Evaluating the Pathways for Enhancing Tax Revenue (Property Tax) in Liberia

Case Study: Bong, Nimba, Grand Bassa, Margibi, and Montserrado Counties

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Acronyms

GDP----------Gross Domestic Product

IMF ----------International Monetary Fund

CMI ----------, Chr. Michelsen Institute

LEITI----------Liberia Extractive Transparency Industries Initiative

FY----------Fiscal Year

LRA----------Liberia Revenue Authority

GIS---------- Geographic Information System

LGA---------- Local Government Act

OECD ----------Organization for Economic Co-operation and Development

AVM---------- Automated Valuation Model

TFP---------- Total Factor Productivity

NGO ----------Non-Governmental Organization

CSO----------Civil Society Organization

ANOVA---------- Analysis of Variance

GLM----------Generalize Least Method

SPSS----------Statistical Package for Social Sciences

LRA----------Liberia Revenue Authority

MFDP----------Ministry of Finance and Development Planning

LLA----------Liberia Land Authority

MIA----------Ministry of Internal Affairs

ARREST---------- Agriculture, Roads, Rule of Law, Education, Sanitation, and Tourism

LISGIS---------- Liberia Institute of Statistics and Geo-Information Services

Abstract

Property tax is a critical yet underutilized source of local government revenue in Liberia, despite its potential to provide stable, predictable, and sustainable financing for essential public services. This study evaluates the pathways for enhancing property tax revenue in five (5) counties in Liberia namely: Bong, Nimba, Grand Bassa, Margibi, and Montserrado Counties using a mixed-methods approach that combines qualitative and quantitative analyses. Quantitatively, data were collected from 3,679 respondents, and four key factors were examined as influencing real property tax enhancement, they are: Enhancing real property tax, serving as the dependent variable and situational tax compliance, tax compliance and tax awareness representing the independent variables. Using a Generalized Linear Model (GLM), the results show that situational tax compliance negatively affects real property revenue enhancement by ($\beta = -0.836$, $p < 0.001$), while tax compliance ($\beta = 0.991$, $p < 0.001$) and tax awareness ($\beta = 0.975$, $p < 0.001$) positively and significantly enhance real property revenue respectively. The study also conducted a correlation analysis between demographic characteristics (age, gender, income, education, and marital status) and taxpayer compliance behavior, awareness and situational compliance and overall compliance in enhancing real property tax. The result show, that there is a moderate positive relationship between situational compliance and demographic characteristics ($r = 0.634$, $p < 0.01$), a weak positive relationship between tax compliance and demographics ($r = 0.472$, $p < 0.01$) and a moderate positive correlation between tax awareness and situational compliance ($r = 0.618$, $p < 0.01$), and a strong positive correlation between enhancing real property tax and overall compliance ($r = 0.904$, $p < 0.01$). These findings underscore the importance of promoting taxpayer awareness, strengthening compliance mechanisms, and implementing targeted policy interventions to optimize property tax revenue mobilization in Liberia.

Keywords: Tax Compliance, Real Property, Revenue, Enhancement, Awareness

Note: *This document underwent a peer review session with key stakeholders, including the Ministry of Finance and Development Planning, the Board of Tax Appeals, and the Liberia Revenue Authority.*

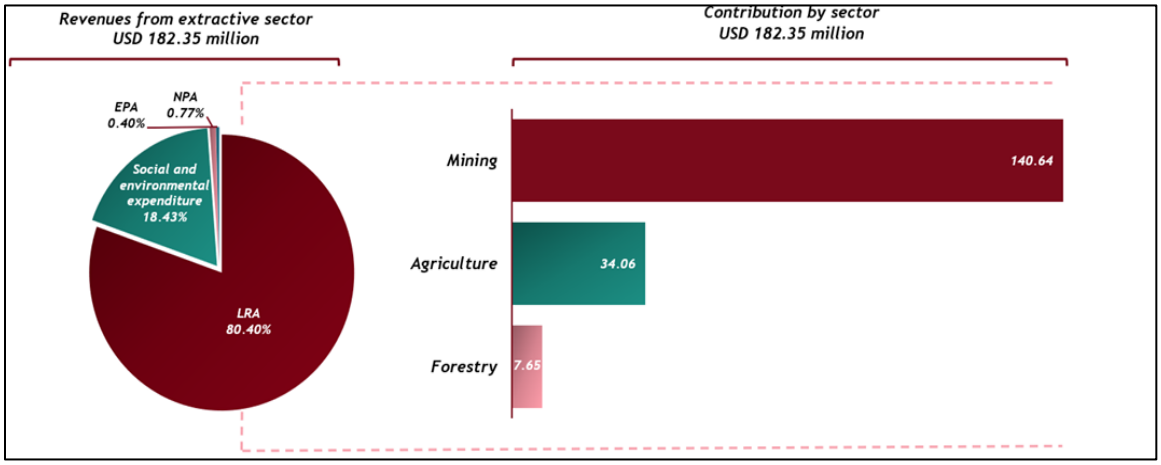
CHAPTER ONE: INTRODUCTION

Background to the Study

Property tax is a long-standing and widely adopted revenue source for local governments globally, offering theoretical benefits like stability, predictability, and simpler administration. Its immobile tax base deters evasion, and the direct link between services and payments enhances local government accountability to citizens. However, despite these advantages, property taxes are significantly underutilized in developing nations. According to (IMF, 2024a), emerging markets collect property tax revenues averaging only about 4 percent of GDP, while low-income countries continue to face infrastructure financing gaps amounting to nearly 16 percent of GDP. Furthermore, research demonstrates that property tax rises on average revenues of less than 1% of GDP in developing countries, with many African countries performing even below this threshold ((CMI), 2019).

In Liberia, the collection of real property tax faces multiple challenges in mobilizing sufficient domestic revenue to fund essential public services and implement development plan. The country's overreliance on external aid and international trade taxes has weakened fiscal independence and created vulnerabilities in public financing. Building tax capacity, including policies, institutional, and technical capabilities to collect revenue, is part of a wider process of nation building that is essential for achieving the sustainable development goals (IMF, 2023). Among the various sources of domestic revenue, real property tax represents a significant yet underutilized potential stream. According to the 2021–2022 LEITI Report, the majority of Liberia's revenue is derived from the extractive industries including agriculture, forestry, mining, and oil and gas which collectively account for about 56.61% of GDP, 17.16% of total domestic revenue, and 80% of total revenue. These earnings primarily come from licenses as well as various sectoral and administrative fees.

Figure 1:***STRUCTURE OF REVENUES FROM THE EXTRACTIVE SECTOR***



Source: LEITI Reporti

Property taxation offers a stable, predictable and sustainable source of revenue that can contribute meaningfully to financing infrastructure, education, healthcare, and other essential public service (Holtz & Ordu, 2022).

Despite this potential, real property tax collection in Liberia remains minimal. A review of tax data between FY 2005/2006 and FY 2023 shows that the total actual collection for taxes on property amounted to only $60.8 million, averaging approximately $3.2 million per year. In contrast, "Taxes on Income and Profit" amounted to $2,270.2 million, "Taxes on International Trade" to $2,393.6 million, and "Taxes on Goods and Services" to $790.9 million over the same period. The highest recorded property tax collection per year is $5.9 million in FY 2020/2021. This demonstrates that revenue from this source has remained far below its potential.

The magnitude of the underperformance is striking when examined comparatively. Between FY 2005/2006 and FY 2023, property tax generated only $60.8 million compared to over $2 billion from income and trade taxes, representing less than 3% of the revenue from these other sources. This demonstrates the system's persistent inability to tap into the substantial property tax base that exists, particularly in urban areas with significant commercial and residential development.

The Liberia Revenue Authority consistently reports low collections due to inadequate support for the real property tax division. Key issues hindering effective collection include weak enforcement mechanisms, limited property valuation capacity, the absence of a comprehensive property database and digital mapping system for property identification and assessment, and low public

awareness leading to poor compliance (LRA 2022). Discussions with the Real Property Tax Division at LRA also further revealed, that lack of funding, insufficient GIS technology, and an ineffective legal and regulatory framework hinder efficient administration. According to (Monkam & Mangwanya, 2024), digital tools present opportunities for boosting the impact of fiscal decentralization in Africa's local economies, yet Liberia has not fully leveraged these technological solutions. Enforcement efforts are also constrained by inadequate staffing, limited training, and insufficient resources such as vehicles and fuel. Some studies emphasized that institutional capacity determines not only the efficiency of tax collection but also taxpayer trust and compliance (Moore, et al., 2015) etc. Weak coordination among the Ministry of Internal Affairs, Legislature, Judiciary, and county authorities, coupled with taxpayers' perception that government services do not benefit them, exacerbates the problem. According to some research, taxpayers' willingness to pay is strongly tied to their trust in government and the perceived fairness of the tax system (Ali et al., 2014) etc.

Moreover, the expansion of real property tax administration across counties is hampered by the non-implementation of the Local Government Act (LGA) and Revenue Sharing Law, while the absence of county transitory accounts undermines equitable revenue distribution. Excessive exemptions, the lack of a cadastral system, inadequate community services, limited political will, and persistent political interference further weaken property tax administration and revenue collection.

The urgency of improving property tax performance in Liberia has also been heightened by the passage of the Local Government Act (LGA) in 2018, which initiated a major decentralization program transferring significant political, administrative, and fiscal responsibilities from central to local governments. Fiscal decentralization is becoming a pressing issue in a number of countries in sub-Saharan Africa, reflecting demands for a greater local voice in spending decisions and efforts to strengthen social cohesion (Ogawa, Sabo, & Ncube, 2018). The LGA explicitly earmarks real property tax revenue as one of the primary own-source revenue streams for county, city, and township governments, making effective property taxation critical for successful decentralization. Recent research on fiscal decentralization in sub-Saharan Africa identifies administrative capacity, revenue assignment, and intergovernmental coordination as critical determinants of successful local revenue mobilization (Ogawa, Sabo, & Ncube, 2018).

Geographic disparities further complicate the problem. Most counties, except Montserrado, have limited administrative presence for property tax collection, and valuation practices are inconsistent. This concentration of collection capacity creates horizontal imbalances and undermines the decentralization program's objectives. This is another area that needs further research. Recent research on fiscal decentralization's influence on public spending structure demonstrates that geographic variation in revenue capacity significantly affects local government performance (Onana et al., 2024).

During the research, it became evident that situational tax compliance was seen as one of the key factors that affect taxpayers' willingness to pay. This process is shaped by their immediate circumstances, perceptions, and experiences which plays a significant role in influencing property tax payment behavior. Factors such as perceived fairness of the tax system, trust in government, quality of public services, economic constraints, and social influence were observed to affect whether individuals comply or choose to evade. This finding underscores the importance of examining situational compliance as a key dimension of taxpayer behavior, as it provides deeper insight into the motivations and barriers that drive property tax payment decisions in Liberia.

However, this consistent underperformance highlights structural inefficiencies and missed opportunities for domestic resource mobilization in Liberia. The gap between potential and actual collection in Liberia represents not only foregone revenue but also a missed opportunity to strengthen fiscal decentralization and improve local governance.

Given these challenges, it is imperative to evaluate the existing property tax system, identify its limitations, and provide evidence-based strategies that can enhance efficiency, compliance, and revenue yield. This study seeks to fill that gap in the five selected counties namely, Montserrado, Nimba, Bong, Grand Bassa, and Margibi. These counties were selected based on their infrastructure, population, and economic activities. These counties provide a representative overview of the property tax collection environment in Liberia and serve as a foundation for national-level policy recommendations. Recent studies on fiscal decentralization and local government financial management emphasize the critical importance of effective revenue systems for successful decentralization (Hummel & Kusumasari, 2025), making views from these county-level analysis particularly relevant for understanding implementation challenges and opportunities.

Broadly, the study seeks to provide evidence-based pathways and strategies for enhancing real property tax revenue mobilization across Bong, Nimba, Grand Bassa, Margibi, and Montserrado counties. Specifically, the study also assesses the impact of situational tax compliance on real property tax revenue in Liberia and to examine the extent to which general tax compliance influences revenue generation. It also seeks to determine the effect of tax awareness on real property tax performance and to analyze the relationship between demographic characteristics (age, gender, income, education, and marital status) and both situational and general tax compliance. Additionally, the study explores the relationship between tax awareness and situational compliance, investigates the link between mechanisms for enhancing real property tax and overall tax compliance, and describes the demographic characteristics of real property taxpayers in Liberia, highlighting their implications for tax behavior.

However, while the study highlights broader structural and institutional challenges, the study did not investigate deeper issues such as administrative capacity constraints, weak enforcement systems, technological limitations including the absence of a digital property database—poor intergovernmental coordination, geographic disparities in tax administration, inadequate implementation of the Local Government Act and Revenue Sharing Law, excessive exemptions, and political interference. These areas remain outside the study's scope and represent important directions for future research.

This study is important for several reasons, it provides empirical evidence on the factors influencing real property tax revenue in Liberia, including situational and general tax compliance, tax awareness, and demographic characteristics. It highlights how taxpayer perceptions, trust, and immediate circumstances affect compliance, offering insights for targeted awareness campaigns and interventions. The study also provides evidence-based recommendations for improving tax administration, enforcement, and digitization, which can enhance revenue mobilization and public service delivery. Additionally, it contributes to the academic literature on taxation in developing countries and identifies areas for future research, such as geographic disparities and technological capacity.

The study is structured into five chapters. Chapter One introduces the research, outlining its context, problem, objectives, questions, significance, scope, limitations, and key definitions. Chapter Two reviews existing literature, covering theoretical and conceptual frameworks, and

empirical evidence from international and African studies published between 2015 and 2025. Chapter Three details the research methodology, including design, population, sampling, data collection tools, and analysis methods. Chapter Four presents the findings and analysis, focusing on current property tax performance in five counties, identifying challenges, and assessing stakeholder views. Chapter Five summarizes the findings, offers policy recommendations with recent innovations, and suggests avenues for future research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theoretical, conceptual, and empirical literature relevant to understanding property taxation in Liberia and evaluating enhancement pathways. The review focuses exclusively on recent works from 2015-2025 to ensure recommendations reflect current best practices and recent reform experiences. The chapter is organized into five main sections. Section 2.2 examines theoretical foundations of property taxation.

2.2 Theoretical Foundations

2.2.1 Benefit Theorem of Taxation

The Benefit Theory provides a fundamental justification for property taxation by linking tax payments to benefits received from government services. Under this theory, developed through the work of economists dating to Adam Smith, taxes should be levied based on the benefits individuals or entities receive from government services. Property owners are expected to contribute through taxes proportionate to the benefits they derive from public infrastructure such as roads, sanitation, security, and other amenities that enhance property values and community welfare.

Fischel (2015) in his work Zoning Rules! The Economics of Land Use Regulation argues that U.S. property taxes align with the benefit of theorem when tax rates reflect localized service quality, supported by hedonic pricing studies indicating 10-15% higher property values in well-serviced districts. This alignment encourages voter support for taxation through a perceived quid pro quo, with a 0.8 correlation found between service quality and tax compliance. However, he warns that exemptions for high-value properties compromise equity, favoring wealthier owners and leading to significant revenue losses in some cities.

Contrasting arguments highlight the theorem's limitations in developing countries, where administrative constraints and governance failures disrupt the tax-benefit linkage. Goodfellow (2015) critiques the benefit theorem's applicability in Rwanda and Ethiopia, where property tax revenues fail to match service provision due to incomplete cadasters and elite capture, per qualitative audits showing huge revenue leakage. He argues that without transparent allocation of tax revenues to visible services, the theorem collapses, as residents perceive taxes as extractive

rather than reciprocal, lowering compliance in surveyed Kigali wards. Conversely, Monkam and Mangwanya (2024), propose that digital cadastral systems can restore the theorem's relevance by improving valuation accuracy and linking taxes to service delivery, citing a revenue increase in Kenyan pilot cities via GIS-based assessments. Yet, they acknowledge that weak institutions limit scalability, with most African municipalities lacking digital capacity, suggesting the theorem's efficacy hinges on governance reforms.

2.2.2 Ability-to-Pay Principle

The Ability-to-Pay Principle, rooted in classical economic thought, asserts that individuals should be taxed based on their capacity to bear the tax burden. Property tax aligns with this principle since real estate ownership generally indicates a certain level of wealth. The more valuable the property, the higher the owner's ability to pay taxes. This theory supports the use of progressive valuation systems that reflect fair contributions based on property worth.

Recent scholars emphasize the ability-to-pay principle's importance for achieving equity objectives in tax systems. The IMF (2023) notes that progressive property taxation can contribute to broader distributional goals while generating revenue. However, implementation challenges arise when property wealth does not correlate perfectly with income, potentially creating liquidity constraints for asset-rich but income-poor households, particularly retirees or farmers.

The principle also connects to broader discussions of fiscal decentralization and local economic development. Monkam's (2025) research on fiscal autonomy and sustainable development in South Africa demonstrates that property taxation based on ability-to-pay principles, when combined with visible service improvements, can enhance both revenue generation and development outcomes. The key is ensuring that valuation systems accurately reflect property values and that relief mechanisms protect genuinely vulnerable populations.

2.2.3 Fiscal Decentralization Theory

Fiscal Decentralization Theory suggests that local governments are best positioned to administer property taxes because they understand local needs and can effectively allocate revenue for community development. The theoretical foundations, articulated by scholars like Oates, emphasize that decentralized provision of public services better matches services to local

preferences and enhances efficiency. Property taxation serves as the primary candidate for local own-source revenue due to its immobile tax base and benefit linkages.

Recent works on fiscal decentralization in sub-Saharan Africa by Ogawa et al. (2018) provides empirical grounding for these theoretical insights. Based on case studies from Kenya, Nigeria, South Africa, and Uganda, the research identifies critical determinants of successful decentralization: adequate own-source revenues for local governments to fulfill assigned responsibilities; clear assignment of revenue sources with meaningful local autonomy; administrative capacity sufficient for revenue collection and financial management; and accountability mechanisms linking local revenue to service delivery.

However, the theory also acknowledges significant implementation challenges in developing country contexts. Weak local governance and limited administrative capacity often undermine decentralization's benefits (Larsala & Chaka, 2025). The systematic review of decentralization in Africa emphasizes that while decentralization by devolution remains a global development approach, African countries face persistent challenges including limited local capacity, inadequate revenue systems, and weak accountability mechanisms. Strengthening local institutions therefore becomes key to improving property tax performance and ensuring accountability.

2.2.4 Optimal Taxation Theory

The Optimal Taxation Theory emphasizes designing tax systems that balance efficiency and equity while minimizing economic distortions. Property taxes, being less distortionary and difficult to evade compared to income or trade taxes, fit well within an optimal tax framework. They provide a steady and predictable revenue source that can enhance fiscal stability when properly administered. Recent research reinforces property taxation's position within optimal tax frameworks. The OECD's (2022) comparative assessment of housing taxation demonstrates that property taxes generate minimal economic distortions compared to taxes on labor or capital, making them attractive from efficiency perspectives. Mengden & Nieder (2025) analysis shows that high property taxes levied on buildings can discourage infrastructure investment, but moderate rates on land and improvements balance revenue generation with economic efficiency.

The IMF's (2024) analysis of how property taxes can help low-income countries develop emphasizes their role in optimal tax systems for developing countries. With emerging markets facing infrastructure financing needs equal to 4 percent and low-income countries facing 16

percent of GDP, efficient property taxation offers meaningful financing without severe economic distortions. Large cities such as Delhi and Lagos demonstrate practical application of these principles, showing that improved property tax administration can generate substantial revenues while maintaining economic efficiency.

2.3 Conceptual Frameworks

2.3.1 Understanding Real Property Tax Systems

Real property tax is a levy on the ownership or occupation of land and buildings, typically based on the assessed value of the property. It serves multiple purposes: generating revenue for government operations and local services; promoting efficient land use by increasing costs of holding underutilized property; ensuring fairness in wealth distribution by taxing property ownership as an indicator of ability to pay; and creating fiscal linkages between local governments and citizens that strengthen accountability.

The effectiveness of property taxation depends on several interconnected elements. Recent research emphasizes that property tax systems must integrate policy design, administrative capacity, and institutional arrangements (IMF, 2023). Policy design encompasses decisions about tax base definition, valuation methodology, rate structures, and exemptions. Administrative capacity includes property identification and database development, assessment and valuation procedures, billing and collection systems, enforcement mechanisms, and taxpayer services. Institutional arrangements involve fiscal federalism structures, intergovernmental coordination, governance quality, and political economy factors.

In Liberia, real property tax is legally recognized under the Liberia Revenue Code (Revised 2011) and administered by the Liberia Revenue Authority. However, its contribution to total tax revenue has remained marginal, often below 3% of total tax receipts based on the FY 2005/2006 to FY 2023 data showing only $60.8 million collected compared to over $5 billion from other tax sources. This reflects challenges across all three dimensions: policy design complexity, limited administrative capacity, and institutional weaknesses.

2.3.2 The Role of Property Valuation and Registration

A key determinant of effective property tax administration is a comprehensive and up-to-date property registry. In most developing countries, property records are either incomplete or outdated,

making it difficult to assess the real value of properties. Research shows that countries that have introduced digital cadastral systems and geospatial mapping have significantly improved their property tax base coverage and valuation accuracy (Muller, 2020).

Zebong et al. (2017) emphasize this in their African-focused study, using case studies from Kenya and Sierra Leone to argue that digital valuation systems, such as GIS-based cadastral mapping, improve tax base coverage. Their analysis shows that automated valuation models (AVMs) reduce assessment errors, enhance equity by aligning tax liabilities with property values, though they note that high setup costs and technical capacity gaps limit adoption in most African municipalities. The authors advocate for hybrid valuation approaches combining market data and area-based assessments to balance precision with feasibility in resource-constrained settings.

Additionally, recent scholars also emphasize that valuation methodology must balance accuracy, administrative feasibility, and political acceptability. The CMI (2019) study on property taxation in developing countries notes that while market value approaches remain theoretically optimal, practical considerations in thin property markets favor area-based or hybrid approaches. Many African countries struggle with implementing market value-based systems due to limited comparable sales data and assessment capacity. In Liberia, the property registry remains largely manual, fragmented, and non-integrated with local government databases. This limits transparency, leads to undervaluation, and facilitates tax evasion. A comprehensive assessment by Kiazolu (2022) documents that the LRA's property database contains only approximately 25,000 properties, representing a tiny fraction of actual taxable properties.

2.3.3 Administrative and Institutional Capacity

Administrative weaknesses, including low budgetary support to the real property tax division and limited manpower, remain major obstacles to efficient property tax collection. These include inadequate staff training, weak monitoring mechanisms, and limited coordination between central and local authorities. Recent research emphasizes that institutional capacity determines not only the efficiency of tax collection but also taxpayer trust and compliance (Moore, et al., 2015).

The IMF's (2023) in-depth study on building tax capacity in developing countries provides a framework for understanding these challenges. Tax capacity encompasses policy capabilities (designing appropriate tax systems), institutional capabilities (establishing effective revenue authorities and coordination mechanisms), and technical capabilities (implementing modern

administration systems). The research shows that an increase in tax-to-GDP ratio is feasible through combined tax system reform and institutional capacity building, but achieving this requires sustained investment across all three capability dimensions. In Liberia, the LRA and municipal governments often operate with limited logistical and technical support. The Ministry of Finance and Development Planning's (2023) report highlights that most counties except Montserrado have limited administrative presence for property tax collection. The absence of effective enforcement mechanisms further reduces compliance levels and encourages informal property ownership outside the tax net. Recent research on fiscal decentralization and local government financial management emphasizes that capacity building must be prioritized early in decentralization processes to avoid fiscal sustainability problems (Fouopi Djiogap et al., 2024).

2.3.4 Public Perception and Compliance Behavior

Public perception and compliance behavior are critical determinants of property tax system effectiveness, as they shape taxpayers' willingness to meet obligations and influence revenue outcomes. The theoretical framework posits that positive perceptions of fairness, transparency, and tangible service benefits enhance voluntary compliance, while distrust or perceived inequity erodes it. Monkam and Mangwanya (2024) argue that public perception in African contexts, such as Kenya and Uganda, is heavily influenced by visible service delivery tied to tax revenues. This clearly means that when services are provided, citizens feel a greater obligation to pay their taxes. Their analysis of household surveys shows that municipalities using digital platforms to transparently link property taxes to infrastructure improvements saw an increase in compliance rates, with most respondents citing trust in governance as a key motivator. However, they note that weak communication and corruption perceptions, evidenced by a huge revenue leakage in audited councils, undermine compliance, particularly among low-income households, who reported a higher distrust in tax fairness due to elite exemptions.

In support, Manga Amougou et al. (2025) also emphasize the detrimental impact of corruption on compliance behavior, particularly in developing economies. Using generalized least squares panel models (GLS) across 213 Cameroonian communities, they found that a 10 percent increase in perceived corruption reduces property tax compliance by 12 percent, driven by eroded trust in municipal authorities, as confirmed by survey data showing 70% of taxpayers believe funds are misallocated. They argue that compliance hinges on perceived equity and accountability, with

education and income levels amplifying awareness of mismanagement, lowering compliance elasticity by 0.3. While digital reforms, like those in Monkam and Mangwanya's study show promise, Manga Amougou et al. caution that without anti-corruption measures such as transparent audits, technological interventions fail to restore trust, with 40% of surveyed communities reporting persistent non-compliance despite digital innovations.

In Liberia, limited awareness of property tax laws, combined with the perception that government services do not directly benefit taxpayers, contributes to widespread evasion. The LRA (2022) identifies limited taxpayer education and weak civic engagement as significant impediments to compliance.

2.4 Empirical Evidence

2.4.1 Global Perspectives on Property Tax Performance

Globally, property taxes contribute significantly to local government revenues in developed countries. Recent research shows that in OECD countries, property tax accounts for substantial portions of local revenue, with some jurisdictions collecting 1-3% of GDP through property taxation (OECD, 2022). The United States, Canada, and the United Kingdom maintain well-established computerized property registries, transparent valuation systems, and effective enforcement mechanisms that enable this performance.

Conversely, in low-income countries, the IMF (2024) analysis of 50 emerging markets reveals property taxes contribute just 0.3 percent of GDP on average, which is far below potential, due to incomplete registries covering only 20-40 percent of urban properties; geospatial interventions in Delhi and Lagos boosted yields by 25-35 percent via improved valuation accuracy, per difference-in-difference estimates. These findings highlight a performance gradient: high in revenue buoyancy for urbanizing economies but low in equity when exemptions favor elites, as seen in the World Bank (2020) regressions linking governance scores to 15-20% revenue shortfalls.

The difference is stark in economies like China, where pilot studies reveal context-dependent outcomes that challenge universal efficiency claims. Du and Zhang (2015) pioneered this discourse with a quasi-experimental analysis of Shanghai's broad-based pilot (2011-2014), finding a 2.5 percent annual decline in housing price growth through instrumental variable regressions on transaction data, attributing it to reduced speculation and enhanced affordability; however, they

observed no significant total factor productivity (TFP) gains, suggesting short-term liquidity constraints. In contrast, Zhu et al. (2022) examined Chongqing's luxury-focused pilot using synthetic control methods on provincial panel data (2003-2020), uncovering a 10-12 percent price surge in non-targeted segments due to substitution effects, which stimulated factor inputs but eroded TFP by 1.5-2 percent exacerbating inequality (Gini rise of 0.02 points). This polarity fuels debates on base design: broad bases promote equity but risk over-burdening middle classes, while narrow ones distort market toward inefficiency.

Administrative capacity emerges as a recurring theme in the literature, with scholars debating whether digital reforms can bridge global performance gaps or merely mask deeper institutional flaws. McCluskey et al. (2019) advocate optimism in their cross-country study of Kenya, Tanzania, and Zambia, employing propensity score matching on municipal data (2015-2018) to show ICT-integrated cadasters increased revenue by 18-22 percent through 30 percent better compliance, without raising rates, positioning property taxes as viable for fiscal decentralization. Yet, Goodfellow (2015) critiques this technocentric view in his comparative case of Kigali and Addis Ababa, using qualitative process-tracing and revenue audits (2010-2014) to argue land-leasing hybrids outperform standalone taxes by 40% in yield but entrench elite capture, reducing net performance amid corruption – evident in 15 percent leakage rates. Furthermore, Hernandi et al. (2025) test spatial analytics in Indonesia's Lebak Regency via geographically weighted regressions (2019-2024), reporting 25 percent revenue increase and Gini reductions of 0.03, yet warn of scalability limits in rural areas where dearth of data inflates errors by 10-15 percent. Monkam & Mangwanya (2024) synthesize these tensions in an African meta-analysis, finding that digital tools amplify performance (revenue elasticity of 1.2) only under strong governance, a call echoed in ongoing debates for hybrid reforms blending technology with accountability.

2.4.2 Fiscal Decentralization Experiences in Sub-Saharan Africa

Studies reveal a mixed landscape, where decentralization has driven revenue mobilization and growth in select contexts but often falters due to institutional weaknesses and uneven implementation. Hobdari et al. (2018), in their IMF analysis of four case studies (Kenya, Nigeria, South Africa, Uganda), employ panel regressions across 44 countries (1990–2015) to show that decentralization correlates with 0.5–1% higher annual GDP growth when institutional quality exceeds the regional median, attributing this to improved local service delivery and urbanization

rates as key enablers. However, they found no growth dividend in low-institution environments, where subnational spending autonomy averages only 15–20 percent of total expenditures, leading to a 10–15% revenue leakages from poor accountability. Similarly, Prichard (2015) used cross-national econometric models on tax compliance data from 20 SSA countries, demonstrating that decentralized tax authority boosts domestic revenue through enhanced bargaining and representation, particularly in post-conflict settings like Sierra Leone, though elite capture reduces net gains in Federal Republic like Nigeria.

The debate sharpens around decentralization's role in conflict mitigation and industrial development, with authors highlighting conditional benefits versus structural barriers. Yimenu (2023) analyzed Ethiopian fiscal data (1995–2020) via decomposition techniques, and found that ethnic-driven decentralization increased regional own-source revenues but widened vertical imbalances, with central transfers comprising 70% of subnational budgets and contributing to a 15% rise in inter-regional disparities.

This contrasts with Mbate (2022), drawing on Kenyan county-level difference-in-differences (2013–2019), argue that while bloc reforms like the Mount Kenya Economic Bloc raised public goods spending by 18%, free-riding behaviors among counties eroded redistributive equity, increasing Gini coefficients by 0.02–0.03 in underperforming areas

For, Liberia, fiscal decentralization in terms of revenue sharing has not been effective. Although the Revenue Code of Liberia (2000, as amended) provides the general framework for domestic revenue collection, the practical implementation of revenue sharing between the central government and local governments has faced persistent challenges.

The Revenue Sharing Law of 2021 approved in July 2022, specifically mandates that natural resource revenues designated for sharing among counties should not be deposited into the Consolidated account, but rather into a Transitory Account at the Central Bank of Liberia for subsequent distribution. Article 4, Chapter 6 of the Act states:

“Natural resource revenues designated to be shared amongst the counties shall not be deposited in the central government’s Consolidated Account at the Central Bank. They shall first be deposited into a Transitory Account to be established at the Central Bank for later distribution amongst Local Governments. (Revenue Sharing Law of Liberia, 2021, Art. 4, Ch. 6).

However, in practice, no dedicated accounts have been established for the counties, and all revenues continue to be deposited directly into the Consolidated Account. This has undermined the intent of the law and limited the fiscal autonomy of subnational governments. Article 5 of the same law provides that:

"Each Local Government shall have established at the Central Bank an account for the receipt of fund directed to it."(Revenue Sharing Law of Liberia, 2021, Art. 5).

Despite these legal provisions, the absence of operational county accounts and the centralization of all collected revenues in the Consolidated account have made the revenue-sharing mechanism ineffective. As a result, fiscal decentralization remains largely unimplemented, constraining local development and service delivery at the county level.

2.4.3 Regional Property Tax Reform Initiatives

Recent African property tax reforms provide practical insights for Liberia. Rwanda's comprehensive reform between 2018-2022 represents one of Africa's most ambitious digitalization efforts. The government conducted nationwide property enumeration using GPS and satellite imagery, established computer-assisted valuation, and implemented modern payment platforms. While comprehensive evaluations remain limited, available evidence suggests substantial revenue increases (Holtz & Ordu, 2022). However, Rwanda's success depended on factors potentially unavailable elsewhere: strong political commitment, substantial external funding, small geographic size, and high administrative capacity.

Tanzania's incremental approach offers contrasting lessons. Rather than comprehensive system overhaul, Tanzanian cities pursued focused administrative improvements: systematic property surveys using low-cost methods, strengthened enforcement targeting high-value properties, improved payment channels, and strategic communication. These efforts produced steady revenue growth without requiring extensive technical capacity or external funding. This incremental approach may be more sustainable and replicable for countries with severe capacity constraints.

Research on fiscal decentralization's influence on public spending structure in Cameroon provides additional insights. Manga Amougou's (2025) study of 213 regional and local authorities demonstrates that fiscal decentralization's effectiveness depends critically on local revenue

generation capacity. Property taxation emerges as the most stable and administratively feasible local revenue source, though implementation challenges vary significantly across municipalities based on urbanization, economic activity, and administrative capacity.

2.4.4 Empirical Evidence from Liberia

Empirical evidence from Liberia indicates that property tax remains a largely untapped revenue source. Between FY 2005/2006 and FY 2023, property tax generated approximately $60.8 million, averaging only $3.2 million annually, compared to over $2 billion from income and trade taxes. The highest annual collection of $5.9 million in FY 2015/2016 demonstrates persistent inability to tap into the substantial property tax base, particularly in urban areas with significant commercial and residential development.

Kiazolu's (2022) comprehensive assessment identifies several impediments: incomplete and outdated property rolls with the LRA database containing only approximately 25,000 properties; limited taxpayer education and weak civic engagement; inconsistent valuation practices with systematic undervaluation documented through reassessments; political interference and elite resistance to taxation; logistical constraints including inadequate budgetary support and limited trained personnel; and weak enforcement mechanisms hampered by judicial inefficiencies.

A report by the Ministry of Finance and Development Planning (MFDP, 2023) further highlights that most counties, except Montserrado, have limited administrative presence for property tax collection. Moreover, valuation practices are inconsistent, and enforcement mechanisms are weak. These findings underscore the need for comprehensive reform targeting valuation systems, taxpayer engagement, and administrative modernization.

2.5 Recent Innovations in Property Tax Administration

2.5.1 Digital Tools and Technology Applications

Recent innovations in property tax administration, particularly the adoption of digital tools and technology applications, have significantly transformed revenue collection and valuation accuracy across diverse global contexts, though their efficacy hinges on institutional and technical capacity.

The debate surrounding digital innovations centers on their ability to bridge administrative gaps versus their potential to exacerbate inequities without robust governance. Monkam and Mangwanya (2024) analyze Kenyan and Ugandan pilots using household surveys, found that

digital cadasters linked to transparent service delivery increased property tax yields by 30% and compliance by 25%, particularly in urban areas where 60% of taxpayers reported higher trust. However, they cautioned that 40% of municipalities failed to scale due to corruption and capacity gaps, with 15% revenue leakages undermining equity, as low-income households faced 20% higher relative burdens. In contrast, Manga Amougou et al. (2025) used generalized least squares on 213 communities to argue that corruption erodes digital reform benefits, reducing compliance by 12% per 10% rise in perceived graft, with 40% of communes showing persistent non-compliance despite digital cadasters. Their findings suggest that technological gains are fragile without anti-corruption measures, as evidenced by 70% of taxpayers citing fund misallocation as a compliance deterrent.

A parallel discourse examines whether digital tools can sustain long-term revenue gains or merely offer short-term boosts vulnerable to institutional decay. Zebong et al. (2017) used case studies from Kenya and Sierra Leone to show that GIS-based mapping expanded tax base coverage by 20–30% and reduced valuation errors by 15%, enabling hybrid valuation models that balance market and area-based assessments. However, they highlight that 70% of African municipalities lack the technical capacity for sustained maintenance, leading to outdated registries within 3–5 years. This tension fuels a broader debate - while McCluskey et al. and Hernandi et al. champion digital tools for their precision and revenue potential, Manga Amougou et al. and Monkam and Mangwanya emphasize governance as a prerequisite for durability, with Zebong et al. advocating for hybrid approaches to mitigate cost and skill barriers.

2.5.2 Best Practices in Modern Property Tax Systems

Recent literature identifies several best practices for modern property tax systems. The Duke Center for International Development's (2025) program on fiscal decentralization and local government financial management emphasizes: comprehensive property databases maintained through regular updates; simplified valuation systems appropriate to administrative capacity; transparent billing and multiple payment channels; strategic enforcement focusing on high-value properties; taxpayer education and service programs; and clear linkages between tax revenue and local service delivery.

The Tax Foundation (2025) analysis of property taxes in Europe identifies emerging trends: broader tax bases with limited exemptions; simplified rate structures for administrative efficiency;

integration of digital tools throughout the tax cycle; and enhanced transparency through online platforms. While European contexts differ from Liberia, these trends indicate the direction of global best practice.

Recent research emphasizes that successful property tax modernization requires phased approaches. The IMF (2023) study recommends starting with basic improvements (property surveys, simplified valuation, computerized databases) before advancing to sophisticated applications (AI valuation, blockchain registration). This sequencing allows capacity to develop gradually while delivering early wins that build stakeholder support.

Despite growing recognition of the importance of property tax in domestic resource mobilization, particularly following recent emphasis by international organizations on building tax capacity for sustainable development (IMF, 2023), significant gaps remain in the literature that limit understanding of property tax challenges and reform opportunities in specific country contexts. While the reviewed literature provides valuable theoretical frameworks, international best practices, and comparative experiences from various African countries, several critical knowledge gaps persist that this study seeks to address.

Current research on property tax collection in Liberia suffers from significant empirical gaps, particularly regarding local-level factors and variations. While global and regional studies offer general insights into property tax challenges in developing countries and sub-Saharan Africa's fiscal decentralization experiences, most Liberian studies focus broadly on revenue mobilization without examining specific property tax dynamics. Kiazolu's (2022) study provides the most comprehensive recent analysis, documenting national challenges like incomplete property databases, systematic undervaluation, and weak enforcement, but relies primarily on national-level data and policy analysis. This approach fails to capture how challenges differ across Liberia's diverse local contexts, including variations between urban and rural areas, high-capacity versus low-capacity regions, and resource-rich versus resource-poor counties. Despite recent literature emphasizing that successful fiscal decentralization requires understanding local variations in administrative capacity, political economy, and socioeconomic contexts, county-level empirical analysis of property tax performance across different Liberian environments remains absent from existing research.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology employed to evaluate pathways for enhancing real property tax revenue in Liberia. The study adopts a mixed-methods research design combining qualitative and quantitative approaches to provide comprehensive analysis of property tax challenges and opportunities across five counties.

3.2 Research Design

Mixed-methods research is particularly appropriate for exploring complex social phenomena where numerical data alone cannot capture the full picture of challenges and opportunities (Creswell & Creswell, 2018, p.12). The design enables triangulation of findings from multiple sources, enhancing validity and providing richer insights than either approach alone could offer.

The mixed-methods design is in this research merges quantitative analyses of revenue collection data with qualitative insights into administrative challenges and stakeholder perceptions. This combination is essential for understanding public attitudes and compliance, as quantitative methods alone are insufficient. Utilizing varied data sources increases the reliability of findings amidst prior data quality issues. This methodology aligns with current fiscal decentralization research, emphasizing both administrative and institutional factors, and adheres to IMF recommendations for assessing tax capacity by integrating quantitative and qualitative evaluations.

The study utilizes a multiple-case study approach to investigate property tax administration in five Liberian counties: Montserrado, Nimba, Bong, Grand Bassa, and Margibi. This methodology is well-suited for examining contemporary real-world phenomena where the boundaries between the subject and its context are unclear. The counties were purposively selected to represent Liberia's diverse contexts, with Montserrado representing highly urbanized areas, Nimba and Bong representing interior counties with significant populations and economic activity, and Grand Bassa and Margibi serving as intermediate cases with mixed urban-rural characteristics. This selection strategy facilitates cross-case comparison to identify patterns and contextual factors that influence property tax performance, aligning with current research trends in fiscal decentralization that emphasize examining performance variations across different geographical and economic contexts.

3.3 Study Population and Sampling

The study population consists of various stakeholders in property tax administration across five counties:

- Tax Administration Officials from national and county offices responsible for management, assessment, collection, and enforcement.
- Local Government Officials, including county and municipal representatives involved in governance and services funded by property taxes.
- Property Owners, both compliant and non-compliant, in residential, commercial, and industrial sectors.
- Civil Society Organizations such as NGOs focused on governance and public services.
- Development Partners from international and bilateral entities aiding fiscal reform and decentralization in Liberia.

Given the mixed-methods design, sample sizes differ for quantitative and qualitative components:

For the property owner survey, sample size was determined using Yamane's formula for finite populations:

$n = N / (1 + N(e)^2)$

Where:

- n = sample size
- N = population size (estimated taxable properties in five counties)
- e = margin of error (0.05)

Based on estimates of taxable properties in the five counties and accounting for non-response, a target sample of 4000 property owners was established, distributed proportionally across counties based on property concentrations.

For key informant interviews and focus group discussions, sample sizes followed saturation principles common in qualitative research. Target numbers were: 25-30 key informant interviews with tax officials, local government representatives, and other stakeholders; and one-on-one discussion with property owners.

Stratified random sampling was used for property owner survey across five counties, classifying properties by type (residential, commercial, industrial) and location (urban, peri-urban, rural). This approach ensured representative coverage through a LRA property database enhanced by local expertise. For qualitative data, purposive sampling targeted key informants based on their expertise in property tax administration, including LRA officials, local government, CSOs, and development partners.

3.4 Data Collection Methods

The study employed three primary methods of data collection: structured surveys, semi-structured interviews, and direct observation. These approaches were designed to capture both quantitative and qualitative information relevant to property tax administration and compliance in the selected counties. Quantitative data were collected using a digital tool, KoboCollect, which facilitated efficient data entry, accuracy, and real-time monitoring during fieldwork.

3.4.2 Data Collection Procedures

Survey Administration: Trained enumerators administered surveys face-to-face with selected property owners. This approach was chosen over self-administered surveys to ensure high response rates, clarify questions where needed, and reached respondents with limited literacy. Enumerators received two-day training covering: survey objectives and methodology; questionnaire content and administration procedures; ethical considerations and informed consent; and data quality and verification procedures.

Survey administration occurred over a 10-day period, with daily supervision and quality checks. Completed questionnaires were reviewed for completeness and consistency before data entry.

Key Informant Interviews: Interviews were conducted by the principal researcher and trained research assistants, lasting 45-90 minutes each. Interviews were conducted in participants' offices or other convenient locations. With participant consent, interviews were audio-recorded and supplemented with detailed notes. Where recording was declined, comprehensive notes were taken during and immediately after interviews.

3.5 Data Analysis Methods

Survey data was entered into SPSS (Statistical Package for Social Sciences) version 26 using double-entry procedures to minimize errors. Data cleaning involved: checking for out-of-range

values; identifying and addressing missing data; verifying consistency across related variables; and creating derived variables as needed.

Descriptive statistics characterized property tax system performance and survey respondent characteristics: frequencies and percentages for categorical variables; means and standard deviations for continuous variables; cross-tabulations examining relationships between variables; and geographic disaggregation of key indicators by county.

Descriptive analysis addressed research questions regarding current performance levels, public awareness patterns, compliance rates, and variations across contexts.

Chi-square tests examined associations between categorical variables (e.g., property type and compliance status; awareness levels and payment behavior). Independent samples t-tests and ANOVA assessed differences in continuous variables across groups (e.g., compliance rates across counties; perceived fairness by property owner category).

Correlation analysis explored relationships between variables such as awareness, perceptions of service delivery, and compliance. Logistic regression analysis identified predictors of compliance behavior, including demographic factors, property characteristics, awareness levels, and attitudinal variables.

Qualitative data was analyzed using thematic analysis following established procedures (Braun & Clarke, 2006).

Systematic coding of data segments identifying features relevant to research questions. Coding was both deductive (applying concepts from conceptual framework) and inductive (identifying emergent themes not anticipated in advance).

Grouping codes into potential themes representing patterns of meaning across the dataset. Themes aligned with the three conceptual framework dimensions (policy design, administrative capacity, institutional environment) while remaining open to emergent patterns.

Policy and legal documents were analyzed using content analysis techniques, systematically examining provisions relevant to property tax administration and comparing with international best practices identified in literature review.

3.6 Generalized Linear Models (GLMs)

The Generalized Linear Models (GLMs) extend the traditional linear regression framework to accommodate response variables that do not necessarily follow a normal distribution. They provide a flexible approach to modeling relationships between a set of predictors and various types of dependent variables.

This research on real property tax explored the use some of modelling alternatives found in the current Literature of Manning and Mullahy, 2001, they compared models for estimating the exponential conditional mean by what method the log of the estimated value of γ varied with observed covariates of X. That analysis compared a range of GLM alternatives with log links under a variety of data conditions that researchers often encounter in such as health care cost and socioeconomic data. Basu, Manning, and Mullahy, 2003, considered comparing the gamma with a log link, and an alternative from the survival model literature using the Cox proportional hazard regression. In both papers, they proposed a set of tests that can be employed to select among the competing estimators, because there was not a single estimator found dominates the other alternatives or is a close second best.

The set of models to be selected is that they assume independent relationship (or at least uncorrelated) among observations. The observations are assumed to be independent in blocks of fixed or known sizes. As a result, data displaying the assistant of the auto correlations of time series and spatial processes are expressly excluded. This hypothesis of independence is part of the characteristics of the linear models of the classical regression analysis, without modification which is imported to the wider class of generalized linear models. The models also assume categorical one single error term structure. The choice of scale for analysis is also important, for instance a choice between analyses of $Y -$ (Property tax payment at time t) of the original scale, or log Y.

Applying the GLM, normality and constancy of variance are no longer required before testing the model, even though the way in which variance depends on the mean must be known. Additionally, effects can be specified to hold on a transformed scale if necessary. Another problem involves the choice of the covariates (x −variables) to be included in the systematic part of the model. Mostly, we have a given number of candidate covariates $xl, x2, \bullet\bullet\bullet, xp$ and we are required to find a subset of these that in some sense are best for constructing the fitted values

$$\hat{\mu} = \sum x_j \widehat{\beta_j} \qquad \textbf{eq.1}$$

3.7 Components of a Generalized Linear Model

Generalized linear models are an extension of classical linear models. A vector of an n-turple observations y is assumed to be a realization of a random variable Y whose components are independently distributed with means $\boldsymbol{\mu}$ **.** The systematic part of the model signifies a specification of the vector p, in terms of a small number of unknown parameters such as $31, 32, \bullet\bullet\bullet, \iota 3_p$, this indicating that the model specification takes the form of equation (3.2) Where they are assumes to be the output of parameters whose values are usually unknown and have to be estimated from the data. If we allow the index j symbolizes observation, the systematic part of the model can be rewritten as

\

$$\hat{\mu} = \sum_{i=1}^{p} (x_j \, \beta_j) \qquad \textbf{\textit{eq.2}}$$

Where β_j subjects to be the parameter whose values are usually unknown and have to be estimated from the data. Considering that we let the index " j "denotes observation, the systemic part of the model can be written as follow:

$$E(Y\iota) = \hat{\mu} + \sum_{i=1}^{p} (x_j \, \beta_j)$$

$$i = 1, \ldots n \qquad \textbf{eq.3}$$

Where x_{ij} is the value of the jth covariates for observation I, in matrix nation (where μ is $n\ x\ p$ and β is a $px1$)

We assume independence and a constant variance of mistakes for the random portion.

Strong assumptions necessitate verification (diagnostics).

Similar to this, the systematic part's structure makes the assumption that we are aware of the cov ariates that affect the mean and are capable of accurately measuring them; this assumption must a lso be verified. The three GLM model specifications are typically as a model.

3.8 Goodness of fit

3.8.1 The analysis of deviance

The GLM parameters are frequently estimated using maximum likelihood estimation. The log-predictor through the link function, thus maximum likelihood estimates of the parameters may be obtained by using the likelihood function of $l(y;\theta,\varphi) = log(fY(y;\theta,\varphi))$ depends on the parameters in the linear via maximizing l with respect to the parameters in the linear predictor. Likewise, the approximations of standard errors of the parameters are based on using asymptotic maximum likelihood theory. The procedure of choosing a model also uses methods, which are approximations, based on maximum likelihood theory. The analysis of variance is highly a valuable technique for screening the effects of factors and their interactions. Researchers frequently rely on the $\chi 2$ approximation in order to account for the differences between deviances for most coated models.

A model that has areas of many parameters as observations so that the fitted values are equivalent to the observed values is said to be saturated.

Therefore, in such a situation, researchers can also compare the probability under any model with the likelihood under a saturated model to see whether a model is enough for retelling a set of facts.

A saturated model's feature makes use of the same distribution and link function as the selected Assume that LS and LM are the likelihood functions of the saturated and current models assessed at their ideal parameter values. If the model is perfect, the likelihood may be around the value of LS that the value of LM is much smaller than the value of LS and it assumed that the likelihood ratio statistic will be large.

The natural log of the likelihood ratio statistic model, which has more parameters due to data points and so matches the data precisely, might also be tested further by the researchers. LS/LM specifies the ratio statistic. The value of LM should be close to the value of LS if the current model adequately describes the data; if not, the likelihood ratio statistic will be high and the value of LM will be significantly less than the value of LS. The likelihood ratio statistic's natural log could also be examined.

$$\log \frac{L_S}{L_m} = l_S - l_M \qquad \textbf{eq.4}$$

Where $S = logLS\ and\ lM = logLM$. The scaled deviance is defined as twice the difference between the log-likelihood of the model under consideration and the saturated model. The decision on which model to use usually begins with a consideration of the deviances for a range of models, the smaller the deviance, the better the model.

3.9 Omnibus Test

Instead of evaluating particular differences between pairs of groups, an omnibus test is a statistical test designed to ascertain whether there are any differences among several groups. As a first step for further in-depth comparisons, this kind of test is essential when researchers wish to determine whether at least one group mean differs from the others without identifying which ones.

1. The omnibus test merely shows that there is a significant difference between the groups; it does not identify which groups are different.

2. An example of an omnibus test is typically the F-test used in One-Way ANOVA.

3. Researchers do post hoc tests for additional analysis when an omnibus test yields a significant result.

4. When conducting research with three or more groups, omnibus tests are especially helpful because pairwise comparisons would be too numerous.

5. When an omnibus test rejects the null hypothesis, it indicates that at least one group mean differs significantly, which calls for more research.

In multiple regression analysis, the omnibus test serves as an ANOVA F test for all coefficients, which is analogous to the multiple correlations R Square F test. The omnibus F test provides an overall assessment of model fit, so not rejecting the null hypothesis indicates that the proposed linear model does not suitably represent the data. This suggests that none of the independent variables have been found to be significant in accounting for the variation in the dependent variable. These hypotheses assess the fit of the most prevalent model.

$y_i = \beta_0 + \beta_1 x_{i1} + \ldots + \beta_k x_{ik} + \varepsilon_{ij}$ **eq.5**

estimated by:

$E(y_i/x_i x_i, \ldots, x_{ik}) = \beta_0 + \beta_1 x_{i1} + \ldots + \beta_k x_{ik}$, **eq.6**

Where: $E(y_i/x_i x_i, \ldots, x_{ik})$

Is the dependent variable explanatory for the $i - th$ observation, x_{ij} is the $j - th$ independent (explanatory) variable, β_1 is the j-th coefficient of x_{ij} and indicates its influence on the dependent variable y upon its partial correlation with y.

The F statistics of the omnibus test is:

For a regression model with **k** predictors and **n** observations: **eq.7**

$$F = \frac{SSR/K}{SSE/(N-K-1)}$$

Where

SSR =$\sum_{i=1}^{n}(\hat{y}_i - \bar{y})^2$ =Regression Sum of Squares

SSE =$\sum_{i=1}^{n}(\hat{y}_i - \bar{y}_J)^2$=Error (Residual) Sum of Squares

k = number of predictors

n= sample size

Regression Mean Square (MSR):

$$\text{MSR}= \sum_{i-1}^{n} (\hat{y}_i - \bar{y})^2 / K \qquad \textbf{eq.8}$$

Error Mean Square (MSE):

$$\text{MSE}= \sum_{i=1}^{n}(\hat{y}_i - \bar{y}_J)^2 / (n-K-1) \qquad \textbf{eq.9}$$

$$\text{F}= \frac{MSR}{MSE}$$

$$F = \frac{\sum_{i-1}^{n} (\hat{y}_i - \bar{y})^2 / K}{\sum_{i=1}^{n}(\hat{y}_i - \bar{y}_J)^2 / (n-K-1)}$$

Whereas, ȳ is the overall sample mean for $yi, \hat{y}i$ is the regression estimated mean for specific set of k independent (explanatory) variables and n is the sample size.

The F statistic is distributed $\boldsymbol{F_{(K,n-k-1)}}$, $(\boldsymbol{\alpha})$ under assuming of null hypothesis and normality assumption.

Multiple linear regression model assumptions sampling at random

The errors $\mathbf{e_{ij}}$ have a normal or nearly normal distribution.

The explanatory errors of $\mathbf{e_{ij}}$= 0> E(eij) = 0. The mistakes $\mathbf{e_{ij}}$have equal variances.

This is an omnibus F test, similar to the Levene F test.

The meaning of explanatory and predictor variables is not multi-collinear: cov(xi, xj)=0

For any i or j.

CHAPTER FOUR

4.1 Tests of Model Effects (GLM)

The Tests of Model Effects of the Generalized Linear Models (GLM) offers acute information about which predictor variables in the model have statistically significant and the direction of the relationship independent variables with the dependent variable in the output. This test is meant of providing strong interpretation of the empirical findings in the table below, the research concerned with three components, source considered explanatory variables TS_Co, T_Comp and T_Awar, Wald Chi-Square gives account of the coefficient, and significance shows the significant levels of the independent variables.

$\boldsymbol{H_0}$= the H_0 states that the coefficients for a specific effect or the entire model are equal to zero

While, $\boldsymbol{H_1}$= the alternative hypothesis states that the coefficients are not zero.

4.1.1 Model Specification

This section considered the variables inputted in the model with respect to the research focused (Real property tax), in an instance case, the equation 3.5 which is written as:

$$y_i = \beta_0 + \beta_1 x_{i1} + \ldots + \beta_k x_{ik} + \varepsilon_{ij}$$

The research incorporated equation 3.5 as long it separated the dependent variable (y_i from the independent variables by inputting situational tax compliance, Tax compliance, Tax Awareness and Enhancing Real Property tax. Therefore, the equation was rewritten as:

$$\boldsymbol{T_RPT_i = \beta_0 + \beta_1\, TS - Comp_i + \beta_2 T - Comp_i + \beta_3 T - Awer_{ij} + \varepsilon_{ij}}$$

eq.10

Where $\boldsymbol{T_RPT_i}$ is the dependent variable representing y_i, define as enhancing Real Property Tax, $\boldsymbol{\beta_0}$ is the intercept, $\boldsymbol{\beta_1\, TS - Comp_i}$ denotes tax situational compliance of real property tax, $\boldsymbol{\beta_2 T - Comp_i}$ signifies tax compliance, $\boldsymbol{\beta_3 T - Awer_i}$ indicates Tax Awareness and Training, while $\boldsymbol{\varepsilon_{ij}}$ shows unexplained variables that were to be included in the model but still in the error term.

Table I : Case Processing Summary

		N	%
Cases	Valid	3614	95.4
	Excluded[a]	175	4.6
	Total	3789	100.0

a. Listwise deletion based on all variables in the procedure

Source: LIMPAC's Computation

The dataset originally contained 3,789 cases (respondents). Out of these, 3,614 cases (95.4%) were valid for the analysis. This means these cases had complete data for all variables included in the procedure. 175 cases (4.6%) were excluded due to missing or incomplete responses on one or more of the variables used in the reliability test. The note "List wise deletion based on all variables in the procedure" means that SPSS automatically removed any case that had missing data on any of the items analyzed.

The dataset used for the reliability analysis is strong and representative since over 95% of the data were valid, indicating minimal missing information and reliable data quality for further statistical analysis.

Table II: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.905	5

Source: LIMPAC's Computation

The Cronbach's Alpha value is 0.905, based on 5 items (variables). Cronbach's Alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is used to assess the reliability (or dependability) of a scale.

A Cronbach's Alpha of 0.905 indicates excellent internal consistency reliability among the 5 variables measured. This means that the items are highly correlated and consistently measure the same underlying concept. In other words, the respondents' answers to these questions are very

consistent, showing that the questionnaire used is reliable and suitable for further statistical analysis (such as correlation, regression, or descriptive statistics etc.).

The data set below represent the demographic characteristics of 3,679 valid respondents who participated in the study on evaluating the Pathways for Enhancing Real Property Tax Revenue in Liberia.

Bootstrap estimates (based on 100 samples) confirm the stability and reliability of the percentages presented.

Table III : Age Distribution of Respondents

Age Range	Frequency	Percent (%)	Cumulative (%)
18–25	589	16	16
26–35	809	22	38
36–45	952	25.9	63.9
46–55	825	22.4	86.3
Above 55	504	13.7	100
Total	**3679**	**100**	**100**

Source: LIMPAC's Computation

The table above illustrates age distribution; it shows that majority of respondents were predominantly between the ages of 26 and 55 years (70.3% combined). The largest single group category of respondents range between the ages of 36–45 years, 46–55 years, 26–35 years 18–25years and above 55 years with corresponding respondents of 952 (25.9 %), 825 (22.4%), 809 (22.0%), 589 (16.0%) and 504 (13.7%) respectively. This indicates that the majorities of respondents are economically active and are working age groups, which enhances the credibility of their views regarding taxation and property ownership.

Table IV : Education Level of Respondents

Education Level	Frequency	Percent (%)	Cumulative (%)
No formal education	888	24.1	24.1
Primary school	613	16.7	40.8
Secondary school	1060	28.8	69.6
Vocational/Technical training	484	13.2	82.8
Higher education	634	17.2	100
Total	**3679**	**100**	**100**

Source: LIMPAC's Computation

The table above shows educational level of the respondents reveals that 28.8% of respondents attained secondary education, the largest group. Another 24.1% had no formal education, while 17.2% had higher education (college or university). Additionally, 16.7% completed primary school and 13.2% had vocational or technical training.
This distribution suggests a moderately educated population, with over half (59.2%) having at least secondary or higher education, a positive indicator for awareness and understanding of taxation and civic responsibilities.

Table V : Gender Distribution

Gender	Frequency	Percent (%)	Cumulative (%)
Male	1821	49.5	49.5
Female	1858	50.5	100
Total	**3679**	**100**	**100**

Source: LIMPAC's Computation

The gender distribution table above shows 1,858(50.5%) respondents were female and 1,8221 49.5% male respondents. This near-equal representation enhances the validity of the results by reducing gender bias and ensuring diverse perspectives in during the survey. Given that women slightly outnumber men in the sample, the Liberia Revenue Authority (LRA) could consider targeting awareness campaigns toward female taxpayers**,** as they represent a slightly larger proportion of the population surveyed.

Table VI: Marital Status

Marital Status	Frequency	Percent (%)	Cumulative (%)
Single	1855	50.4	50.4
Married	1359	36.9	87.4
Widowed	284	7.7	95.1
Divorced	117	3.2	98.3
Separated	64	1.7	100
Total	**3679**	**100**	**100**

Source: LIMPAC's Computation

Over half of the respondents, 1,855 (50.4%) out of 3,679, were single, followed by 1,359 (36.9%) who were married. Smaller proportions included widowed (284, 7.7%), divorced (117, 3.2%), and separated (64, 1.7%). These results suggest that a significant portion of respondents may not have family responsibilities that directly influence property ownership, which could affect attitudes

toward property taxation and payment compliance. Therefore, the Liberia Revenue Authority (LRA) should develop targeted strategies to encourage single individuals to recognize the importance of property tax contributions, perhaps by emphasizing civic responsibility, community benefits, and the link between taxes and public services.

Table VII : Income Distribution

Monthly Income Range	Frequency	Percent (%)	Cumulative (%)
Less than $100	1804	49	49
$100–$300	1236	33.6	82.6
$301–$500	237	6.4	89.1
$501–$1000	140	3.8	92.9
Above $1000	262	7.1	100
Total	**3679**	**100**	**100**

Source: LIMPAC's Computation

The income distribution indicates that a majority of the respondents of 1,804 (49.0%) earn below $100 monthly per month, with total respondents of 1,236 (33.6%) earning $100-$300. Whereas, 237 respondents of the total 3679 respondents constituting 6.4% earn above $301-$500 per month, furthermore, 262 respondents of the total 3,679 respondents establishing 7.1% earn above $1,000.00 per month.

Finally, the lowest 140 respondents (3.4%) of the sum said; they earned $501-$1,000.00 This finding points to relatively low-income levels among respondent's potential tax payers, suggesting that affordability and economic constraints could significantly affect property tax compliance yet there are still potential tax payers and perceptions of trust in National Government during the usage of tax for public service delivery.

In summary, the sample is demographically diverse, with a balance of gender and broad age coverage. Therefore, the government should consider affordable payment plans, tax incentives, and public education programs to encourage compliance while accommodating taxpayers' financial capacity.

Correlation

The Correlation test is a standardized usual statistical technique used to appraise the relationship of the variables with each other in the model. There are different methods that are commonly useful to determine the direction of correlation test outcome, which include but not limited to, the

Kendall's correlation, Spearman's correlation (Lemenkova, 2018) and generally the Pearson's correlation. Therefore, Pearson's correlation test was considered to evaluate the relationship among variables based on the data provided.

Mostly, three components are assessed with the correlation analysis beginning with the significance, strength, and level. Firstly, the significance is measured based on the p-value, which in this case must be less than 0.05 (95% confidence interval). In accordance with the result of the correlation test, the Pearson's test result shows that p-value is less than 0.05($0.000 < 0.05$) indicating a statistically significant connection with the variables.

The level regulates the positive or negative interrelation among variables in the economic model. The existence of the '- 'symbol in the coefficient indicates a negative relation between variables, while the lack of the symbol defines a positive connection between the variables. Therefore, the strength is showed based on the value of coefficient, ranging from 0 to 1 value indicates a strong level of interconnection. While, Values ranging between 0.1 – 0.4 illustrate a weak level of interconnection, and 0.5 – 0.7 values indicate a moderate level of the association. In distinction, values above 0.7 illustrate a more vital interrelation among data used in the model.

Table VIII: Correlations

		Demo	T_Co	T_Comp	T_Awar	E_RPT
Demo	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	3792				
T_Co	Pearson Correlation	.634**	1			
	Sig. (2-tailed)	.000				
	N	3614	3614			
T_Comp	Pearson Correlation	.680**	.472**	1		
	Sig. (2-tailed)	.000	.000			
	N	3789	3614	3789		
T_Awar	Pearson Correlation	.746**	.722**	.618**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	3789	3614	3789	3789	
E_RPT	Pearson Correlation	.659**	.726**	.553**	.904**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	3789	3614	3789	3789	3789
****. Correlation is significant at the 0.01 level (2-tailed).**						
Sig. (2-tailed) = 0.000 (indicating all correlations are statistically significant at the 1% level)						
N = Number of valid responses (ranging from 3,614 to 3,789).						

Source: LIMPAC's computation

**Signifies 1% significant level

Relationship between Situational Tax Compliance and Demographic

Testing for the correlation relationships among the two variables, the result in the above table clearly shows that the Pearson Correlation Coefficient between **Situational Tax Compliance and**

Demographic is r=0.634** which dictates that; the two variables are moderately but correlate positively among the two variables in the model. Moreover, this value demonstrates a positive and significant correlation more dynamic interrelationship among data used in the model between **Situational Tax Compliance and Demographic**. The correlation is significant at a 1% level of significance as the p-value is less than alpha, i.e., 0.000 < 0.01.

Relationship between Tax Compliance and Demographic

The correlation analysis results offered in the above table shows that Pearson Correlation Coefficient **between Tax Compliance and Demographic** is r = 0.472** indicating that the two variables are positively and very weakly significant correlation relationship between **Tax Compliance and Demographic**. The correlation is significant at a 1% significance level as the p-value is less than alpha, i.e., 0.000 < 0.01.

Relationship between Tax Awareness and Tax Situational Compliance

The correlation analysis results presented in the above table show that Pearson Correlation Coefficient between **Tax Awareness and Tax Situational Compliance** is r = 0.618**, which suggests that the two variables are positively and moderately correlated. Additionally, this value specifies a positive and significant correlation between **Tax Awareness and Tax Situational Compliance**. The correlation is statistically significant at a 1% significance level as the p-value is less than alpha, that is, 0.000 < 0.01.

Relationship between Enhancing Real Property Tax and Tax Compliance

The correlation analysis results presented in the above table show that Pearson Correlation Coefficient between **Enhancing Real Property Tax and Tax Compliance** is r =0.904** which recommends that the two variables are positively and strongly correlated with each other in the model. Moreover, this value of the Pearson coefficient specifies a positive and significant correlation between **Strategies for optimizing Economic growth and Efficiency and Productivity**. The correlation is statistically significant at a 1% significance level as the p-value is less than alpha, that is, 0.000 < 0.01.

4.1.2 Goodness of Fit

Goodness of Fit tests statistically evaluates how well the model matches the observed data, with a null Hypothesis (H_0) stating that "the model fits the data adequately", on the other hand, the alternative hypothesis (H_1) states that "The model does not fit the data adequately" in reflection of the variables to be considered, the Pearson Chi-Square and Deviance tests: H_0 given the observed values do not differ significantly from values predicted by the model.

In the case of the SPSS common consideration of the null Hypothesis of the model Goodness of Fit is keen on three factors, Pearson Chi-Square, Deviance and AIC/BIC. Accounting for the Pearson Chi-Square and the Deviance in the result measures discrepancy between observed values in the model and those expected under the model and Null Hypothesis, with an observed value of 1.032 in other words, value denotes 1.0 and Deviance records 0.017 as value which evidenced on these observed values factors of significant results p-values (0.003 and 0.004) respectively as p-values are less them 0.05 which implies that the model fits the data well therefore, we failed to reject the null hypothesis against the alternative hypothesis. These findings to is supported by the Value of the AIC/BIC which shows -3988.465 indicating that the information are in Information criteria are in small-is-better form for the Goodness of fit.

Table IX: Goodness of Fit

	Value	DF	Value/df
Deviance	59.208	3540	.017
Scaled Deviance	3614.000	3540	
Pearson Chi-Square	59.208	3540	.017
Scaled Pearson Chi-Square	3614.000	3540	
Log Likelihood[b]	2301.454		
Akaike's Information Criterion (AIC)	-4452.908		
Finite Sample Corrected AIC (AICC)	-4449.686		
Bayesian Information Criterion (BIC)	-3988.465		
Consistent AIC (CAIC)	-3913.465		
Dependent Variable: E_RPT **Model: (Intercept), T_Co, T_Comp, T_Awar**			

Source: LIMPAC's Computation

Generalized Linear Models (GLM) used in an analysis in SPSS's, omnibus tests evaluate the significance level of the overall model by testing whether the explanatory variables, in totality, have a statistically significant relationship with the explained(dependent) variable, given that the rejection of the null hypothesis (H_0) implies that the model explains significant variation in the dependent variable. In contrast, the acceptance of the alternative hypothesis (H_1) means that at least one regression coefficient is not equal to zero. Founded on the output of the Omnibus test of the GLM model of overall model value is 12766.710 with a p-value of 0.000 indicating the rejection of the null hypothesis in favor of the alternative hypothesis that at least one regression coefficient is not equal to zero. This denotes that the overall model is statistically significant and best placed for onward prediction of enhancing the pathways of revenue generation from Real Property in selected counties for analysis.

Table X: Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
12766.710	73	.000

Dependent Variable: E_RPT

Model: (Intercept), T_Co, T_Comp, T_Awar

a. Compares the fitted model against the intercept-only model

Source: LIMPAC's Computation

4.1.3 Tests of Model Effects (GLM) Analysis

In an art of providing strong interpretation of the empirical findings in the table below, the research concerned with three components, source considered explanatory variables T_Co, T_Comp and T_Awar, Wald Chi-Square gives account of the coefficient, and significance shows the significant levels of the independent variables.

Firstly, the Situational Compliance to Tax payment (T_Co) has a coefficient of -0.836 and with an associated p-value of 0.000 signifying that the p-value$<$ 0.001 and statistically significant at 1% or 5% level. This submits that for every one unit increase in the Situational Compliance to Tax payment leads to 83.6% decrease on the Real Property Tax revenue in Liberia from the different

categories of real tax payers. This output is as a result from, the real property tax payers responses based on special situation such as reason they stop paying property tax, low awareness that all property are subject to real property tax, little or low understanding about the reciprocal function of real property tax, these situations helps undermines the real property tax revenue thus leading to a year-in-Year fiscal deficit between targeted and earned revenue.

The issues of tax compliance (T_Comp) obtaining in this research has a coefficient of 0.991 and with a p-value of 0.000 justifying that the p-value< 0.001 and statistically significant at 1% level. This output indicates that for every one unit increase in the tax compliance leads to 99.1% enhancement in Real Property Tax revenue generation in Liberia.

This implies that while it is tru that there are special situations that demotivate real property owners from paying taxes to government such as the citizens trust, the delivery of social services and many others, on the other hand, providing support to these services leads to improvement in enhancing real property tax thus promoting economic growth.

Accounting for the issue of tax awareness (T_Awar), the regression results indicate a coefficient of 0.975 with a p-value of 0.000, which is statistically significant at the 1% level ($p < 0.01$). This finding implies a strong positive relationship between tax awareness and real property tax revenue performance. Specifically, for every unit increase in tax awareness is associated with a 97.5% improvement in real property tax revenue generation in Liberia. This suggests that enhancing taxpayers' knowledge and understanding of their tax obligations can substantially boost revenue collection efficiency.

Table XI: Tests of Model Effects

Source	Type III		
	Wald Chi-Square	**Df**	**Sig.**
(Intercept)	6110.979	1	.000
T_Co	- 0.836	15	.000
T_Comp	0.991	26	.000
T_Awar	0.975	32	.000
Dependent Variable: E_RPT			
Model: (Intercept), T_Co, T_Comp, T_Awar			

Source: LIMPAC's Computation

Conclusion

This study explored how Liberia can boost its real property tax revenue, focusing on five key counties: Montserrado, Nimba, Bong, Grand Bassa, and Margibi. With property tax currently

contributing less than 10% to the government's total revenue, the research aimed to uncover the factors that help or hinder revenue collection. By analyzing input from over 3,600 respondents, the study provided concrete evidence on the connections between taxpayer behavior and administrative effectiveness.

Three main areas emerged as crucial for improving tax revenue: Tax Compliance, Tax Awareness, and Situational Compliance Barriers.

1. Tax Compliance was found to be the strongest predictor of revenue potential, showing an impressive 99.1% correlation. This means that increasing compliance whether through enforcement or voluntary participation could drastically enhance property tax revenue. The study revealed that the existing revenue shortfall largely stems from low compliance, not from a lack of taxable properties.

2. Tax Awareness followed closely, with a coefficient indicating that raising taxpayer awareness leads to a significant increase in revenue (97.5%). The study emphasized the importance of education, as many respondents are confused about tax obligations, which adds unnecessary complexity and costs to the system. Simplifying the tax process and improving education are not just good communication strategies, but essential for boosting revenue.

3. Conversely, Situational Compliance Barriers have a negative impact on revenue, showing that increased barriers, like distrust in government, inadequate public services, or complicated payment processes, can lead to an 83.6% revenue decline. This underscores the idea that when citizens feel they aren't receiving tangible benefits from their taxes, they become less willing to pay. Many respondents earn less than $100 a month, making them especially sensitive to these barriers.

The demographic data revealed that the tax base is predominantly young and economically active, yet it remains financially vulnerable. Nearly half of the respondents earn less than $100 monthly, emphasizing the need for progressive tax policies. Approaches that rely solely on strict enforcement, without improving public services, could alienate potential taxpayers.

To truly enhance property tax revenue in Liberia, a shift away from just enforcing regulations towards a more cooperative model is needed, one that builds trust through technology and transparency. The potential for revenue growth is substantial; however, it hinges on addressing the situational barriers that currently serve as obstacles.

Enhancing property tax revenue is more than a financial issue; it's about fostering a partnership between the government and its citizens. By making tax payments easy and demonstrating the benefits of those payments through visible local development, Liberia can transform its tax system from a marginal contributor to a fundamental element of national development. Treating taxpayers as partners in progress, rather than mere sources of revenue, is essential for bridging the gap between Liberia's current situation and its potential for growth.

Policy Recommendations

1. Enhancing Funding and Resources for Real Property Tax Administration
    - Support for funding for Real Property Tax Administration expansion in the counties to increase tax net, boost collection and revenue growth.
2. Strengthen Nationwide Tax Awareness Campaigns

Given the strong positive relationship between tax awareness and real property tax revenue ($\beta = 0.975$, $p < 0.01$), the Government of Liberia should:

- Launch sustained public awareness campaigns using radio, community outreach, social media, and local government channels.
- Produce simplified educational materials explaining who should pay, how to pay, why to pay, and the benefits of compliance.
- Collaborate with local authorities, community leaders, and CSOs to amplify messaging and ensure it reaches rural and urban taxpayers.
- Integrate tax education into school civic courses and adult literacy programs.

3. Improve Tax Compliance Systems Through Incentives and Enforcement

With tax compliance showing a strong positive impact on revenue generation ($\beta = 0.991$, $p < 0.01$), policy should focus on both motivation and enforcement:

- Introduce incentives such as discounts for early payments, recognition awards, or certificates for compliant taxpayers.
- Digitize tax registration and payment to reduce barriers and opportunities for evasion.
- Conduct regular taxpayer verification and audits to ensure all property owners are captured in the system.

4. Reduce Situational Barriers That Undermine Tax Payment

The negative coefficient for Situational Compliance to Tax Payment ($\beta = -0.836$, $p < 0.01$) indicates that social and administrative challenges significantly discourage tax payment. To mitigate these:

- Strengthen trust between citizens and the government by publishing annual reports on the use of real property tax revenue.
- Improve delivery of visible local services (roads, sanitation, community lighting) funded directly through real property tax.
- Establish taxpayer support desks in major counties to address complaints, clarify doubts, and guide new taxpayers.
- Simplify tax forms, reduce bureaucratic delays, and ensure property owners understand their tax obligations.

5. Modernize the Real Property Tax System Through Digital Transformation

To address low awareness, compliance issues, and situational barriers simultaneously:

- Develop a National Real Property Database integrated with GIS mapping and land registry information.
- Digitize tax notices, billing, reminders, and receipts.
- Enable mobile money and online payment options for easier access.
- Improve data sharing between LRA, Lands Authority, and local governments to reduce duplication and omissions.

6. Strengthen Institutional Coordination and Inter-Agency Collaboration

The study highlights coordination gaps that affect taxpayer confidence and system performance. Therefore:

- Establish a Real Property Tax Coordination Steering Committee involving LRA, MFDP, LLA, MIA, and local governments.
- Clearly define roles in taxpayer identification, valuation, billing, and enforcement.
- Create standardized procedures for sharing data, reporting, and addressing taxpayer disputes.
- Conduct quarterly review meetings to track progress and resolve bottlenecks.

7. Expand Taxpayer Engagement and Feedback Mechanisms

- Introduce annual "Taxpayer Forums" in counties.
- Deploy customer satisfaction surveys to assess service quality.
- Establish a toll-free hotline and online feedback portal.
- Build community-based property tax committees to strengthen local participation.

8. Introduce Periodic Training and Capacity Building for Tax Administrators

Improved performance depends on well-trained staff:

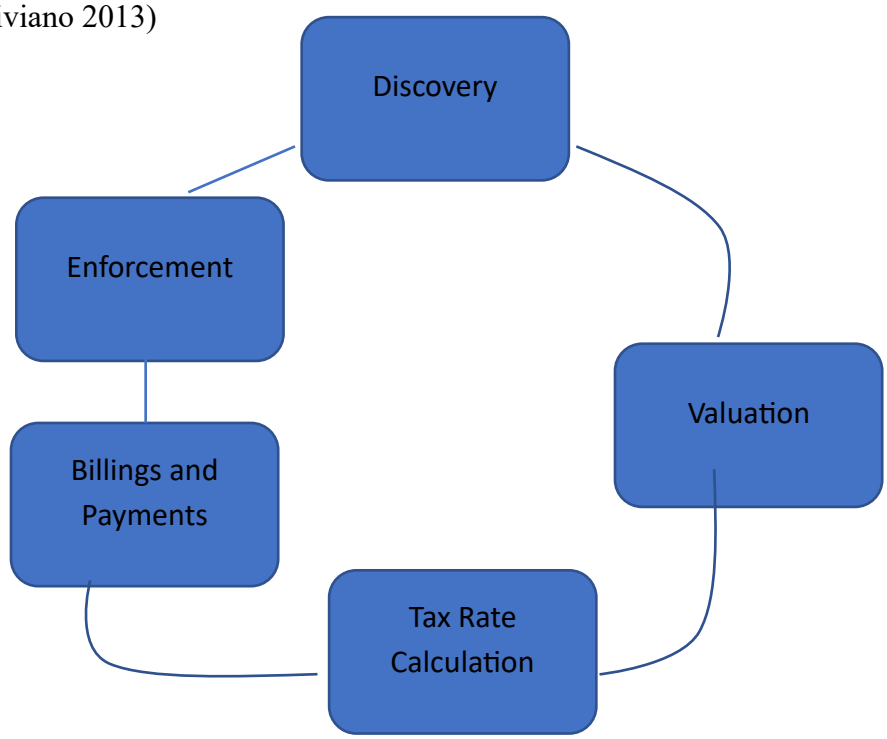
- Train tax assessors, enumerators, and teams on valuation techniques, customer service, communication, and digital tools.
- Collaborate with academic institutions and development partners for technical support.

9. Develop a five-year strategic plan that aligns with the ARREST Agenda to include the following:

- A joint inter-ministerial or inter-governmental agency strategic policy for Real Estate Tax enhancement. This should involve the full participation of the local government, properties owners, and county stakeholders.
- A comprehensive budget that will support the implementation of said policy and strategic plan
- Linking service delivery and Property taxation: A focus on enforcement and compliance by incorporating the application for basic utility such as water and electricity should be condition upon a proof (receipt) of real property tax payment. This will also broaden the tax base.
- The political will of the Government should be fully utilized. It must begin with elected and appointed government officials.

10. Development of a property tax cycle that is customary to Liberia system: These should include the following:

- **Discovery:** A property must be captured in a valuation roll. LISGIS should assist in providing the maps of the current layouts of properties and their measurements.
- **Valuation:** The current property database is incomplete, with many properties yet to be captured. Identified properties must be registered and their taxable values accurately assessed to determine the final tax bills. Since property tax is a recurring tax based on assessed values, this valuation process is central to the effectiveness of any property tax system.
- **Tax rate calculation**: should well defined and simplified.
- **Billings and Payments:** property tax bills should be distributed to tax payers directly.
- **Enforcement:** Once tax bills have been distributed, governments need to take effective enforcement action against those who do not comply by the established deadline. Without effective enforcement, 15 taxpayers will have little incentive to voluntarily comply with their property tax liabilities, both because they face no penalty for non-compliance, and because they will not believe that others are paying their fair share (Filippin, Fiorio, and Viviano 2013)



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