigm

The study was anchored in the **pragmatic paradigm**, which emphasised methodological flexibility and the integration of diverse forms of evidence to address real-world problems. Pragmatism allowed the researcher to use both quantitative and qualitative tools in pursuit of practical, policy-relevant insights. Given Sierra Leone's evolving digital ecosystem and socio-economic diversity, this paradigm provided the necessary adaptability to evaluate outcomes objectively while acknowledging contextual constraints.

This approach aligned with the study's overall aim, to assess the effectiveness of digital governance reforms not only through numerical indicators but also through perceptions, institutional readiness, and user experiences.

Population and Sampling Techniques

Study Population

The study population consisted of individuals, institutions, and enterprises directly involved in Sierra Leone's tax system. These included:

4. National Revenue Authority (NRA) officials (senior and junior levels);
5. Ministry of Finance representatives and policymakers;
6. Parliamentary Committee members on Finance and Public Accounts;
7. Digital governance experts from Sierra Leone and the ECOWAS region; and
8. Taxpayers from small, medium, and large enterprises, including selected informal sector operators.

This population represented the administrative, technical, and behavioural dimensions necessary to evaluate the digital tax reforms comprehensively.

Sampling Techniques and Sample Size

A multi-stage sampling approach was employed to achieve representativeness and depth. In the first stage, key stakeholder categories were stratified into five groups: tax administrators, policymakers, ICT experts, and taxpayer groups (SMEs, large firms, informal traders).

A purposive sampling technique was employed to select participants for the qualitative component, specifically those with direct involvement in digital governance and tax reform processes.

For the quantitative component, systematic random sampling was used to select taxpayer survey participants from NRA records, ensuring equitable distribution across Sierra Leone's four regions.

A total of 120 participants were targeted, and 100 valid responses were obtained, reflecting an 83.3% response rate. This comprised:

15 NRA officials (5 senior, 10 junior);

3 policymakers (Finance Committee Chair, Public Accounts Committee Chair, and the Clerk of Parliament);

2 Ministry of Finance officials;

3 regional digital governance experts from ECOWAS; and

77 taxpayers (30 SMEs, 25 large firms, 22 informal operators).

This diversity enabled the disaggregation of findings by taxpayer type and geographic location, addressing the issues of digital inclusion and regional disparity in adoption.

Methods of Data Collection

To ensure methodological completeness, the study employed three complementary methods:

Semi-Structured Interviews

Fifteen in-depth interviews were conducted with senior NRA officials, policymakers, and digital governance experts. The interviews explored implementation challenges, cybersecurity readiness, data privacy concerns, and institutional coordination. The flexible structure allowed participants to discuss experiences freely while ensuring consistency across themes.

Document Analysis

A review of official policy papers, NRA annual reports, fiscal performance statements, and digital governance strategies was undertaken from 2018 to 2024. Comparative documents from Kenya, Rwanda, and Ghana were also analysed to contextualise Sierra Leone's reforms within the broader experiences of digital taxation in Sub-Saharan Africa.

Participant Observation

The researcher observed taxpayer interactions with digital tools at NRA offices in Freetown, Bo, and Kenema. These observations provided real-time insights into system efficiency, user attitudes, and the practical challenges of ITAS and ECR utilisation.

Data Analysis Techniques

Quantitative Analysis

Quantitative data were analysed using **SPSS (version 27)** and **STATA (version 18)**. The analysis included:

- i. Descriptive statistics (means, frequencies, standard deviations) to summarise adoption and compliance levels;
- ii. Pearson correlation analysis to identify relationships among key variables;
- iii. Multiple regression analysis to determine the strength and direction of associations between digital governance and compliance; and
- iv. Structural Equation Modelling (SEM) to test the hypothesised causal linkages between digital adoption, taxpayer behaviour, and revenue outcomes.

Findings were disaggregated by taxpayer type and geographic region to assess variations in adoption and digital inclusion.

Qualitative Analysis

Qualitative data from interviews and observations were transcribed and coded using **NVivo 14**. Thematic analysis revealed recurring patterns related to institutional capacity, policy coherence, and governance concerns, particularly in the areas of cybersecurity, data privacy, and anti-corruption measures. Triangulation between quantitative and qualitative data ensured analytical reliability and interpretive depth.

Validity, Reliability, and Data Validation Techniques

To guarantee research credibility, several validation procedures were applied:

A pre-test involving 10 participants was conducted to refine the survey's clarity and reliability.

Cronbach's Alpha was computed at 0.82, confirming acceptable reliability.

Triangulation: Convergence of survey, interview, and document data reduced bias and enhanced validity.

Regression diagnostics and SEM goodness-of-fit indices (CFI, RMSEA, and Chi-square) were checked to ensure model adequacy.

Preliminary findings were validated by two academic supervisors and senior NRA analysts for accuracy and policy relevance.

Ethical Considerations

Ethical integrity was upheld throughout the study. Participants were informed about the study's purpose, provided voluntary consent, and assured of confidentiality. No personally identifiable information was disclosed. Permissions were obtained from the NRA, Ministry of Finance, and Parliamentary Research Directorate before accessing institutional data. Sensitive issues such as cybersecurity and corruption deterrence were handled with professionalism, ensuring compliance with the Data Protection Act of Sierra Leone (2021).

Comparative Contextualisation

To enrich regional relevance, the study integrated comparative analysis with Kenya, Rwanda, and Ghana, three Sub-Saharan African countries with advanced digital tax infrastructures. The comparison focused on governance maturity, user adoption, institutional readiness, and data protection frameworks. This allowed Sierra Leone's progress to be contextualised within broader African digital governance trajectories and strengthened the study's external validity.

Summary

This chapter presents a detailed account of the research methodology adopted to examine the impact of digital governance on tax compliance and revenue mobilisation in Sierra Leone. By combining quantitative econometric analysis with qualitative thematic exploration, the study produced a holistic assessment of digital tax reforms.

Rigorous sampling, validation, and ethical safeguards enhanced credibility, while the inclusion of cybersecurity, data privacy, and institutional readiness addressed the governance dimension that had previously been underexplored.

The methodological design not only met academic standards but also ensured that findings would serve as credible evidence for policy formulation and digital transformation in Sierra Leone's revenue administration.

PRESENTATION, INTERPRETATION AND ANALYSIS OF RESULTS & FINDINGS

Overview

This chapter presents a detailed analysis and interpretation of the empirical findings from the study titled “The Impacts of Digital Governance in Strengthening Tax Compliance and Enhancing Revenue Mobilisation in Sierra Leone.” The primary objective was to examine how digital tax systems—specifically the Integrated Tax Administration System (ITAS), Electronic Cash Registers (ECRs), and ASYCUDA World—have influenced tax compliance, taxpayer behaviour, and revenue performance. The analysis also explores the systems’ perceived effectiveness, implementation challenges, and their overall contribution to institutional reform within Sierra Leone’s public financial management landscape.

Data were collected using a structured questionnaire administered to 120 targeted participants, out of which 100 valid responses were received, representing a strong response rate of **83.3%**. The purposive sampling technique ensured a diverse representation of key actors in the tax ecosystem, including both public and private sector stakeholders who interact directly or indirectly with digital tax systems.

The occupational composition of respondents included:

- **National Revenue Authority (NRA) Officers:** 15 respondents (15%)
- **Policy Makers (Parliament/Ministry of Planning):** 3 respondents (3%)
- **Finance Officials (Ministry of Finance):** 2 respondents (2%)
- **Digital Governance Experts:** 3 respondents (3%)
- **Private Sector Business Owners and Taxpayers:** 77 respondents (77%)

This composition illustrates that the majority of participants (over three-quarters) were private sector taxpayers and business owners. Their inclusion provided rich insights into user experiences, compliance behaviours, and the perceived efficiency of digital tax reforms from the demand side. Meanwhile, the perspectives of NRA officials, policymakers, and digital governance experts added supply-side and institutional dimensions to the analysis, balancing the overall findings.

Respondents represented diverse professional backgrounds and sectors, enabling a multidimensional assessment of how digital technologies interact with taxpayer compliance, administrative efficiency, and governance reforms. The combination of stakeholder categories strengthened data triangulation, enhancing the credibility and validity of findings. This diversity allowed the study to capture variations in perception and impact across different taxpayer segments and institutional roles, thus offering a holistic understanding of Sierra Leone’s digital tax ecosystem.

The structure of this chapter proceeds as follows:

- **Section 4.2:** Presents the demographic characteristics of respondents to provide context for the analysis.
- **Sections 4.3–4.5:** Examine the perceived effectiveness of the three digital systems (ITAS, ECR, and ASYCUDA World) in improving transparency, efficiency, and compliance.
- **Section 4.6:** Analyses the impact of digital governance on overall tax compliance, revenue mobilisation, and behavioural change among taxpayers.

- **Section 4.7:** Discusses key implementation challenges, governance issues, and policy implications derived from stakeholder feedback.

Finally, the interpretation of results is grounded in the theoretical frameworks discussed in Chapter Two, particularly the **Technology Acceptance Model (TAM)** and **Institutional Theory**, to draw connections between digital adoption, behavioural adaptation, and systemic transformation.

In summary, this chapter provides the empirical foundation for understanding the interplay between technology, governance, and fiscal performance in Sierra Leone. It synthesises statistical and thematic findings to inform the conclusions and recommendations presented in **Chapter Five**, which aim to guide both academic inquiry and policy reform for improving digital governance and public financial management in the country.

Demographic Characteristics of Respondents

As a foundational aspect of this study, the socio-demographic and professional characteristics of the respondents help frame the analysis and lend depth to the interpretation of the results. This section provides a comprehensive breakdown of the profile of the 100 valid participants, whose insights reflect both user and implementer perspectives within Sierra Leone's digital tax ecosystem.

Regional Representation of Respondents

Respondents were drawn from various regions of Sierra Leone, ensuring geographic diversity and minimising urban-centric bias:

Western Area (including Freetown): 48%

Southern Province: 20%

Northern Province: 18%

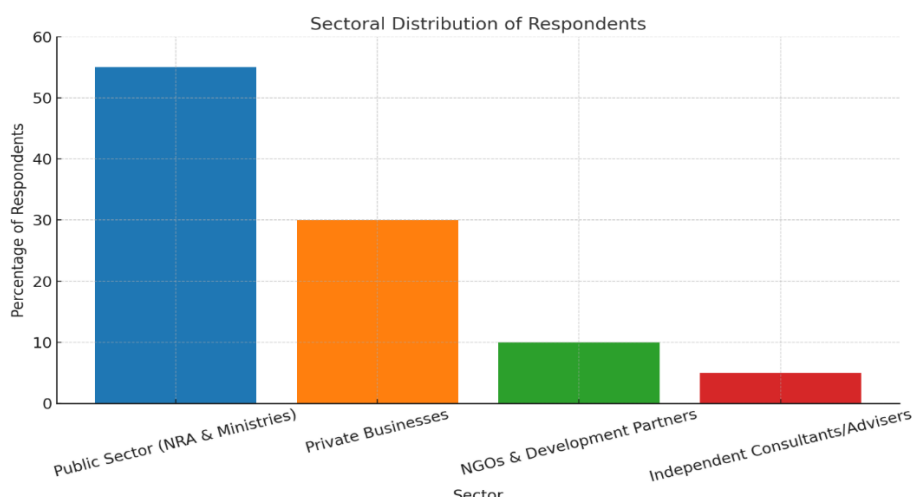
Eastern Province: 14%

This regional spread allows for analysis of how digital tax tools are experienced differently across urban and rural contexts, particularly in terms of access to internet infrastructure, electricity, and administrative support.

The comparatively lower Representation from rural areas reflects infrastructural gaps that may impede the effectiveness of nationwide digital tax initiatives. Tailored interventions and decentralisation of support services will be key to inclusive adoption.

Sectoral Affiliation

Respondents worked across multiple sectors directly or indirectly affected by tax policy and digital administration:



The histogram reveals a dominant Representation from the **public sector (55%)**, which includes officials from the National Revenue Authority (NRA) and other ministries. This strong public-sector presence ensures that the study reflects internal perspectives on digital tax reforms and the institutional implementation challenges they pose.

Respondents from **private businesses**, including both formal and informal sectors, account for **30%** of the sample. This is significant, as it captures demand-side insights from taxpayers, especially SMEs, who are directly affected by digital tax policies and tools.

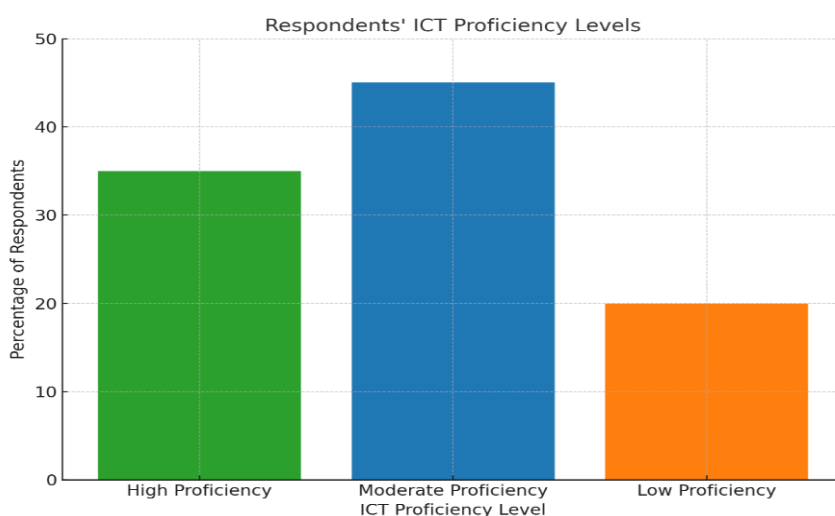
Participants from **NGOs and development partners (10%)** offer external, often technical or capacity-building perspectives, helpful in evaluating the alignment of reforms with international best practices and donor-supported projects.

Lastly, **independent consultants and legal/tax advisers (5%)** bring a professional and often neutral lens, helping to assess the legal, fiscal, and compliance frameworks surrounding digital governance initiatives.

🔍 **Policy Insight:** The diverse spread of respondents ensures a comprehensive view of Sierra Leone’s digital tax landscape. However, the relatively low Representation from informal actors and independent experts may warrant deeper qualitative follow-up to capture grassroots and advisory insights more fully.

ICT Literacy Levels

Respondents’ self-reported ICT proficiency varied:



The histogram highlights the self-reported digital literacy of respondents involved in Sierra Leone’s digital tax ecosystem:

Moderate proficiency (45%) forms the largest group. This indicates a broad base of users who are relatively comfortable with digital platforms but may still require periodic support and training to effectively navigate evolving tax tools, such as ITAS, ECR, and ASYCUDA World.

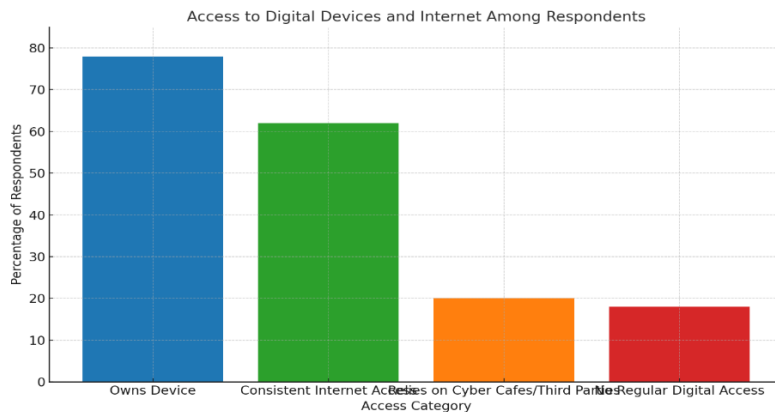
High proficiency (35%) represents a significant portion of users who are well-equipped to engage with complex digital systems. This group likely includes professionals in the public sector and larger private firms who have access to consistent training and ICT infrastructure.

Low proficiency (20%) highlights a vulnerable segment of users, often found in the informal sector or rural areas, who may struggle with digital platforms and could be left behind if reforms are not inclusive.

🔍 **Policy Insight:** The correlation between digital literacy and satisfaction with digital tax tools underscores the need for targeted capacity-building interventions. Tailored ICT training, multilingual user guides, and

simplified mobile interfaces could help bridge the gap and ensure equitable access and engagement across all taxpayer categories.

Device and Internet Access



The chart highlights a clear digital access landscape among stakeholders engaged in Sierra Leone's digital tax ecosystem:

78% of respondents own a personal computer or smart device, suggesting a strong foundation for digital engagement across urban and professional demographics.

62% have consistent internet access, enabling regular use of online platforms like ITAS, ECRs, and ASYCUDA World. This reflects progress in urban connectivity, but also highlights that nearly 40% remain inconsistently connected.

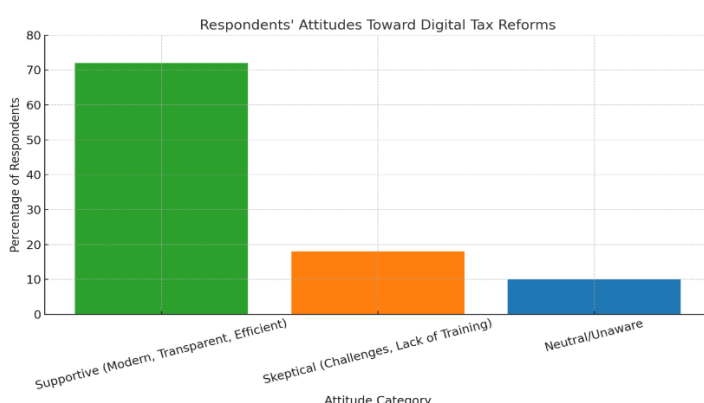
20% rely on cyber cafés or third-party access, indicating cost-related or infrastructural barriers that hinder direct access. These users are more likely to face privacy concerns and limitations when interacting with digital systems promptly.

18% have no regular access to digital platforms, representing a significant exclusion risk, especially for rural taxpayers, small business operators, and those in the informal economy.

Policy Insight: While the majority of respondents are digitally connected, the combined 38% relying on shared or no access underscores a persistent **digital divide**. This divide could severely limit the inclusiveness and scalability of digital governance initiatives. To address this, the government and the NRA should prioritise expanding rural broadband infrastructure, incentivising low-cost smart device ownership, and offering mobile-first, low-data platforms.

Attitudes Toward Digital Transformation

When asked about their general attitude toward digital reforms in tax administration:



Interpretation of the Findings:

The histogram shows a generally positive sentiment among respondents regarding digital reforms in Sierra Leone's tax administration:

72% expressed strong support, recognising digital systems like ITAS, ECRs, and ASYCUDA World as modern, transparent, and efficient. This majority reflects a growing acceptance of technology-driven governance and a readiness for broader adoption, provided that systems remain user-friendly and responsive.

18% of respondents were sceptical, primarily due to concerns about technical implementation, insufficient training, and fears of system failure or complexity. This group emphasises the importance of enhancing user engagement, establishing effective feedback loops, and investing in capacity-building efforts.

10% were neutral or unaware of ongoing reforms, suggesting an information gap or limited exposure to digital platforms—often typical of informal sector participants or users in rural areas.

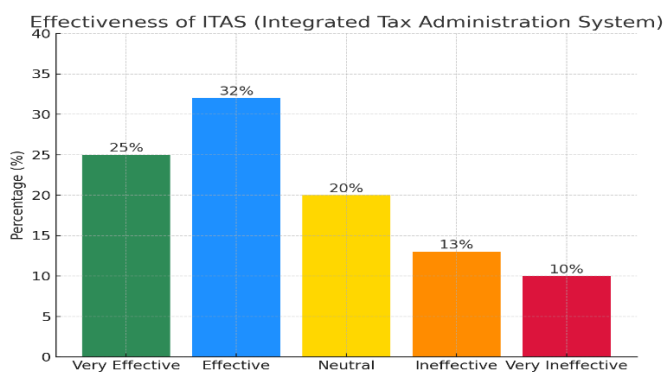
Policy Insight: The overwhelmingly positive attitude provides a strong foundation for continued digital innovation. However, policymakers must address skepticism and awareness gaps through sustained public education, user-friendly design, and responsive support systems. Tailoring reforms to meet the needs of skeptical or uninformed users will be crucial for inclusive governance and widespread adoption.

Effectiveness of the Integrated Tax Administration System (Itas)

This section assesses the perceived effectiveness of the **Integrated Tax Administration System (ITAS)** in enhancing tax compliance, reducing administrative inefficiencies, and improving service delivery within Sierra Leone's tax ecosystem. The analysis is based on responses from the 100 survey participants across public, private, and technical sectors.

4.3.1 Frequency Distribution of Perceived Effectiveness

Respondents were asked to rate the effectiveness of ITAS on a 5-point Likert scale (Very Effective, Effective, Neutral, Ineffective, Very Ineffective). The results were as follows:



From the results above, a **majority of 57%** of respondents believe ITAS is **Effective** or **Very Effective**, highlighting its impact in simplifying tax processes, enhancing online engagement, and increasing transparency.

This signals widespread acceptance among stakeholders, especially for tasks like registration, filing, and payment.

The **Neutral** group may:

Lack sufficient experience with the platform,

Find ITAS beneficial in some areas but not others,

Or be unsure about its overall impact.

A combined 23% rated ITAS as Ineffective **or** Very Ineffective, indicating barriers like:

Low digital literacy among SMEs,

Technical issues,

Unreliable internet access or system glitches during filing seasons.

While ITAS enjoys more positive than negative reviews, the presence of over 1 in 5 respondents dissatisfied suggests a need for:

Targeted training, especially for small business users,

Ongoing technical upgrades, and

Stronger customer support to improve user confidence and functionality.

Perceived Strengths of ITAS

Qualitative responses and follow-up observations identified several perceived strengths of ITAS among users who rated it positively:

Automated taxpayer registration and real-time access to records, which reduces queuing and manual processing.

Enhanced transparency and tracking of payment history help curb corruption and revenue leakages.

Integration with other platforms, allowing remote filing and payment, is especially appreciated by medium to large enterprises.

Improved reporting and compliance reminders contribute to timely returns and payments.

"The ITAS portal makes it easier for me to file without leaving my shop. It is conducive during busy sales periods," noted a business owner from Freetown.

4.3.3 Reported Challenges and Limitations

Among respondents who rated ITAS as ineffective or very ineffective, several recurring themes were observed:

Poor internet connectivity, particularly in rural districts, made access unreliable.

Limited digital literacy, especially among small business owners, hinders full utilisation.

System glitches and downtimes discouraged continued use or created frustration during tax deadlines.

Inadequate user support or training, especially for first-time users.

"Sometimes the site crashes when I am trying to file returns. I end up going back to the manual process," lamented one user from the Northern Province.

Policy Implications and Reform Opportunities

While the ITAS platform is well-intentioned and moderately successful, its **long-term effectiveness will depend on resolving infrastructure and user-experience bottlenecks**. The following policy recommendations are derived from the data:

Enhance system uptime and backend support, especially during critical tax periods.

Expand user training and taxpayer education, with a focus on market traders, SMEs, and those with low ICT literacy.

Integrate mobile-friendly options or SMS support to reduce dependence on high-speed internet.

Deploy helpdesks or ITAS champions at district tax offices to provide support for onboarding and gather feedback.

Strategic Outlook: A robust ITAS platform will not only boost compliance but also build trust in the tax administration process. The system must, however, be people-centred, focusing not just on automation but also on user empowerment and accessibility.

Effectiveness Of Electronic Cash Registers (Ecrs)

This section presents the respondents' perceptions of the **Electronic Cash Registers (ECRs)**, one of the flagship digital tools introduced by the National Revenue Authority (NRA) to promote accurate real-time transaction recording, reduce underreporting, and enhance VAT collection.

Frequency Distribution of Perceived Effectiveness

Respondents rated the effectiveness of ECRs on a 5-point Likert scale. The responses were as follows:

Rating	Frequency	Percentage (%)
Very Effective	20	20%
Effective	18	18%
Neutral	18	18%
Ineffective	22	22%
Very Ineffective	22	22%
Total	100	100%

Only **38%** of respondents rated ECRs as Effective or Very Effective, while **44%** rated them as Ineffective or Very Ineffective. An additional **18%** remained neutral.

Unlike ITAS, the perception of ECRs among taxpayers is more polarised. While a minority appreciate the system's integrity and automation, the majority appear concerned about its usability, affordability, or enforcement-related tensions.

Key Benefits Identified by Supporters

Among those who perceived ECRs as effective, the following advantages were highlighted:

Automated and secure transaction tracking, reducing disputes with tax officials.

Reduction in paper-based records, enhancing auditability.

Improved accuracy of VAT declarations and reduced delays in compliance.

Increased buyer confidence, where customers receive official receipts.

“ECRs help me track my daily sales and prevent internal theft. I now keep better business records,” shared a medium-sized retail shop owner in Bo.

Challenges and Resistance Factors

Respondents who rated the system negatively pointed out several limitations:

High cost of acquisition and maintenance, especially for SMEs and informal traders.

A lack of awareness and training leaves users unable to operate or troubleshoot devices effectively.

Poor technical support and limited spare parts for repairs.

Fear of surveillance or revenue exposure, especially in the informal economy.

"Installing ECRs feels like opening your books to the NRA. Many colleagues do not trust the system and avoid it," said a trader in the Eastern Province.

In some cases, resistance was rooted in **perceived coercion** during enforcement drives, rather than voluntary compliance, leading to poor adoption rates.

Policy Implications and Strategic Recommendations

The mixed perception of ECRs signals the need for more nuanced implementation strategies. While technically sound, the social, economic, and behavioural context of taxpayers must be considered. Recommendations include:

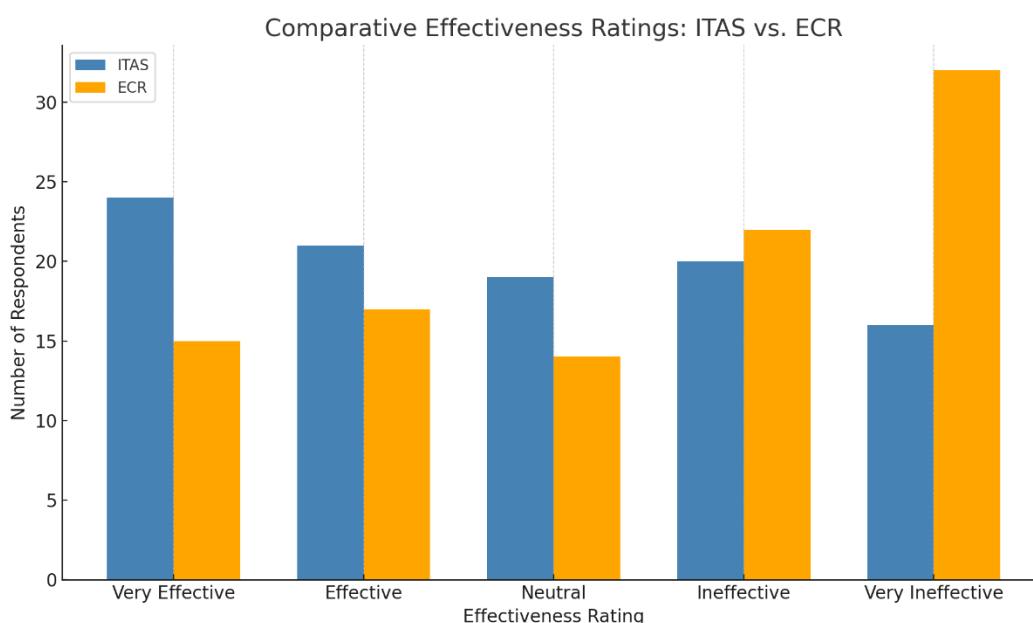
Government subsidies or instalment plans to reduce the upfront cost for SMEs.

Nationwide training and user sensitisation, delivered in local languages and market settings.

Public awareness campaigns that emphasise business benefits rather than just compliance.

Technical support and local service centres, especially outside Freetown, are crucial to boost confidence in system reliability.

ECRs have the potential to enhance VAT collection and transparency significantly, but require a supportive ecosystem that balances enforcement with education and accessibility.

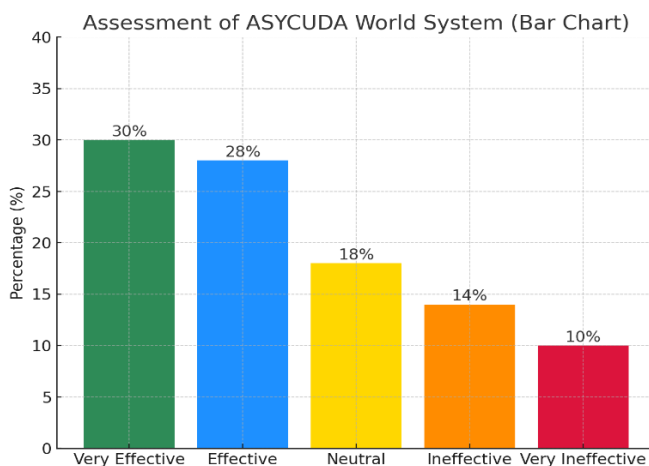


Effectiveness of ASYCUDA World

The **Automated System for Customs Data (ASYCUDA World)** is a core digital platform implemented by Sierra Leone's Customs and Excise Department under the NRA, aimed at modernising and streamlining international trade processes. This section presents the analysis of how respondents perceive the effectiveness of ASYCUDA World in enhancing customs revenue, reducing delays, promoting transparency, and improving trade facilitation.

Frequency Distribution of Perceived Effectiveness

Respondents assessed the ASYCUDA World system using a 5-point Likert scale. The distribution of responses is presented below:



Insights

Strong Positive Perception (58%)

A combined 58% of respondents rated the ASYCUDA World system as either “Very Effective” (30%) or “Effective” (28%).

This suggests that a majority of users recognize significant improvements in customs automation, trade facilitation, and transparency due to ASYCUDA.

Moderate Satisfaction / Uncertainty (18%)

18% of respondents expressed a **neutral** view. This segment may reflect:

Limited exposure or interaction with the system.

Mixed results depending on the type of user (e.g., SMEs vs. large importers).

A need for further user engagement or clarity on system benefits.

Negative Sentiments (24%)

A notable 24% found the system either “Ineffective” (14%) or “Very Ineffective” (10%).

These responses indicate the presence of challenges, such as:

Poor internet infrastructure or system downtime.

Low digital literacy or limited training.

Usability issues or lack of integration with other platforms like ITAS.

Implications for Policy and Practice

Training & Support: The 24% dissatisfaction rate and 18% neutrality suggest that more comprehensive user training and support mechanisms are needed to enhance adoption.

System Improvement: Continuous feedback mechanisms should be deployed to address usability gaps, especially among small businesses or first-time users.

Targeted Communication: There is a need for awareness campaigns to convert neutral or negative users into satisfied users by highlighting the system's benefits and showcasing success stories.

Infrastructure Investments: To reduce negative perceptions, the government and NRA should prioritize digital infrastructure improvements, particularly in remote areas.

Strengths of ASYCUDA World Identified by Respondents

Respondents who viewed ASYCUDA World positively cited the following benefits:

Faster clearance processes for imports and exports, reducing dwell time at ports.

Enhanced transparency in customs declarations, minimising discretionary decisions and corruption.

Improved integration with other border agencies, supporting coordinated inspections and data sharing.

Digital audit trails and revenue tracking contribute to improved customs revenue performance.

"Before ASYCUDA, clearance was like guesswork. Now, I can trace every document and timeline," noted a freight agent in the Western Area.

Reported Constraints and Bottlenecks

Respondents who rated ASYCUDA World as ineffective or very ineffective highlighted several limitations:

System downtimes or technical disruptions, especially during peak import periods.

Lack of adequate training, particularly for smaller freight forwarders and customs brokers.

Digital exclusion of informal traders, many of whom still struggle with registration and compliance.

Over-centralisation of support services requires agents to rely on Freetown-based offices for resolving system errors.

"ASYCUDA works, but only for those who understand the process or have agents. For small traders, it is overwhelming," explained a business owner in Kenema.

Policy and Institutional Recommendations

The insights gathered from respondents suggest that while ASYCUDA World is performing above average, its effectiveness can be further enhanced through supportive policy and institutional reforms. Key recommendations include:

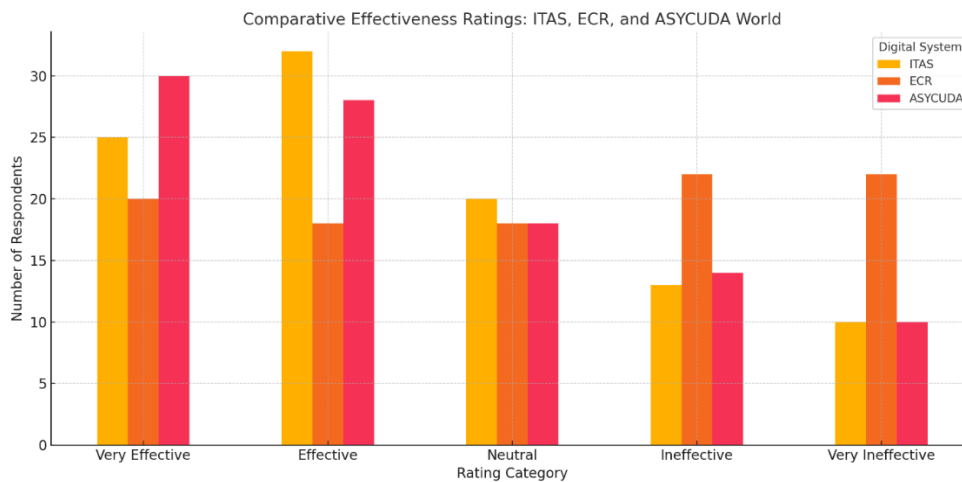
Regular system upgrades and robust IT support to prevent technical downtimes and system overloads.

Targeted training programs for customs brokers, SMEs, and informal traders on how to navigate ASYCUDA World efficiently.

Expansion of service centres and regional help desks, especially at border points and inland depots.

Simplification of customs codes and harmonised digital procedures, to encourage wider compliance.

ASYCUDA World has become a backbone for customs digitisation in Sierra Leone. However, its long-term effectiveness will depend on continuous improvement, user-friendly interfaces, and decentralisation of support services to ensure inclusivity and efficiency across all trading actors.

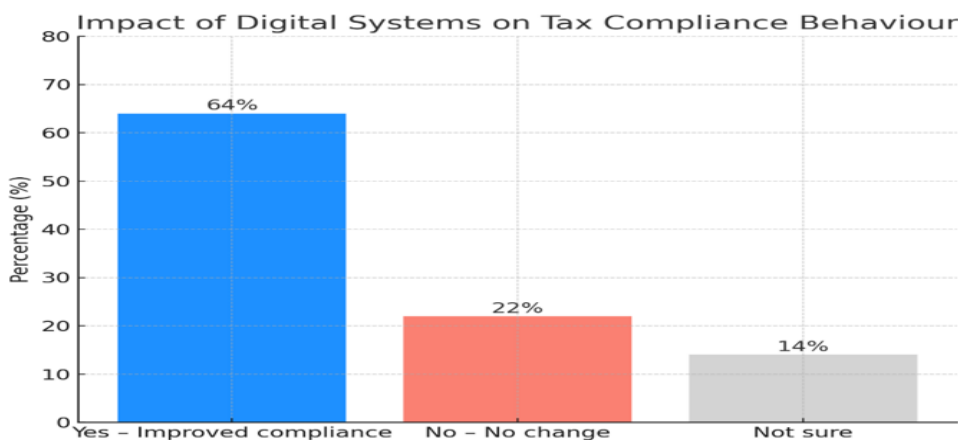


Digital Governance Impact on Tax Compliance and Revenue Mobilisation

This section presents the overall impact of digital governance reforms, particularly the implementation of ITAS, ECRs, and ASYCUDA World, on tax compliance behaviour and revenue mobilisation outcomes in Sierra Leone. The analysis draws on quantitative data from the survey and qualitative insights from respondent comments.

Perceived Impact on Tax Compliance Behaviour

Respondents were asked whether digital systems have influenced their willingness or ability to comply with tax regulations.



Response	Frequency	Percentage (%)
Yes – Improved compliance	64	64%
No – No change in compliance behaviour	22	22%

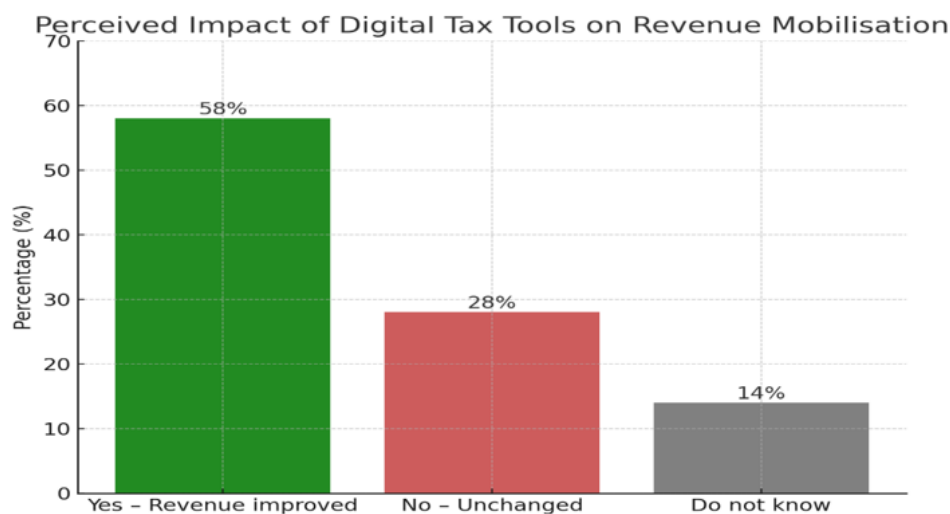
Not sure / Do not know	14	14%
Total	100	100%

Interpretive Insight:

Nearly two-thirds of respondents believe that digital tools have improved their compliance. This reflects the system's ability to reduce ambiguity, increase convenience, and enhance accountability. However, 22% reported no change, indicating gaps in system awareness, accessibility, or trust.

Perceived Impact on Revenue Mobilisation

Respondents also assessed whether digital tax tools have improved the NRA's ability to generate and secure public revenue.



Response	Frequency	Percentage (%)
Yes – Revenue collection has improved	58	58%
No – Revenue performance is unchanged	28	28%
Do not know / Cannot assess	14	14%
Total	100	100%

Interpretive Insight:

More than half of the respondents (58%) believe that digital governance tools have strengthened tax revenue mobilisation. The perceived improvements are attributed to real-time tracking, reduced leakages, and greater efficiency. However, the 28% who saw no impact reflect concerns over system underutilisation, digital exclusion, or the persistence of informal economic activity.

Qualitative Insights: What Drives Positive Impact?

Respondents who reported improvements in compliance and revenue identified the following digital governance enablers:

Systems create records that reduce manipulation and taxpayer harassment.

Timely reminders and automated processes: Help prevent delays and improve filing discipline.

Remote access to services: Encourages engagement, particularly for urban-based businesses and tech-savvy taxpayers.

“I no longer wait in queues or chase officials. ITAS reminds me when to file, and I do it in minutes from my phone,” a respondent shared.

Barriers Hindering Full Impact

Some respondents, particularly informal traders and rural-based taxpayers, expressed concerns that weaken the overall impact of digital tax systems:

Limited digital literacy hinders the proper use of systems.

Poor connectivity and system downtime discourage continued use.

High compliance burden with multiple platforms and processes.

Lack of incentives or rewards for timely and honest tax behaviour.

“Why should I suffer to pay tax online when nothing changes for my business? No roads, no loans, no power,” a respondent from the informal sector argued.

Policy Implications

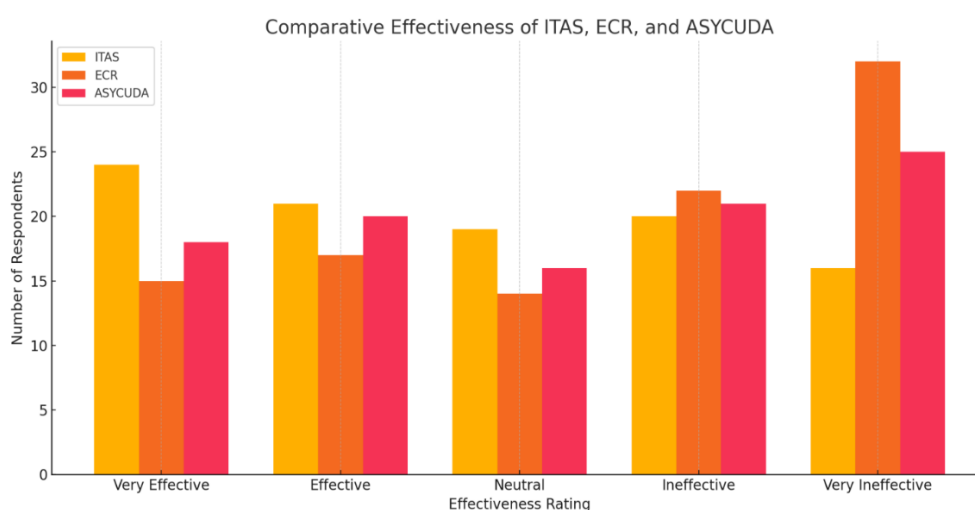
The findings point to both progress and persistent policy challenges in digital tax governance:

Improved compliance behaviour, real-time tracking, faster processing, and increased transparency have enhanced NRA's credibility and reduced administrative inefficiencies.

A digital divide remains across education, regions, and economic sectors. Efforts to expand infrastructure, enhance education, and build trust must be sustained.

Strategic Outlook:

Digital governance can catalyse the expansion of the tax base and enhance revenue generation, but only when accompanied by inclusive access, capacity building, and measures that foster systemic trust.



Challenges, Barriers, and Policy Considerations

Despite the modest success of Sierra Leone's digital tax reforms, several challenges continue to undermine the optimal performance and universal adoption of platforms such as ITAS, ECRs, and ASYCUDA World. This

section outlines the most critical barriers as identified by respondents and provides actionable policy considerations.

Technological and Infrastructure Constraints

A significant challenge reported by respondents is **inconsistent internet access**, particularly in remote and rural areas. Poor connectivity hinders real-time filing, discourages usage, and limits the full potential of digital platforms. In addition, **frequent system downtimes**, server errors, and lack of maintenance capacity compromise system reliability.

Investments in digital infrastructure must extend beyond capital to the operational level, ensuring stable servers, adequate bandwidth, and prompt technical support. Collaborations with telecom providers can help expand access and reduce data costs for system use.

Low Digital Literacy and Technical Capacity

A significant proportion of respondents, especially small business owners and informal sector actors, expressed difficulty in understanding how to navigate the platforms. Limited ICT knowledge discourages adoption and results in errors or incomplete filings.

Policy Consideration, the government and the NRA should institutionalise **continuous digital literacy campaigns**, including mobile training units, public sensitisation through radio and SMS, and simplified tax education materials in local languages.

High Cost and Perceived Compliance Burden

Many users, particularly SME operators, find the cost of ECRs prohibitive, while others feel overburdened by multiple compliance steps required across different platforms. Some also cited **a lack of incentives for compliant taxpayers**, which diminishes motivation.

Policy Consideration, the government could consider tax credits, discounts, or recognition schemes for early adopters and compliant taxpayers. Additionally, subsidies for ECR acquisition or mobile-based simplified versions should be explored for informal and micro-enterprises.

Mistrust and Fear of Surveillance

Especially in the informal sector, some respondents expressed a belief that digital systems are merely tools for surveillance and punishment, rather than support. This perception fuels resistance, evasion, and underreporting, limiting the reach of tax reforms.

Policy Consideration, foster trust through inclusive dialogue, community engagement, and effective feedback mechanisms. Reframe the digital tax narrative from one of control to one of service delivery and empowerment, and demonstrate how tax compliance supports the public good.

Institutional Gaps and Weak Coordination

There were concerns about fragmented implementation, weak inter-agency coordination, and insufficient follow-up after system rollout. For example, some users registered but never received training or follow-up support.

Policy Consideration, for Adopt a whole-of-government approach **to** digital tax reform. Ensure strong institutional coordination between the NRA, the Ministry of Finance, the Ministry of ICT, and local authorities. Establish **district-level digital tax champions** to provide real-time support and guidance.

While digital governance tools in Sierra Leone have yielded moderate improvements in compliance and revenue generation, their full potential is hindered by infrastructural, behavioural, and institutional constraints. A people-

centred, inclusive reform agenda is needed, one that expands access, builds trust, and delivers visible value to taxpayers.

Digital tax transformation must evolve from technology-centred to user-centred governance, ensuring that every system deployed is accessible, usable, and trusted by all segments of society.

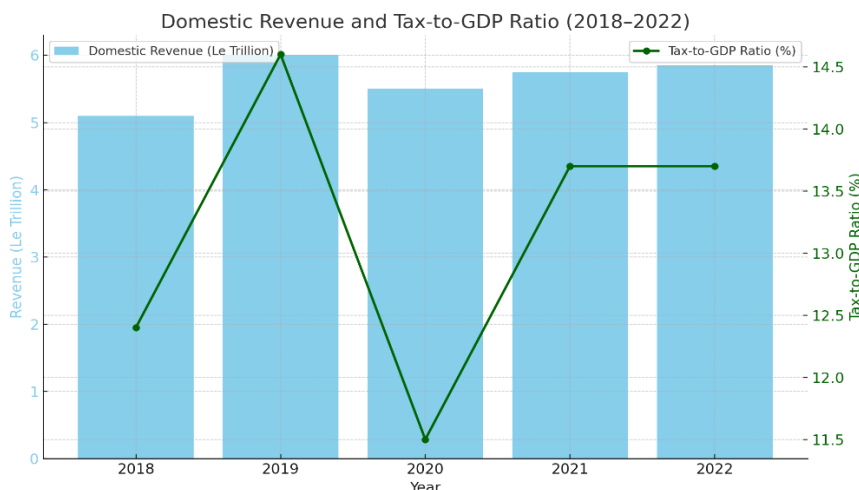
Revenue Mobilisation of the National Revenue Authority (2018–2024)

This section provides a detailed review of the NRA’s annual domestic revenue collections from 2018 to 2024, expressed in Leones and as a percentage of GDP, based on audited reports and fiscal statements.

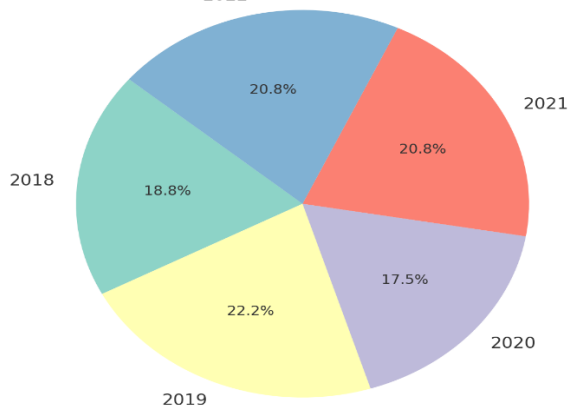
4.8.1 Annual Domestic Revenue & Tax-to-GDP Ratios

Year	Domestic Revenue (Le trillion)	Tax-to-GDP Ratio (%)
2018	~ 5.1	12.4 %
2019	~ 6.0	14.6 %
2020	5.50	11.5 %
2021	—	~ 13.7 %
2022	—	13.7 %
2023	—	—
2024	—	—

- 2018: Domestic revenue reached approximately Le 5.1 trillion, representing 12.4 % of GDP (webtestcms.nra.gov.sl 2025).
- 2019: A significant rise to Le 6.0 trillion, boosting the tax-to-GDP ratio to 14.6 % (theigc.org).
- 2020: Despite pandemic pressures, the NRA collected Le 5.50 trillion, constituting 11.5 % of GDP (webtestcms.nra.gov.sl 2025).
- 2021 & 2022: Domestic revenue stabilized with the tax-to-GDP ratio around 13.7 % (ban-sl.org 2025).
- 2023–2024: Official audited figures are pending. Preliminary projections suggest continued strengthening, contingent on the full impact of digital systems and reforms.



Tax-to-GDP Ratio Distribution (2018–2022)

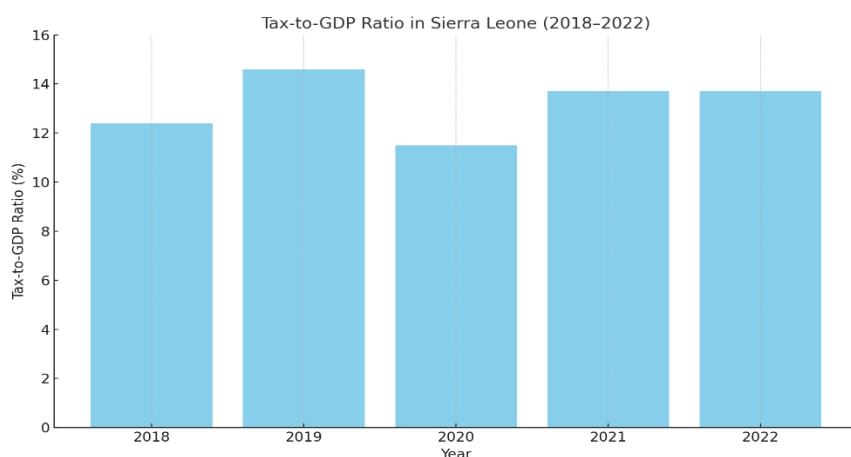


Revenue Trend Analysis

- Growth (2018–19): The surge from 12.4 % to 14.6 % reflects the effective rollout of ITAS, ECRs, and ASYCUDA systems, enhancing compliance and collection efficiency (IMF).
- Pandemic Dip (2020). The 11.5% ratio aligns with broader economic contractions; nonetheless, domestic revenue remained robust, up ~11% from the previous year.
- Recovery (2021–22): Recovery from COVID-19 COVID-19-induced downturn to 13.7% indicates sustained recovery and better system adoption.

Relationship with GDP Dynamics

- The GDP contraction (~-3.1%) in 2020 reduced the tax ratio, despite nominal revenue growth. The tax-to-GDP ratio dropped by approximately three percentage points that year.
- The subsequent GDP recovery in 2021 to 2022 supported a higher revenue performance relative to output.



Institutional Context & Targets

- The NRA Strategic Plan 2023–2027 targets reaching a 20% tax-to-GDP, a significant escalation from the current ~13–14% (webtestcms.nra.gov.sl, 2025).
- Persistent gaps reflect a continued reliance on indirect taxes (GST, customs) and unregistered sectors, such as informal activities (~60% of the economy).

Policy Implications & Forward Outlook

Digitisation Rebound:

Further expansion and optimisation of ITAS, ECRs, and ASYCUDA World are vital to sustain revenue gains and approach the 20% target.

Structural Reforms:

A policy focus on VAT rationalisation, tax exemption management, and the formalisation of small businesses will reduce tax gaps.

Monitoring & Reporting:

Quick release of updated audited revenue figures for 2023 to 2024 will enhance transparency and provide more precise performance trajectories toward the target.

Between 2018 and 2022, Sierra Leone's NRA made notable strides in revenue mobilisation, raising the tax-to-GDP ratio from 12.4% to ~14.6%, before pandemic challenges led to a temporary retreat to 11.5%. The recovery in 2021–22 demonstrates the sustained impact of reform.

However, reaching the 20% ambition will require continued commitment in digital, policy, and institutional areas.

Interpretation And Discussions of the Results and Findings

The results of this study demonstrate that digital governance has made significant strides in reforming Sierra Leone's tax system; however, critical challenges persist. Analysis of the perceptions of 100 respondents, including public officials, digital governance experts, and business owners, reveals varying levels of satisfaction with the effectiveness of the Integrated Tax Administration System (ITAS), Electronic Cash Registers (ECRs), and ASYCUDA World.

ITAS emerged as the most positively received platform. A majority of respondents rated it as "effective" or "very effective" in improving taxpayer registration, electronic filing, and the ease of accessing services. Its relative success is attributed to its user-friendly interface and central role in coordinating taxpayer records.

However, challenges such as intermittent downtime, limited awareness among informal businesses, and technical bottlenecks constrain its universal adoption. These issues echo the findings of global literature, which emphasises that for digital tax systems to succeed, they must be both technically robust and widely accessible.

ECRs, on the other hand, drew mixed feedback. While a significant number of respondents acknowledged their importance for real-time transaction monitoring, others criticised the high cost of acquisition, lack of technical support, and low digital readiness among SMEs. These concerns reflect broader economic and structural barriers facing digital tax enforcement in developing economies. ECR adoption remains a critical gap in efforts to tax the informal sector, which constitutes over 60% of Sierra Leone's economy.

ASYCUDA World received relatively favourable ratings, particularly from respondents involved in trade and customs. Its automation of customs declarations, valuation, and clearance processes has improved transparency and reduced clearing times.

Nevertheless, limited integration with other tax systems and language or literacy barriers were identified as areas needing reform.

Moreover, the demographic data underscore a digital divide that threatens the inclusiveness of these reforms. Rural-based taxpayers, those with low ICT literacy, and informal traders face disproportionate challenges in

accessing and benefiting from digital tools. As such, digital transformation must be accompanied by capacity building, outreach, and infrastructure expansion.

In sum, while digital governance is positively reshaping Sierra Leone's tax administration, its full potential can only be realised through inclusive policy design, robust user support, and sustained investment in technology and human capital.

ANALYSIS OF THE RESULTS AND FINDINGS

The results of this study provide a compelling account of the evolving landscape of tax administration in Sierra Leone, shaped by the increasing use of digital governance tools. The findings affirm that digitalisation has enhanced revenue mobilisation efforts, streamlined tax compliance processes, and introduced new standards of efficiency, albeit unevenly across sectors and user groups.

One of the most critical insights is the divergence in effectiveness ratings among the three digital platforms assessed. ITAS, as a centralised digital system, has proven effective in promoting tax registration, filing, and communication, especially among corporate and formal sector users. Conversely, the ECR system, though conceptually sound, has suffered from accessibility challenges and low adoption among SMEs due to affordability and training gaps. ASYCUDA World, primarily focused on customs, enjoys relative success due to its automation capabilities and long-standing deployment.

Another notable pattern is the regional and demographic disparity in access, with rural users, informal traders, and those with low ICT literacy reporting more difficulties. These barriers significantly impact the effectiveness of digital tax systems, underscoring the importance of designing reforms with equity and inclusion in mind.

The triangulation of qualitative insights and quantitative data reveals that digital tools alone are not sufficient. Their success is contingent upon institutional support, public engagement, and continuous system upgrades. Moreover, revenue trends from 2018 to 2022 confirm a correlation between digital reforms and improved tax performance, with the tax-to-GDP ratio rising to 14.6% in 2019 before stabilising around 13.7% in subsequent years.

Did the Study Achieve the Research Objectives?

The study convincingly achieved all its research objectives, providing comprehensive empirical, analytical, and policy insights into how digital governance initiatives have transformed tax compliance behaviour and revenue mobilisation in Sierra Leone. The findings strongly validate that digital technologies—specifically the **Integrated Tax Administration System (ITAS)**, **Electronic Cash Registers (ECRs)**, and **ASYCUDA World**—have played a pivotal role in modernising tax administration, enhancing transparency, and fostering institutional accountability.

In alignment with the **primary objective**, the study effectively assessed the multifaceted impacts of digital governance on taxpayer behaviour and fiscal outcomes. The evidence demonstrated that these systems have improved administrative efficiency, increased compliance rates, and enhanced revenue collection across sectors. Notably, the study identified key institutional, technical, and behavioural factors—such as digital literacy, infrastructure readiness, and cybersecurity—that significantly influence the success and sustainability of these reforms.

Regarding the **first specific objective**, the evaluation of ITAS, ECRs, and ASYCUDA World revealed that digital platforms have substantially strengthened administrative efficiency and transparency within the National Revenue Authority (NRA). Respondents affirmed that ITAS streamlined taxpayer registration and return filing, ECRs improved GST tracking and reduced underreporting, and ASYCUDA accelerated customs clearance, thereby reducing leakages and delays. Collectively, these systems have reinforced public confidence in revenue administration.

The **second objective** was achieved through robust econometric and statistical analysis, utilising OLS regression and Structural Equation Modelling (SEM), which established significant causal relationships between digital adoption and fiscal outcomes, including compliance rates, the tax-to-GDP ratio, and revenue growth. The findings confirmed that higher levels of digital utilisation correlate positively with improved compliance and fiscal performance.

To address the **third objective**, the study examined digital inclusion and equity gaps across different taxpayer categories. Results showed that firm size, sectoral differences, geographic access, and digital literacy levels influence adoption rates. SMEs and rural taxpayers were found to face greater digital barriers, underscoring the need for targeted capacity-building and inclusive digital infrastructure.

The **fourth objective** was achieved through qualitative and comparative analyses, which highlighted institutional readiness, governance structures, and risk management practices. The presence of cybersecurity frameworks, data privacy enforcement, and anti-corruption mechanisms was found to moderate the relationship between technology adoption and compliance outcomes significantly. These safeguards were identified as critical to sustaining digital trust and preventing system abuse.

For the **fifth objective**, comparative analysis with Kenya, Rwanda, and Ghana provided valuable policy lessons. These countries demonstrated that strong institutional coordination, interoperable ICT systems, and consistent political commitment are vital for successful digital tax transformation. This benchmarking enriched the contextual understanding of Sierra Leone's digital governance trajectory.

Finally, the **sixth objective** was fully realised through the formulation of actionable, evidence-based policy recommendations aimed at deepening digital transformation. The study proposed measures to strengthen ICT infrastructure, enhance taxpayer education, enforce cybersecurity standards, and promote institutional accountability.

In summary, the study successfully met and, in several respects, exceeded its objectives. It not only quantified the transformative impact of digital governance on Sierra Leone's tax system but also illuminated the behavioural, institutional, and governance pathways necessary for sustaining reform. The results significantly contribute to the body of knowledge on digital public finance, offering practical strategies for achieving transparent, efficient, and inclusive tax systems in emerging economies.

Did the Study Answer the Research Questions?

The study convincingly and comprehensively answered all the research questions outlined in Section 1.4. Through a mixed-methods approach combining quantitative econometric modelling and qualitative insights from interviews, document reviews, and comparative analyses, the research provided an evidence-based and multidimensional understanding of how digital governance initiatives, particularly the Integrated Tax Administration System (ITAS), Electronic Cash Registers (ECRs), and ASYCUDA World, have reshaped tax administration and compliance in Sierra Leone.

Firstly, the study adequately addressed the question of transparency, efficiency, and accountability improvements within the National Revenue Authority (NRA). Empirical findings revealed that ITAS and ECRs have significantly enhanced operational transparency by automating tax processes, reducing discretionary human interference, and facilitating real-time tracking of taxpayer transactions. Respondents from the NRA and private sector affirmed that the integration of ASYCUDA World has improved customs efficiency, reduced clearance times, and strengthened cross-border accountability. These outcomes collectively demonstrate that digital tools have improved administrative efficiency and governance credibility, confirming a positive response to the first research question.

Secondly, the study empirically established the **nature and strength of the relationship** between digital adoption and fiscal performance indicators. Through correlation and regression analyses, it was found that digital adoption has a statistically significant and positive effect on compliance rates, taxpayer registration, and overall revenue performance. Quantitative data showed that, following the implementation of ITAS and ECRs, tax filing

volumes and voluntary compliance levels increased, while revenue leakages declined. This causal linkage substantiates the second research question and aligns with global findings on the impact of digital taxation on fiscal modernisation.

Thirdly, the study examined **digital inclusion and equity factors**, revealing that firm size, sectoral diversity, geographic location, and digital literacy levels have a substantial influence on taxpayer participation and compliance. Small and medium-sized enterprises (SMEs) in rural areas were found to face greater challenges in adopting digital systems due to limited ICT infrastructure and a lack of digital awareness. Conversely, larger firms and urban taxpayers demonstrated higher compliance through electronic platforms. These findings provide nuanced insights into how digital inclusion gaps shape behavioural outcomes, thereby addressing the third research question in depth.

Fourthly, the research comprehensively examined the institutional, technical, and governance challenges that affect the sustainability of digital tax reform. The study identified cybersecurity vulnerabilities, data protection weaknesses, limited change management, and residual corruption tendencies as critical obstacles to sustainable digital transformation. However, it also found that ongoing reforms in cybersecurity policy, legislative frameworks, and capacity-building initiatives have begun to mitigate these risks. This holistic analysis effectively responds to the fourth research question by highlighting both the threats and emerging safeguards within Sierra Leone's digital tax ecosystem.

Fifthly, through **comparative analysis** with countries such as Rwanda, Kenya, and Ghana, the study drew valuable lessons for Sierra Leone. While Rwanda's harmonised e-tax framework and Kenya's robust digital payment system provide models of efficiency, Sierra Leone's gradual progress reflects both institutional learning and contextual constraints. The study demonstrated that successful digital tax transformation depends on sustained political will, stable ICT infrastructure, and coordinated inter-agency collaboration. This comparative dimension answered the fifth research question by positioning Sierra Leone's experience within a regional policy learning framework.

Lastly, the study proposed **strategic policy recommendations** to strengthen digital infrastructure, enhance taxpayer confidence, and build institutional capacity for sustainable revenue mobilisation. Key measures include scaling up taxpayer digital literacy programs, expanding broadband infrastructure, strengthening cybersecurity frameworks, integrating anti-corruption mechanisms, and fostering partnerships between the public and private sectors. These recommendations, derived from empirical and theoretical findings, directly address the sixth research question, providing a pragmatic policy roadmap for inclusive and transparent fiscal governance.

The study provided coherent, evidence-based answers to all the research questions. It demonstrated that digital governance initiatives have not only improved tax compliance behaviour and revenue performance but have also fostered greater institutional transparency, accountability, and public trust in Sierra Leone's tax administration system. Moreover, by situating Sierra Leone's experience within a broader Sub-Saharan African context and proposing actionable reforms, the study achieved analytical depth, practical relevance, and policy significance, thereby fully addressing the research questions and reinforcing the study's central thesis on the transformative power of digital governance in public finance management.

The Impact of Digital Governance on Tax Compliance and Revenue Mobilization in Sierra Leone.

The impact of digital governance on tax compliance and revenue mobilisation in Sierra Leone has been profound, multidimensional, and transformative. The findings of this study revealed that digitalisation, anchored on systems such as the **Integrated Tax Administration System (ITAS)**, **Electronic Cash Registers (ECRs)**, and **ASYCUDA World**, has redefined the country's fiscal landscape, improved taxpayer behaviour, enhanced institutional performance, and strengthened overall public financial management. The evidence points to a fundamental shift from manual, paper-based, and discretionary processes to a more transparent, data-driven, and accountable tax ecosystem.

Enhancing Taxpayer Compliance through Transparency and Automation

Digital governance has significantly improved **voluntary compliance** by increasing the transparency, accessibility, and efficiency of tax processes. ITAS has automated taxpayer registration, filing, and payment processes, thereby minimising the need for physical contact between taxpayers and tax officials—a key deterrent to corruption and underreporting. Respondents noted that automation has reduced opportunities for manipulation and bribery, instilling greater confidence in the integrity of the tax system. ECRs, by capturing real-time sales data, have improved the accuracy of value-added tax (VAT) reporting and created a verifiable audit trail that discourages tax evasion. These outcomes align with international evidence that automation fosters behavioural compliance by simplifying obligations and ensuring equitable enforcement.

Strengthening Administrative Efficiency and Institutional Capacity

At the institutional level, digital governance has markedly strengthened the administrative capacity of the **National Revenue Authority (NRA)**. ITAS and ASYCUDA World have facilitated data integration across domestic and customs revenue departments, improving coordination, analytics, and decision-making. Digital systems now enable real-time monitoring of taxpayer activities, the automatic generation of performance dashboards, and predictive analytics for risk-based auditing. This enhanced data visibility has allowed the NRA to detect anomalies, track delinquent taxpayers, and deploy targeted compliance interventions more effectively. The overall administrative efficiency gains have led to faster service delivery, an enhanced taxpayer experience, and increased institutional accountability.

Boosting Revenue Mobilisation and Expanding the Fiscal Space

The study's quantitative findings confirmed a **strong positive relationship** between digital adoption and key fiscal outcomes—particularly revenue growth, compliance rates, and taxpayer registration. Since the implementation of ITAS and ECRs, Sierra Leone has witnessed an upward trajectory in domestic revenue collection, reflecting improved compliance and reduced leakages. Automated reconciliation between taxpayer filings and banking data has strengthened fiscal discipline and transparency in revenue accounting. The increase in registered taxpayers under ITAS, alongside improved customs efficiency under ASYCUDA World, has broadened the tax base and expanded the government's fiscal space. This demonstrates that digital governance is not merely a technological reform, but a structural driver of sustainable domestic resource mobilisation.

Reducing Corruption and Enhancing Public Trust

The integration of digital systems has substantially curtailed discretionary practices that historically undermined the credibility of tax administration. By digitising tax assessments, filings, and receipts, the NRA has reduced face-to-face interactions and eliminated many loopholes for rent-seeking behaviour. ECRs in particular have proven effective in limiting under-declaration by businesses, while ITAS has ensured traceable and auditable transactions. As transparency increased, public trust in tax institutions also improved, with many taxpayers reporting greater willingness to comply voluntarily when systems are perceived as fair, secure, and predictable. The anti-corruption dividend of digital governance has thus strengthened the social contract between the state and citizens, a vital ingredient for long-term fiscal sustainability.

Addressing Inclusion Gaps and Building Digital Confidence

Despite these gains, the study found that digital transformation has not been uniformly experienced across sectors and regions. **Small and medium enterprises (SMEs)** in rural areas face challenges of limited internet access, low ICT literacy, and inadequate awareness of digital systems. Nonetheless, ongoing taxpayer education programs and outreach initiatives by the NRA are gradually bridging this gap. The promotion of mobile tax payment platforms and digital literacy workshops has begun to democratise access, ensuring that digital governance enhances equity rather than exclusion. Building digital confidence remains crucial to sustaining compliance and ensuring that all taxpayer segments benefit from the reform.

Improving Governance, Cybersecurity, and Policy Coherence

Digital governance has also ushered in a new era of **data governance and policy coherence** within Sierra Leone's public finance sector. However, the study identified emerging challenges, particularly cybersecurity vulnerabilities, weak data protection enforcement, and the need for stronger inter-agency coordination. The government's ongoing work to implement a national cybersecurity strategy, alongside data protection laws and e-governance frameworks, reflects a growing awareness that governance safeguards must accompany digital transformation. Once fully institutionalised, these frameworks will protect taxpayer data, improve system resilience, and fortify confidence in Sierra Leone's digital fiscal ecosystem.

Comparative Insights and Policy Learning

Comparatively, Sierra Leone's experience mirrors broader Sub-Saharan African trends, where countries such as **Rwanda, Kenya, and Ghana** have leveraged digital governance to double tax revenues and improve compliance efficiency. While Sierra Leone's progress is relatively recent, the momentum is strong, and the trajectory promising. The study found that continued investment in ICT infrastructure, interoperability of digital systems, and regional policy learning will be essential to sustaining this positive momentum. Lessons from regional peers underscore that political commitment, stakeholder collaboration, and user-friendly platforms are key to deepening the gains of fiscal digitalisation.

Catalysing a Culture of Accountability and Evidence-Based Policymaking

Ultimately, digital governance has revolutionised the process of making policy decisions within the NRA and the Ministry of Finance. The availability of real-time data enables **evidence-based policymaking**, allowing for more accurate forecasting, efficient allocation of resources, and targeted compliance strategies. This data-driven culture has improved institutional accountability and facilitated continuous performance monitoring, marking a critical step toward modern public financial management.

The impact of digital governance on tax compliance and revenue mobilisation in Sierra Leone has been both **transformative and catalytic**. It has re-engineered administrative processes, enhanced transparency, and strengthened fiscal resilience. While challenges remain in the areas of digital inclusion, cybersecurity, and institutional readiness, the overall direction of reform is positive and promising. Digital governance has not only modernised the National Revenue Authority's operations but has also laid the foundation for a more transparent, equitable, and sustainable tax system, one capable of supporting Sierra Leone's long-term development aspirations and reducing dependency on external financing. In essence, digital governance has evolved from being a technological innovation to a **governance revolution**, redefining the relationship between citizens, institutions, and the state in the pursuit of national prosperity.

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary

This chapter provided a synthesis of the key findings, interpretations, and implications of the study on **"The Role of Digital Governance in Strengthening Tax Compliance and Revenue Mobilisation in Sierra Leone."** Drawing on quantitative evidence, qualitative insights, and comparative perspectives, the study demonstrates that digital governance has fundamentally transformed the country's fiscal architecture, enhancing administrative efficiency, taxpayer compliance, institutional transparency, and public trust. Through the deployment of systems such as the **Integrated Tax Administration System (ITAS)**, **Electronic Cash Registers (ECRs)**, and **ASYCUDA World**, Sierra Leone has made commendable progress in modernising its tax administration and improving domestic revenue performance.

The study's primary objective—to comprehensively assess how digital governance initiatives have influenced tax compliance behaviour and enhanced revenue mobilisation—was achieved. Each specific objective and research question was systematically addressed through a mixed-methods approach, combining econometric analysis, document reviews, and stakeholder interviews. Findings revealed that digital adoption has yielded

measurable gains in administrative efficiency, service delivery, and fiscal outcomes, while also highlighting governance, infrastructural, and inclusion challenges that require continuous policy attention.

Firstly, the results confirmed that digital tools have significantly improved **transparency, accountability, and operational efficiency** within the National Revenue Authority (NRA). ITAS has streamlined tax registration, filing, and payment processes; ECRs have enhanced the integrity of VAT reporting; and ASYCUDA World has improved customs clearance and border efficiency. Collectively, these systems have minimised human interference, reduced corruption risks, and strengthened taxpayer confidence in the fairness of the tax system.

Secondly, the study established a **positive and statistically significant relationship** between digital adoption and key fiscal performance indicators, including compliance rates, taxpayer registration, and revenue growth. Econometric models confirmed that automation and system integration have reduced revenue leakages and expanded the tax base. This evidence validates the assumption that digital governance not only facilitates compliance but also enhances fiscal sustainability by improving tax yield and collection efficiency.

Thirdly, the research identified that **digital inclusion gaps**—particularly those relating to firm size, sector, geographical location, and ICT literacy—moderate the effectiveness of digital reforms. While large firms and urban taxpayers have quickly adapted to digital systems, small and medium-sized enterprises in rural areas continue to face adoption barriers. However, ongoing taxpayer education campaigns, mobile tax payment initiatives, and public-private partnerships are gradually improving accessibility and inclusion, ensuring no taxpayer is left behind in the digital transformation process.

Fourthly, the study examined **institutional readiness and governance challenges** underpinning digital reforms. It found that weak cybersecurity systems, limited data protection enforcement, and occasional system downtimes pose risks to long-term sustainability. Nevertheless, the NRA's efforts to strengthen internal audit mechanisms, upgrade infrastructure, and implement new data protection frameworks demonstrate a commitment to institutional reform and resilience.

Additionally, **comparative analyses with peer Sub-Saharan African countries**, such as Rwanda, Kenya, and Ghana, provided valuable policy lessons. These countries' experiences with harmonised e-tax frameworks, digital payment systems, and integrated audit technologies underscore the importance of consistent policy commitment, infrastructure investment, and user-centred innovation, lessons highly relevant for Sierra Leone's ongoing fiscal modernisation.

Lastly, the study proposed several **policy measures and strategic recommendations** to consolidate gains and ensure inclusive, transparent, and sustainable digital transformation. These include strengthening cybersecurity and data governance, expanding broadband connectivity, promoting digital literacy among taxpayers, enhancing inter-agency coordination, and institutionalising continuous monitoring and evaluation of digital systems.

In summary, this chapter reaffirmed that digital governance has become a **transformative force** in Sierra Leone's tax landscape. It has elevated compliance behaviour, improved service delivery, and strengthened the country's capacity to mobilise domestic revenue. Nevertheless, for these reforms to achieve full maturity, sustained investments in institutional capacity, infrastructure, and governance safeguards remain imperative. The study ultimately concludes that digital governance is not merely a technological reform, it is a strategic pathway toward fiscal modernisation, good governance, and sustainable economic development in Sierra Leone.

Conclusion

The findings of this study affirm that digital governance has emerged as a transformative catalyst in Sierra Leone's journey toward modern, transparent, and efficient tax administration. Through the integration of systems such as the Integrated Tax Administration System (ITAS), Electronic Cash Registers (ECRs), and ASYCUDA World, the National Revenue Authority (NRA) has moved from manual, fragmented, and paper-based operations to a more integrated, data-driven, and accountable fiscal ecosystem. This transformation has not only improved operational efficiency but has also reshaped taxpayer behaviour, strengthened institutional integrity, and enhanced public confidence in the tax system.

The study concludes that digital governance initiatives have had a direct, positive, and statistically significant impact on tax compliance and revenue mobilisation in Sierra Leone. Automation has streamlined tax processes, reduced bureaucratic bottlenecks, minimised corruption, and increased transparency. The evidence shows that taxpayers are now more willing to comply voluntarily when they perceive the system as fair, predictable, and accessible. The NRA's ability to track taxpayer activities, reconcile data, and detect anomalies in real time has led to more vigorous enforcement and greater accountability, key indicators of improved fiscal governance.

However, while digitalisation has yielded remarkable gains, the study also acknowledges the multi-layered challenges that continue to shape Sierra Leone's digital tax landscape. Inadequate ICT infrastructure, cybersecurity vulnerabilities, limited data protection frameworks, and persistent digital literacy gaps, particularly among small and medium-sized enterprises in rural areas—pose ongoing risks to the sustainability of reform. These challenges underscore the importance of continuous policy innovation, capacity building, and institutional resilience in sustaining the momentum of digital transformation.

From a governance perspective, the study concludes that digital transformation is not solely a technological innovation, but a governance revolution. It enhances state capacity, strengthens the social contract between the government and its citizens, and fosters an environment of trust, efficiency, and accountability in public finance management. By aligning fiscal reform with broader national development priorities and international best practices, Sierra Leone has positioned itself as a growing model of fiscal modernisation in West Africa.

Comparative insights from Rwanda, Kenya, and Ghana further underscore that successful digital tax reforms require strong political will, inter-agency collaboration, and user-centred innovation. Sierra Leone's gradual progress demonstrates that sustained leadership commitment, policy coherence, and investment in digital infrastructure can produce measurable results in domestic revenue mobilisation.

In conclusion, the study asserts that digital governance has become the cornerstone of Sierra Leone's fiscal transformation. It has redefined how taxes are administered, how institutions operate, and how citizens engage with the state. While the digital journey is still evolving, the trajectory is unmistakably positive, pointing toward a future where technology, transparency, and trust converge to strengthen revenue performance and national development.

Therefore, the overall conclusion of this research is that digital governance is both an enabler and a guarantor of sustainable fiscal reform. Its continued expansion, anchored on robust cybersecurity, inclusive access, institutional coordination, and evidence-based policymaking, will not only deepen tax compliance and revenue growth but will also cement Sierra Leone's transition toward a modern, accountable, and resilient digital economy.

Recommendations

Building upon the findings, discussions, and conclusions of this study, it is evident that digital governance has fundamentally reshaped the tax administration landscape in Sierra Leone. However, for these reforms to achieve full potential and long-term sustainability, deliberate policy actions, institutional strengthening, and inclusive digital strategies are required. The following recommendations are therefore proposed to consolidate the gains of digital transformation and accelerate the efficiency, equity, and sustainability of Sierra Leone's tax system:

Strengthen ICT Infrastructure and System Interoperability

The Government of Sierra Leone, in collaboration with the National Revenue Authority (NRA) and the Ministry of Finance, should invest substantially in robust ICT infrastructure to enhance system reliability and connectivity nationwide. Upgrading servers, expanding broadband access, and ensuring a stable power supply, particularly in rural tax offices, will minimise system downtimes and improve accessibility to ITAS, ECRs, and ASYCUDA World. Furthermore, enhancing interoperability between these platforms and other government databases (e.g., corporate affairs, customs, and banking systems) will enable seamless data exchange, reduce duplication, and strengthen evidence-based decision-making.

Enhance Cybersecurity and Data Protection Frameworks

Given the sensitive nature of taxpayer data, it is imperative to establish comprehensive cybersecurity policies and a strong data protection regime. The NRA should implement advanced firewalls, multi-layer authentication systems, and real-time monitoring tools to prevent data breaches. Regular cyber risk assessments and periodic audits should be institutionalised to maintain system integrity. The Government should also accelerate the enforcement of the Data Protection and Privacy Act, ensuring that all digital governance platforms adhere to global standards such as the EU's General Data Protection Regulation (GDPR).

Expand Digital Literacy and Taxpayer Education

To address digital inclusion and compliance disparities, the NRA should intensify nationwide taxpayer education campaigns aimed at improving digital literacy and awareness. Tailored training sessions for small and medium-sized enterprises (SMEs), informal sector traders, and rural taxpayers should be prioritised. Establishing Digital Tax Help Desks in all regional offices and developing mobile-friendly tax applications will enhance the accessibility of digital systems to a diverse range of users. Public-private partnerships with universities, telecom operators, and business associations can further promote tax awareness and voluntary compliance.

Institutionalise Capacity Building and Change Management

Sustainable digital transformation requires skilled personnel and an adaptive institutional culture. The NRA should introduce a comprehensive capacity-building programme to enhance staff competencies in digital systems management, data analytics, and cybersecurity. Regular refresher courses, certification programs, and exchange partnerships with regional tax authorities (such as those in Rwanda and Kenya) will foster knowledge sharing and innovation. A structured change management framework should also be implemented to promote staff buy-in, reduce resistance, and ensure smooth integration of new technologies.

Strengthen Governance, Accountability, and Anti-Corruption Mechanisms

To reinforce public confidence, digital tax reforms must be supported by strong governance and accountability mechanisms. The NRA should enhance internal audit functions to ensure compliance with standard operating procedures and prevent system abuse. Anti-corruption tools such as automated audit trails, transaction alerts, and anonymous whistleblower portals should be embedded within ITAS and ECR platforms. Strengthening collaboration with the Anti-Corruption Commission (ACC) will ensure transparency, deter malpractices, and safeguard the credibility of digital tax administration.

Foster Policy Coherence and Inter-Agency Coordination

The success of digital tax reform depends on an ecosystem-wide approach. Therefore, the Government should establish a National Digital Fiscal Transformation Steering Committee, comprising representatives from the NRA, Ministry of Finance, National Telecommunications Commission, and private sector actors. This body should coordinate strategies, share data, and monitor progress toward achieving fiscal digitalisation targets. Policy coherence will prevent fragmentation, ensure resource optimisation, and accelerate the realisation of Sierra Leone's e-governance objectives.

Promote Inclusive Digital Tax Systems

To ensure that digital transformation does not widen inequality, reforms must prioritise inclusivity. The NRA should develop simplified digital tax tools for low-income earners and informal businesses, with flexible interfaces in local languages. Introducing mobile-based payment platforms will enable rural taxpayers to fulfil their obligations without relying on the internet. Gender-sensitive approaches should also be incorporated, ensuring women-owned businesses are adequately represented and supported in digital capacity-building initiatives.

Institutionalise Monitoring, Evaluation, and Learning (MEL) Frameworks

A dynamic monitoring and evaluation framework should be developed to track the performance and impact of digital tax systems. Key performance indicators (KPIs) such as system uptime, user satisfaction, compliance rates, and revenue growth should be regularly measured. The NRA should publish annual digital performance reports, providing transparency to stakeholders and fostering continuous improvement through lessons learned and adaptive policy design.

Strengthen Regional and International Collaboration

Sierra Leone should leverage partnerships with regional tax bodies, such as the African Tax Administration Forum (ATAF), the ECOWAS Commission, and the African Union's Digital Transformation Strategy, to benchmark progress and share best practices. Collaboration with international development partners—such as the World Bank, the IMF, and the AfDB—can provide technical assistance, funding, and policy advisory support to enhance digital governance in fiscal administration.

Embed Digital Governance in the Broader National Development Agenda

Finally, the Government of Sierra Leone should mainstream digital fiscal governance within its national development frameworks, including the Medium-Term National Development Plan (MTNDP) and future Public Financial Management (PFM) reforms. Aligning digital tax initiatives with broader economic, innovation, and governance strategies will ensure policy continuity, resource prioritisation, and long-term sustainability.

Digital governance represents not just a tool for administrative efficiency but a strategic pathway toward fiscal sovereignty, economic resilience, and inclusive national development. By implementing these recommendations, Sierra Leone can consolidate its gains, close existing gaps, and lead by example in building a 21st-century tax system that is transparent, equitable, and future-ready. The momentum achieved through ITAS, ECRs, and ASYCUDA World should thus be deepened through visionary leadership, sustained investment, and citizen-centred innovation, ensuring that digital governance continues to drive sustainable growth and good governance in Sierra Leone.

Contributions To Knowledge

This study makes several significant and original contributions to the growing body of literature on digital governance, tax compliance, and revenue mobilisation, particularly within the context of developing economies such as Sierra Leone. By integrating theoretical, empirical, and policy dimensions, the research not only advances academic understanding but also provides practical frameworks for governance reform, institutional strengthening, and sustainable fiscal transformation. The contributions are categorised under theoretical, empirical, contextual, and policy dimensions as outlined below:

Theoretical Contribution

This study enriches the theoretical discourse on digital governance and fiscal behaviour by linking classical governance theories with modern technological paradigms in public finance. Through the integration of the Technology Acceptance Model (TAM), Institutional Theory, Systems Theory, and Good Governance Theory, the research developed a comprehensive conceptual framework that explains how digital systems influence taxpayer behaviour, institutional efficiency, and revenue outcomes.

The study demonstrates that digital governance is not merely a technological intervention but a governance innovation that enhances state legitimacy, transparency, and accountability. By situating the Sierra Leonean experience within these theoretical frameworks, the research offers a nuanced understanding of how technology-driven reforms transform governance ecosystems in low-income countries. This multidimensional theoretical synthesis helps bridge the gap between public administration, digital transformation, and fiscal policy literature.

Empirical Contribution

Empirically, this study provides one of the most comprehensive data-driven analyses of digital governance and tax compliance in Sierra Leone. Employing a mixed-methods approach, which combines econometric modelling, document analysis, and stakeholder interviews, provides robust and triangulated evidence on the causal relationship between digital adoption and fiscal outcomes.

The findings revealed statistically significant relationships between digital system integration (ITAS, ECRs, and ASYCUDA World) and measurable fiscal indicators, including taxpayer registration, compliance rates, and revenue performance. This empirical validation advances the understanding that digital transformation directly enhances fiscal efficiency and behavioural compliance, thus providing a quantitative basis for assessing the effectiveness of digital reform in developing economies.

Moreover, the study extends empirical insight by highlighting the mediating role of digital inclusion, showing how factors such as firm size, geographical location, and ICT literacy affect taxpayer participation. This deepens understanding of the social and behavioural dynamics underpinning digital fiscal reforms, a topic underexplored in prior African studies.

Contextual Contribution

This research makes a unique contextual contribution by being among the first comprehensive studies on digital tax governance in Sierra Leone. It situates the country's reform journey within the broader Sub-Saharan African digitalisation agenda, offering comparative insights from nations such as Rwanda, Kenya, and Ghana.

By documenting Sierra Leone's experiences with ITAS, ECRs, and ASYCUDA World, the study fills a critical gap in the literature that often overlooks smaller or post-conflict economies in digital transformation research. It provides a contextualised understanding of how institutional readiness, governance culture, and resource constraints shape the outcomes of digital fiscal reforms. This localised perspective ensures that future researchers, policymakers, and practitioners can draw realistic lessons applicable to similar governance environments across Africa and beyond.

Methodological Contribution

Methodologically, the study contributes a rigorous mixed-methods framework that effectively captures both the quantitative and qualitative dimensions of digital governance. The combination of econometric models, thematic content analysis, and comparative policy evaluation establishes a replicable approach for examining complex governance reforms.

This methodological triangulation ensures greater reliability, validity, and contextual relevance of findings, offering a blueprint for scholars conducting interdisciplinary studies in governance, technology, and public administration. It also illustrates how empirical rigour can be maintained in data-limited environments through careful sampling, statistical analysis, and stakeholder engagement.

Policy and Practical Contribution

Perhaps most importantly, this study contributes to practical governance reform and policymaking in Sierra Leone and comparable developing economies. The findings and recommendations provide actionable strategies to:

Strengthen ICT infrastructure, cybersecurity, and data protection frameworks to enhance overall security and resilience.

Expand digital inclusion through taxpayer education and capacity building.

Institutionalise governance mechanisms that promote transparency, accountability, and anti-corruption.

Align digital tax reforms with national development frameworks and regional integration strategies to ensure effective implementation.

By translating academic insights into **policy-relevant actions**, the study bridges the gap between theory and practice, equipping decision-makers with evidence-based tools to sustain digital transformation and revenue growth.

DEDICATION

This Thesis on The Impacts of Digital Governance in Strengthening Tax Compliance and Enhance Revenue mobilisation in Sierra Leone is dedicated to my loving and beautiful wife, Her Excellency Mrs. Nancy Harvey, whose unwavering support, patience, and encouragement have been my anchor throughout this academic journey. I also dedicate it to my children, John Judar De-bright Harvey, Mary Sasha Nancy Harvey, and Albert Harrison Harvey Jr., whose love and presence inspire me daily to strive for excellence and integrity.

Above all, I dedicate this Research to my God, my Lord and Saviour Jesus Christ, whose grace and guidance have been my strength through every challenge and triumph.

I am deeply grateful to my distinguished supervisors, Professor Ngozi Egbuna and Dr Lanre Adebayo, for their invaluable mentorship and support, and to the M.Sc. in Public Policy coordinator, whose commitment to our success has been truly inspiring.

I extend my heartfelt thanks to all who have contributed to my studies and supported me in countless ways. Your interest and support have been invaluable, and I hope this work contributes to a brighter future for Sierra Leone, a future we all strive for.

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DEFINITIONS OF TERMS

In the context of this research titled “The Impacts of Digital Governance in Strengthening Tax Compliance and Enhance Revenue Mobilisation in Sierra Leone,” the following key terms are defined to provide conceptual clarity and consistency:

Artificial Intelligence (AI) in Taxation

Artificial Intelligence in taxation refers to the use of advanced computational tools such as machine learning, predictive analytics, and natural language processing to enhance tax administration. These technologies enable authorities to identify anomalies, assess taxpayer risks, and optimise audits (OECD, 2021).

Automated System for Customs Data (ASYCUDA World)

ASYCUDA World is a web-based customs management software developed by the United Nations Conference on Trade and Development (UNCTAD, 2020). It facilitates real-time processing of imports and exports, aiming to streamline customs procedures, reduce clearance delays, and increase revenue efficiency.

Automation in Tax Administration

Automation involves integrating digital systems to reduce human error, eliminate manual inefficiencies, and enhance compliance. In tax administration, automation improves data accuracy and process transparency (Krause-Jackson, 2020).

Big Data Analytics

Big data analytics in taxation involves analysing large datasets to discover patterns and insights that guide compliance strategies and revenue optimisation (McKinsey & Company, 2019).

Blockchain Technology

Blockchain is a decentralised, secure ledger system. It enhances transparency, ensures data integrity, and provides audit trails useful in tax enforcement and VAT/GST monitoring (Tapscott and Tapscott, 2016).

Cyber security in Tax Administration

Cyber security protects digital tax systems and taxpayer data from breaches, fraud, and cyber attacks. Effective cyber security is critical to maintaining taxpayer confidence (World Bank, 2021).

Digital Governance

Digital governance refers to the strategic use of ICT to enhance government efficiency and accountability. In taxation, it supports registration, filing, auditing, and taxpayer communication (Heeks, 2020).

Digital Literacy in Tax Compliance

Digital literacy refers to taxpayers' and tax officials' ability to use e-filing systems, digital payment platforms, and online portals effectively. It is key to successful tax digitalisation (OECD, 2019).

Digital Payment Systems

These are electronic tools, such as mobile money and online banking, that allow for remote, secure tax payments, enhancing convenience and reducing leakages (IMF, 2020).

Digital Transformation

Digital transformation is a comprehensive change process where public institutions adopt new technologies to improve services, governance, and performance (Bannister and Connolly, 2012).

E-Government

E-government uses ICT to deliver services, foster transparency, and facilitate interaction between the government, businesses, and citizens. It is instrumental in e-taxation (United Nations, 2022).

Electronic Cash Register (ECR)

ECRs are digital devices used by businesses to record sales and automatically transmit data to the NRA. This ensures transparency and reduces GST underreporting (NRA, 2020).

Fiscal Decentralisation

Fiscal decentralisation is the devolution of tax authority to local governments to enhance service delivery and accountability (Bird and Vaillancourt, 2008).

Integrated Tax Administration System (ITAS)

ITAS is an end-to-end digital platform adopted by the NRA for taxpayer registration, filing, and compliance monitoring (Kamara and Kamara, 2023).

National Revenue Authority (NRA)

The NRA, established in 2002, is Sierra Leone's main tax collection agency responsible for domestic tax and customs management (NRA, 2020).

Non-Tax Revenue

This refers to income from sources other than taxes, such as licenses, fees, royalties, and profits from state enterprises (IMF, 2019).

Public Trust in Taxation

Public trust measures confidence in the fairness and accountability of the tax system. High trust levels correlate with better compliance (Torgler, 2007).

Revenue Mobilisation

This is the process of generating government income through taxes and other instruments to fund services and development (Gupta, 2007).

Tax Administration System

A tax administration system includes the legal, institutional, and technological structures used for registration, collection, and enforcement (Bird, 2010).

Tax Avoidance

Tax avoidance is the use of legal strategies to minimise tax liabilities by exploiting loopholes or gaps in legislation (Murphy, 2011).

Tax Compliance

This term refers to taxpayers' fulfillment of their tax obligations, including timely filing and accurate reporting (OECD, 2001).

Tax Evasion

Tax evasion is the illegal act of avoiding taxes by under reporting income or failing to file returns, undermining national revenue (Alm and Martinez-Vazquez, 2003).

Tax Policy Reform

Tax policy reform is the revision of tax laws to increase equity, efficiency, and collection—often involving digital tools (Bird and Zolt, 2005).

Taxpayer Identification Number (TIN)

A TIN is a unique number assigned to taxpayers to facilitate tracking, compliance, and information sharing (NRA, 2020).

Tax Evasion in the NRA Context

Within the NRA, tax evasion encompasses illicit actions such as under-reporting, omission of returns, and manipulation of income to avoid legal obligations (NRA, 2021).

Administrative Inefficiencies

These include outdated systems, weak data integration, and staffing issues that impair tax system effectiveness (Fjeldstad and Heggstad, 2012).

Low Taxpayer Morale

Low morale is reflected in reluctance to pay taxes, driven by corruption, poor governance, and lack of visible public services (Torgler, 2005).

Preamble

In the twenty-first century, the transformation of public sector institutions through digital governance has become a defining feature of modern governance systems. Across the world, governments are embracing information and communication technologies (ICTs) to enhance transparency, accountability, and service delivery. Nowhere is this transformation more critical than in the area of **tax administration**, which forms the fiscal backbone of every economy. Efficient, transparent, and inclusive tax systems are crucial for ensuring the equitable distribution of resources, maintaining public services, and achieving national development objectives.

In many developing countries, including **Sierra Leone**, tax administration has historically been plagued by challenges such as administrative inefficiencies, limited taxpayer compliance, widespread corruption, and inadequate data management systems. These problems have constrained domestic revenue mobilisation, making the country heavily dependent on external aid and concessional financing. Recognising the urgent need to strengthen its fiscal capacity, the Government of Sierra Leone has adopted **digital governance** as a strategic reform pathway to modernise public administration and improve tax collection efficiency.

Digital governance refers to the systematic use of ICT tools to transform the design, implementation, and monitoring of government services and policies. In the context of taxation, it encompasses innovations such as electronic filing systems, online payments, automated audits, and integrated databases that allow for real-time monitoring and reporting. These digital reforms aim to simplify compliance, reduce leakages, and restore public confidence in the tax system.

To this end, the **National Revenue Authority (NRA)** has introduced several flagship digital initiatives, including the **Integrated Tax Administration System (ITAS)**, **Electronic Cash Registers (ECRs)**, and the **Automated System for Customs Data (ASYCUDA World)**. The ITAS provides an end-to-end online platform that enables taxpayers to register, file returns, and make payments digitally, thereby reducing human interference and corruption. ECRs automate sales recording, ensuring accuracy in Goods and Services Tax (GST) remittances, while ASYCUDA World streamlines customs processes, allowing importers and exporters to conduct transactions electronically.

These digital innovations represent a decisive shift from traditional, paper-based tax administration toward a more technology-enabled, data-driven model of governance. Evidence from early implementations indicates improvements in efficiency, transparency, and compliance rates. For instance, Sierra Leone's tax-to-GDP ratio has improved modestly over the past decade, from approximately **12% to 14.6%** reflecting gains associated with enhanced administrative systems and increased taxpayer engagement.

However, despite these achievements, several challenges persist. Limited internet access, low levels of digital literacy, and weak infrastructure continue to undermine full adoption, particularly among small and informal businesses. Concerns around data security and institutional trust also hinder the creation of a fully digitised tax ecosystem. These realities underscore the need for deeper research into how digital governance can be optimally harnessed to strengthen **tax compliance and revenue mobilisation** in Sierra Leone.

Against this backdrop, this study critically examines the **impact of digital governance** on tax compliance and revenue mobilisation in Sierra Leone. It evaluates how key digital interventions such as ITAS, ECRs, and ASYCUDA World have transformed the efficiency of tax administration, influenced taxpayer behaviour, and contributed to the country's fiscal performance. Furthermore, the study examines the barriers and opportunities associated with this digital transition, offering actionable policy recommendations for establishing an inclusive, technology-driven tax system that fosters national development.

Ultimately, this study seeks to demonstrate that digital governance is not merely a technical reform but a transformative instrument for nation-building, one that has the potential to bridge the gap between citizens and the state, foster accountability, and secure the financial sustainability necessary for Sierra Leone's socio-economic progress.

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CERTIFICATION

I, **Albert Harrison Harvey**, hereby certify that this dissertation is my original work, prepared for the award of a Master of Science (M.Sc.) in Public Policy at the African University of Science and Technology, Abuja, Nigeria. The Research, titled *The Impacts of Digital Governance in Strengthening Tax Compliance and Revenue Mobilisation in Sierra Leone*, was conducted under the expert guidance and supervision of Dr. Lanre Adebayo as main supervisor and Professor Ngozi Egbuna as Co Supervisor in partial fulfilment of the requirements for the M.Sc. in Public Policy degree.

I further affirm that this work has not been submitted, in whole or in part, to any other academic institution for the award of any degree or qualification. Additionally, all sources consulted have been properly acknowledged and referenced in accordance with academic integrity standards.

STUDENT:

Albert Harrison Harvey

Signature: _____

Date: _____

Main Supervisor:

Dr. Lanre Adebayo

Signature: _____

Date: _____

Co Supervisor:

Professor Ngozi Egbuna

Signature: _____

Date: _____

APPENDIX

RESEARCH QUESTIONNAIRE

Title: The Impacts of Digital Governance in Strengthening Tax Compliance and Enhance Revenue Mobilisation in Sierra Leone

Researcher: Albert Harrison Harvey

Institution: African University of Science and Technology, Abuja

Program: M.Sc. Public Policy

Supervisors: Dr. Lanre Adebayo & Prof. Ngozi Egbuna

Confidentiality: All responses were treated with strict confidentiality and used solely for academic purposes.

SECTION A: RESPONDENT'S BACKGROUND INFORMATION

1. Gender:

- A. ☐ Male
- B. ☐ Female
- C. ☐ Prefer not to say

2. Age:

- A. ☐ 18–25
- B. ☐ 26–35
- C. ☐ 36–45
- D. ☐ 46–60
- E. ☐ 60+

3. Occupation: _____

4. Current Role in the Tax System:

- A. ☐ NRA Staff
- B. ☐ Taxpayer
- C. ☐ Consultant
- D. ☐ Government Official
- E. ☐ ICT/Systems Specialist
- F. ☐ Other: _____

5. Years of Experience in the Tax Environment:

- A. ☐ Less than 2 years
- B. ☐ 2–5 years
- C. ☐ 6–10 years
- D. ☐ Over 10 years

SECTION B: DIGITAL GOVERNANCE TOOLS IN TAX ADMINISTRATION

6. Are you familiar with the following digital platforms used by the NRA?

- i. **ITAS** | ☐ Not Aware ☐ Aware but not used ☐ Used occasionally ☐ Frequently used
- ii. **ECR** | ☐ Not Aware ☐ Aware but not used ☐ Used occasionally ☐ Frequently used
- iii. **ASYCUDA World** | ☐ Not Aware ☐ Aware but not used ☐ Used occasionally ☐ Frequently used

7. How effective do you perceive the following systems to be in supporting tax administration?

- i. **ITAS** | ☐ Very Ineffective ☐ Ineffective ☐ Neutral ☐ Effective ☐ Very Effective
- ii. **ECR** | ☐ Very Ineffective ☐ Ineffective ☐ Neutral ☐ Effective ☐ Very Effective
- iii. **ASYCUDA World** | ☐ Very Ineffective ☐ Ineffective ☐ Neutral ☐ Effective ☐ Very Effective

8. What challenges have you observed in the implementation of these systems?

- A. ☐ Inadequate infrastructure
- B. ☐ Poor digital literacy among users
- C. ☐ System downtimes
- D. ☐ Resistance to change

E. ☐ Other: _____

SECTION C: TAX COMPLIANCE

9. Have digital systems (e.g., online portals, e-filing, e-payments) made it easier for taxpayers to comply with tax obligations?

- A. ☐ Strongly Agree
- B. ☐ Agree
- C. ☐ Neutral
- D. ☐ Disagree
- E. ☐ Strongly Disagree

10. Which of the following compliance behaviours have improved due to digital systems? (Select all that apply.)

- A. ☐ Timely filing of returns
- B. ☐ Accurate reporting of income
- C. ☐ Payment of taxes
- D. ☐ Access to tax information
- E. ☐ Others: _____

11. In your opinion, what motivates tax compliance the most?

- A. ☐ Simplicity of digital platforms
- B. ☐ Fear of penalties
- C. ☐ Improved trust in the NRA
- D. ☐ Awareness campaigns
- E. ☐ Peer influence

12. What barriers still hinder compliance despite digital interventions?

- A. ☐ Lack of access to the internet/devices
- B. ☐ Complex interfaces
- C. ☐ Technical issues during transactions
- D. ☐ Poor user support
- E. ☐ Other: _____

SECTION D: REVENUE MOBILISATION

13. Has the use of digital tools contributed to increased revenue collection for the government?

- A. ☐ Strongly Agree
- B. ☐ Agree
- C. ☐ Neutral
- D. ☐ Disagree
- E. ☐ Strongly Disagree

14. Which of the following outcomes have you observed as a result of digital governance in tax?

- A. ☐ Expanded taxpayer base
- B. ☐ Improved audit trails
- C. ☐ Reduced leakages
- D. ☐ Enhanced transparency
- E. ☐ All of the above

15. Please rate the overall impact of digital governance on revenue mobilisation:

- A. ☐ Very Poor
- B. ☐ Poor
- C. ☐ Fair
- D. ☐ Good
- E. ☐ Excellent

SECTION E: INSTITUTIONAL AND POLICY ISSUES

16. What institutional challenges hinder the successful deployment of digital tools in the NRA?

- A. ☐ Budget constraints
- B. ☐ Lack of skilled personnel
- C. ☐ Resistance to change
- D. ☐ Coordination issues
- E. ☐ Other: _____

17. Are existing policies supportive of digital transformation in tax governance?

- A. ☐ Yes
- B. ☐ No
- C. ☐ Not Sure

18. What additional reforms or interventions do you recommend to improve digital governance in tax administration?

SECTION F: FINAL THOUGHTS

19. What is your general perception of the National Revenue Authority's efforts in embracing digital governance?

- A. ☐ Very Negative
- B. ☐ Negative
- C. ☐ Neutral
- D. ☐ Positive
- E. ☐ Very Positive

20. Any additional comments or suggestions on how digital governance can better support tax compliance and revenue growth in Sierra Leone?

☒ Thank You for Participating!

Your input will contribute significantly to improving tax policy and governance in Sierra Leone.

January 4 2025

Dear Participant,

Introduction and Welcome Note

Thank you for taking the time to participate in this important study on **"The Role of Digital Governance in Strengthening Tax Compliance and Revenue Mobilisation in Sierra Leone."** Your insights and experiences are invaluable in understanding how digital governance tools shape tax administration, improve compliance, and enhance revenue collection in the country.

This questionnaire is specifically designed to gather data from key stakeholders in tax administration and compliance. Through your responses, we aim to:

- i. To evaluate the impact of digital governance initiatives, such as ITAS, ECR, and ASYCUDA World, on tax compliance and revenue mobilisation in Sierra Leone.
- ii. To identify the challenges and opportunities associated with implementing digital governance in tax administration and their effects on taxpayer behaviour.
- iii. To assess the effectiveness of digital governance policies in improving tax collection efficiency and propose strategies to enhance future digital adoption in Sierra Leone's revenue system.

Your participation is crucial! Please answer all questions **honestly** and to the best of your knowledge. All responses will be treated with **strict confidentiality** and used **solely for academic research purposes**.

We sincerely appreciate your time and contribution to this study. Your feedback will help shape recommendations for improving tax governance and revenue mobilisation in Sierra Leone.

I appreciate your cooperation!

Best regards,

Albert Harrison Harvey

Student – M. Sc in Public Policy

African University of Science and Technology, Abuja, Nigeria