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Tax compliance and informal sector dynamics in Sub-Saharan Africa: Rethinking revenue mobilization for sustainable economic growth

Enoch Kojo Ackom

Department of Accounting and Finance, Valley View University, Oyibi, Accra, Ghana

Email: ackomenoch16@gmail.com

Evans O. N. D. Ocansey, PhD

Department of Accounting and Finance, Valley View University, Oyibi, Accra, Ghana

Email: endocansey@vvu.edu.gh

Felix Oppong Asamoah, PhD

Department of Accounting and Finance, Valley View University, Oyibi, Accra, Ghana

Email: felix.asamoah@vvu.edu.gh

Abstract--This study critically examines the intricate relationship between tax compliance, the informal sector, and domestic revenue mobilization within the context of sustainable economic growth in Sub-Saharan Africa (SSA). Against a backdrop of widespread informality and persistently low tax-to-GDP ratios, the research rethinks traditional revenue strategies and explores how the interaction between informality and tax administration affects fiscal and economic outcomes across the region. The primary objective is to assess the impact of informal sector prevalence on domestic revenue mobilization, investigate the link between tax compliance burdens and economic growth, and evaluate whether the effect of tax compliance varies with the level of informality. The study also aims to identify practical pathways for strengthening revenue systems in economies where informal activity is dominant. The study employs a quantitative research design, using panel data from ten SSA countries between 2010 and 2022. Variables include tax compliance (measured by hours spent on compliance), informal sector size (as a percentage of GDP), and revenue mobilization (as tax revenue-to-GDP ratio), alongside control variables such as government expenditure, political stability, and financial inclusion. The analysis utilizes the Generalized Method

of Moments (GMM) to address endogeneity, autocorrelation, and unobserved heterogeneity. Findings reveal that the informal sector significantly reduces domestic revenue mobilization, while higher tax compliance burdens negatively affect economic growth. However, the study also finds that tax compliance reforms are more effective in stimulating growth in highly informal economies, indicating a conditional relationship between informality and fiscal outcomes. Financial inclusion positively influences revenue but not short-term growth, and political stability shows no significant effect in this context. The implications are twofold: first, policy strategies should combine administrative tax reforms with broader efforts to formalize the economy, including digital financial inclusion and simplified tax regimes; second, accounting and tax research must adopt interdisciplinary and context-specific approaches to better capture the informal realities of African economies.

Keywords---Tax Compliance, Informal Sector, Revenue Mobilization, Economic Growth, Sub-Saharan Africa, Tax Policy, Financial Inclusion, Tax Administration, Informality, Generalized Method of Moments (GMM).

Introduction

Taxation remains one of the most vital instruments for financing state operations, ensuring social redistribution, and promoting economic development. However, in Sub-Saharan Africa (SSA), the persistent expansion of the informal sector and weak tax compliance pose considerable challenges to efficient revenue mobilization. As governments strive to meet rising public expenditure demands while reducing dependency on foreign aid, strengthening domestic revenue systems has become not just a policy priority but an existential economic necessity (Mpofu, 2022). The informal economy—which includes unregistered businesses, untaxed labor, and non-compliant trade—has grown in response to unemployment, poor enforcement, and low trust in institutions. It is estimated that in many SSA nations, the informal sector contributes between 30% and 60% of GDP, yet remains largely outside the tax net (Lengaram, 2023). This disconnect has far-reaching implications, not only for fiscal stability but also for equitable growth and sustainable development. Accordingly, this study seeks to rethink the tax compliance-informality-revenue nexus in Sub-Saharan Africa and explore policy pathways for sustainable economic progress.

The informal sector in SSA is not merely a marginal player—it is a lifeline for millions and a key driver of entrepreneurial activity, especially in contexts where formal employment opportunities are scarce. In countries such as Tanzania, Uganda, and Ghana, informal economic activity accounts for over 40% of GDP, providing employment to a significant majority of the labor force, especially women and youth (Gwaindepi, 2022). Despite its scale and contribution, the sector operates largely outside regulatory frameworks, rendering it both an opportunity and a policy dilemma. On one hand, informal actors offer agility, resilience, and innovation—critical attributes in economies facing structural

bottlenecks. On the other hand, the lack of registration, regulation, and tax compliance undermines state capacity, distorts markets, and hinders long-term economic planning (Mpofu, 2021). The prevalence of informality thus creates a dual economy, where one part contributes to the tax base while the other remains unaccounted for, limiting the potential for inclusive growth.

Despite growing interest in informality and tax mobilization, several research gaps persist. First, much of the existing literature remains qualitative, lacking robust statistical testing across multiple countries. There is limited comparative, quantitative evidence linking tax compliance indicators to informal sector size and revenue outcomes in SSA. For instance, while studies like Mpofu (2021) and Adu (2021) provide valuable country-specific insights, they fall short of generalizing findings across the diverse SSA landscape.

Second, methodological limitations persist in measuring informality. Many studies rely on proxies or outdated estimates, leading to inconsistencies. The application of the MIMIC model and secondary panel data, as in this study, provides a more robust empirical basis to interrogate these relationships. Moreover, key variables such as political stability, financial inclusion, and government expenditure—which critically influence tax behavior—are often excluded or treated as peripheral (Uzoechina et al., 2023). Third, there is an under-exploration of regional differences within SSA. Countries like Gabon, Mozambique, and Cameroon have unique fiscal structures and political environments that merit distinct policy considerations. A pan-African model that assumes homogeneity may misdiagnose the problem and recommend ineffective solutions (Boakye & Sarpong, 2022).

In light of these complexities, this study addresses a pressing need: to empirically examine the intersection of tax compliance, informal sector dynamics, and revenue mobilization using panel data from multiple SSA countries between 2010 and 2022. By incorporating control variables such as political stability, financial inclusion, and government expenditure, the study builds a more nuanced understanding of the determinants of tax capacity. More importantly, this research contributes to policy by offering evidence-based recommendations for improving tax compliance in a region where over-reliance on natural resources and foreign aid is increasingly untenable. As emphasized by Kalogiannidis (2021), sustainable development rests on domestic fiscal strength—not just GDP growth figures or investment inflows. Without rethinking how to tap into the informal sector, SSA's ambitions for industrialization, innovation, and inclusivity will remain largely aspirational. Ultimately, this study not only fills empirical and theoretical gaps but also responds to regional and global calls for smarter, more inclusive taxation systems. By situating its analysis within the broader goals of the Sustainable Development Goals (SDGs), especially SDG 17.1 on domestic resource mobilization, the study speaks directly to Africa's economic future in a post-COVID, climate-challenged world.

Objectives Of The Study

The following are the objectives of the study:

1. To Examine the Relationship Between Tax Compliance and Informal Sector Size Across Sub-Saharan African Countries
2. To Assess the Impact of Informal Sector Prevalence on Domestic Revenue Mobilization
3. To Analyze the Link Between Tax Compliance, Informality, and Sustainable Economic Growth

Literature Review

Tax Compliance and Informality: A Complex Relationship

The relationship between tax compliance and the size of the informal sector is inherently cyclical and multifaceted. Higher informality often correlates with lower compliance due to weak enforcement, complex tax systems, and limited taxpayer education (Adu, 2021). Informal businesses often operate under the radar, avoiding taxes not necessarily out of evasion but due to structural constraints such as lack of access to banking, digital tools, or clear regulatory information. Conversely, low compliance rates among informal actors signal a broader trust deficit between the state and its citizens. Studies indicate that perceived misuse of tax funds, lack of public services, and arbitrary enforcement further discourage formalization (Gwaindepi, 2024). As such, tax compliance cannot be viewed in isolation from institutional quality and governance effectiveness.

The Impact of Informal Sector Prevalence on Domestic Revenue Mobilization

Informality presents a significant drag on domestic revenue mobilization (DRM) in SSA. According to estimates, the region loses billions annually in potential tax revenue due to non-registration and underreporting by informal actors (Kamasa et al., 2025). For instance, Kenya and Nigeria—both with expansive informal economies—struggle to maintain tax-to-GDP ratios above 15%, far below the 20% minimum recommended for effective state functioning. Lengaram (2023) highlights that in countries with large informal sectors, tax capacity remains underutilized, even when the tax effort is deemed reasonable. This is often due to administrative inefficiencies, lack of data, and informal sector resistance. Notably, revenue mobilization efforts that ignore the nuances of informality may backfire, leading to lower compliance and increased taxpayer resentment (Kamara & Kamara, 2025). Efforts to formalize or integrate the informal economy must therefore go beyond punitive measures to include incentives, simplified tax regimes, and education campaigns. As Hammond et al. (2023) suggest, “modified taxation models” like presumptive taxes or sector-specific levies could bridge this gap if implemented transparently and inclusively.

In addition to structural challenges, the lack of trust in government institutions further exacerbates revenue shortfalls associated with informality. Many informal operators perceive the tax system as corrupt, extractive, or unaccountable—discouraging voluntary compliance and incentivizing continued evasion (Joshi et al., 2014; Oloyede & Nwachukwu, 2021). Where citizens do not see tangible

returns from public revenue, such as improved infrastructure or services, they are less likely to comply with tax obligations, especially in loosely regulated environments. This governance deficit weakens state legitimacy and narrows the tax net. Therefore, improving DRM in informal-heavy economies must also involve rebuilding fiscal social contracts, where citizens perceive taxation as reciprocal rather than exploitative. Transparent expenditure tracking, citizen engagement in budgeting, and improved public service delivery are complementary reforms that can enhance the credibility of revenue authorities.

Moreover, technological innovations offer promising avenues for bridging informal economies with formal tax systems. The rise of mobile money platforms and digital ID systems in countries like Ghana, Tanzania, and Rwanda has expanded the possibilities for low-cost tax registration, tracking, and payment (Mpofu, 2022; Ofori et al., 2021). These tools reduce the friction traditionally associated with compliance while offering informal businesses safer, faster, and traceable ways to interact with tax administrations. However, their success hinges on institutional readiness, digital literacy, and political will. When integrated thoughtfully, digital platforms can simplify processes, expand reach, and provide real-time data for tax policy design, thereby enhancing DRM without burdening micro-entrepreneurs. Therefore, embedding technological adoption within a broader ecosystem of legal reform, capacity building, and taxpayer education is crucial for inclusive and sustainable revenue mobilization strategies in SSA.

Tax Compliance, Informality, and Sustainable Economic Growth

Sustainable economic growth in SSA cannot be divorced from the dynamics of tax compliance and informality. Governments require robust and predictable revenues to invest in health, education, infrastructure, and innovation—all critical for long-term development. Yet, the twin challenges of tax avoidance and a dominant informal sector leave states fiscally constrained (Mullins et al., 2020). As shown in studies by Chimilila and Leyaro (2022), informal economies impede formal sector expansion and reduce the effectiveness of fiscal multipliers. Tax compliance, when improved, fosters trust, transparency, and legitimacy, creating a virtuous cycle of investment and growth. Moreover, innovative strategies such as e-formalization and mobile tax platforms are emerging as game changers, particularly in countries like Rwanda and Ghana, where digital transformation has facilitated better revenue tracking (Tolossa & Melese, 2024).

Equally important is the recognition that tax compliance is not merely a technical issue but a deeply social and institutional one. In many Sub-Saharan African countries, citizens' willingness to comply with tax obligations hinges on perceptions of fairness, government accountability, and the quality of public services delivered in return (Moore, 2023). Where tax systems are seen as opaque, regressive, or disproportionately targeting low-income populations, compliance deteriorates, especially within informal sectors. Informal operators often lack the incentives to register or comply when formalization does not guarantee access to credit, legal protections, or public services. Therefore, advancing sustainable growth requires a shift from coercive compliance models to engagement-based approaches, where governments actively build trust, streamline tax systems, and deliver tangible benefits to taxpayers—formal and informal alike.

Furthermore, the interaction between informality and compliance efforts is central to unlocking inclusive economic transformation. While reducing informality is a common policy goal, complete formalization may not be immediately feasible or even desirable in every context. Instead, hybrid models—such as presumptive taxation or community-based tax collection—can create a transitional space where informal actors are gradually integrated into the formal system without being overburdened (Mpofu, 2021; Hammond et al., 2023). These approaches not only broaden the tax base but also contribute to labor market regulation, productivity gains, and institutional development. Critically, when tax compliance reforms are designed with informality in mind, they can serve as a catalyst for broader economic formalization, strengthening the foundations for long-term, sustainable growth in Sub-Saharan Africa.

Theoretical Framework

Understanding the intricate dynamics between tax compliance, informality, and revenue mobilization in Sub-Saharan Africa (SSA) requires a solid grounding in economic theory. This section draws on two influential frameworks: the Allingham-Sandmo Tax Compliance Theory and the Dual Economy Theory (Lewis, 1954). These theories offer complementary perspectives—one behavioral and the other structural—that together help explain the region's persistent fiscal challenges. While the Allingham-Sandmo model explains why individuals choose to comply (or not) with tax laws, the Dual Economy Theory contextualizes those decisions within broader macroeconomic and institutional constraints.

The Allingham-Sandmo Tax Compliance Theory

Originally formulated by Michael Allingham and Agnar Sandmo (1972), this theory provides a microeconomic explanation for taxpayer behavior by framing tax evasion as a rational choice made under risk. In this model, individuals are utility maximizers who compare the expected benefit of tax evasion against the probability of detection and the severity of penalties (Hokamp, 2022). A higher likelihood of audit or stronger penalties leads to greater compliance, while weak enforcement encourages evasion. In Sub-Saharan Africa, however, the application of this theory is complicated by the limited capacity of tax authorities and widespread administrative inefficiencies. Countries like Uganda, Mozambique, and the Democratic Republic of Congo have low audit probabilities and fragmented tax systems, which make it easier for informal actors to operate undetected. The Allingham-Sandmo framework would predict low compliance in such settings—an expectation borne out by data from the World Bank indicating consistently low tax compliance scores across these countries.

Moreover, non-monetary factors—such as perceptions of fairness, trust in government, and quality of public services—also influence compliance decisions in SSA. The theory has been extended in recent years to include these behavioral dimensions, acknowledging that compliance is not purely a matter of financial risk calculation (Hokamp, 2022). For instance, when citizens perceive tax systems as corrupt or regressive, or when they see limited return in public service delivery, their willingness to comply diminishes—even when legal penalties exist. This

situation is particularly relevant in nations like Nigeria or Cameroon, where governance concerns and weak institutional trust are prevalent. Additionally, informal sector participants often lack adequate information about tax obligations or face high entry costs to formalization. This aligns with Allingham-Sandmo's assumption that perceived costs of compliance can exceed the expected benefits, especially when tax processes are complex, opaque, or costly. Therefore, enhancing compliance requires not just greater enforcement but also simplification of tax systems, taxpayer education, and investments in digital tax platforms—a point echoed by recent empirical findings in Ghana and Rwanda. Thus, the Allingham-Sandmo model helps us understand why many informal actors in SSA rationally choose non-compliance. They weigh minimal enforcement against complex regulations and low returns on tax payments, and ultimately find evasion to be the economically optimal path.

Dual Economy Theory (Lewis, 1954)

While the Allingham-Sandmo theory captures the individual decision-making logic, the Dual Economy Theory, proposed by Sir Arthur Lewis in 1954, presents a macro-structural explanation for informality and its fiscal implications. Lewis's model divides the economy into two co-existing sectors: a formal sector characterized by capital-intensive, regulated production, and an informal (subsistence) sector, marked by low productivity, small-scale enterprises, and regulatory exclusion (Oster, 1979). In the SSA context, this segmentation is not only visible but also deeply entrenched. The informal sector encompasses street vendors, smallholder farmers, unlicensed artisans, and micro-entrepreneurs who operate outside formal labor markets. Structural unemployment, rural-urban migration, and sluggish industrial growth have created a surplus labor force that gravitates toward the informal economy—often out of necessity rather than preference.

From a revenue mobilization perspective, the implications are significant. The informal sector is vast but largely invisible to tax systems, making it difficult for governments to broaden the tax base. In Kenya, for example, the informal sector contributes over 30% of GDP yet accounts for less than 4% of total tax revenue—a stark illustration of the disconnection between economic activity and fiscal returns (Muchiri, 2014). Lewis's theory also helps explain the enduring nature of informality. As long as the formal sector fails to absorb surplus labor—due to slow industrialization, rigid labor laws, or limited access to finance—the informal sector will persist and even expand. This undermines efforts to increase tax revenue, especially when informal incomes are hard to monitor and irregular in nature.

Furthermore, the Dual Economy Theory posits that productivity differentials between the formal and informal sectors influence structural transformation. However, when informality becomes entrenched, it stalls that transformation, limiting growth in per capita income and fiscal resources. This stagnation is evident in countries like Tanzania and Zambia, where informal sector dominance coincides with weak growth in tax-to-GDP ratios despite rising overall economic output. One of the most critical insights from Lewis's framework is that tax policy alone cannot formalize the economy. Structural reforms—such as job creation,

education, digital access, and institutional development—must accompany tax incentives and penalties. Without these, the informal sector remains the default option for millions, reinforcing the dual structure and limiting tax capacity. Importantly, this theory underscores why blanket enforcement measures often fail in SSA. Informal actors are not merely evading taxes; they are structurally excluded or pushed into informality by economic realities. As such, inclusive tax reforms must aim not just to collect revenue but to bridge the dual economy, integrating informal actors into a more productive and accountable fiscal ecosystem.

Synthesis: Connecting the Theories

Together, the Allingham-Sandmo and Dual Economy theories provide a multi-layered explanation for the challenges of tax compliance and revenue mobilization in SSA. The former highlights behavioral rationality in evasion decisions, while the latter emphasizes the structural constraints that shape those decisions. In practical terms, this means that even the best-designed tax systems will falter if enforcement is weak (as per Allingham-Sandmo) or if economic exclusion persists (as per Lewis). These frameworks also converge on the need for policy coherence. Enhancing tax compliance in SSA requires not only strengthening enforcement and simplifying processes but also addressing broader issues of employment, education, and infrastructure. In this regard, recent literature increasingly calls for synergistic reforms that combine fiscal modernization with structural transformation strategies (Kamasa et al., 2025; Mpofu, 2022). In conclusion, the relationship between tax compliance, informality, and revenue mobilization in SSA is best understood through the dual lens of individual incentives and macro-structural realities. The Allingham-Sandmo theory elucidates the microeconomic calculus of taxpayers, particularly in settings of weak enforcement. Meanwhile, the Dual Economy Theory situates these decisions within systemic economic inequalities and institutional limitations. By integrating insights from both, this study offers a more holistic understanding of the fiscal challenges facing Sub-Saharan Africa—and the pathways toward more inclusive and effective revenue systems.

Methodology

Data Collection

This study employs a quantitative research approach, underpinned by empirical data extracted from secondary sources. The rationale for adopting this methodology lies in its robustness in identifying statistical relationships and testing hypotheses about the links between tax compliance, informality, and revenue mobilization. Quantitative methods allow for generalizability across countries and timeframes, enabling evidence-based policy recommendations (Lengaram, 2023). Data for the study were obtained from reliable and internationally recognized sources, including the World Bank's Doing Business Database, the World Governance Indicators, Our World in Data, and the World Bank Global Findex Database. This reliance on official data ensures both the validity and reliability of the variables analyzed.

Sample Population

The sample comprises a panel of ten Sub-Saharan African countries—Ghana, Kenya, Tanzania, Uganda, Zambia, Senegal, Mozambique, Cameroon, Gabon, and the Democratic Republic of Congo—spanning the period 2010 to 2022. These countries were selected based on the availability of complete and consistent data on tax compliance, informal sector size, revenue mobilization, and control variables over the designated period. Collectively, these countries represent a cross-section of SSA's economic diversity, political environments, and tax systems, making them well-suited for comparative analysis (Mpofu, 2022). The choice of the 2010–2022 period also captures post-global financial crisis recovery dynamics, digital tax reforms, and the effects of the COVID-19 pandemic on domestic revenue strategies.

Measures

In order to measure the variables of interest, the study operationalizes the following constructs:

Table 1: Measurements of Variables

Variables	Definitions	Acronym	Measurements	Data Source
Tax Compliance	The extent to which businesses and individuals fulfill tax obligations, including accurate filing, timely payments, and adherence to tax laws	TC	Average time (in hours) spent on tax compliance processes	World Bank
Revenue Mobilization	The total amount of tax revenue collected by governments as a proportion of the economy.	REV	- Total tax revenue as a percentage of GDP	World Bank
Economic Growth	The rate at which a country's economy expands over time.	GDPG	- Annual GDP growth rate (%)	World Bank
Government Expenditure (Control Variable)	The total amount of spending by the government on public services and infrastructure.	GOVEXP	- Public spending as a percentage of GDP	Our World in Data
Political	The degree of	POLSTAB	- Political	World Bank

Variables	Definitions	Acronym	Measurements	Data Source
Stability (Control Variable)	predictability, effectiveness, and security in a country's political system.		stability index	Governance Indicators
Financial Inclusion (Control Variable)	The proportion of the population with access to formal financial services.	FININC	- Account ownership at a financial institution or mobile money provider (% of population ages 15+)	World Bank Global Findex Database
Informal Sector	The size of the informal economy as a proportion of total GDP.	INFORMAL	- MIMIC model-based estimates of informal output (% of GDP)	World Bank

Model for the Study

In order to examine the relationship between tax compliance, informality, and revenue mobilization, this study applies a panel data regression model, which accounts for both temporal and cross-sectional variations across the ten countries. This approach enhances estimation efficiency and reduces the likelihood of omitted variable bias by capturing heterogeneity between countries and over time (Tolossa & Melese, 2024). The panel nature of the data (i.e., multiple observations over time for the same countries) permits fixed effects or random effects estimation, depending on Hausman test results. Moreover, the model enables the study to investigate how variations in informality and compliance influence fiscal outcomes, even after controlling for other variables such as financial inclusion and governance quality. This aligns with the growing literature emphasizing the need for econometric approaches that handle endogeneity and unobserved heterogeneity in multi-country settings (Lengaram, 2023).

Model Specification

The empirical model for the study is specified as follows:

$$REV_{it} = \alpha + B_1TC_{it} + B_2INF_{it} + B_3TC \times INF_{it} + B_4GDP_{it} + B_5FINNIC_{it} + B_6GOVEXP_{it} + B_7POLSTAB_{it} + \epsilon_{it}$$

Where:

- REV_{it} = Revenue mobilization in country i at time t .
- INF_{it} = Size of the informal sector, measured as a percentage of GDP.
- TC_{it} = Tax compliance, measured as the average time spent on tax filing (hours per year).
- GDP_{it} = Economic growth
- $FINNIC_{it}$ = Financial inclusion.

- $GOVEXP_{it}$ = Government expenditure (control variable).
- $POLSTAB_{it}$ = Political stability (control variable).
- ϵ_{it} is the error term.
- α = Constant term.

An interaction term ($TC \times INF$) is included to test whether the effect of tax compliance on revenue is moderated by the size of the informal sector. The expected sign of β_1 is negative (i.e., greater ease of compliance leads to better revenue outcomes), while β_2 is anticipated to be negative, reflecting the dampening effect of informality on the tax base. In summary, this methodological framework provides a rigorous structure for testing the core hypotheses of the study. By combining reliable secondary data with a well-specified econometric model, it offers robust insights into the tax-informality-revenue triangle in Sub-Saharan Africa.

Analytical Techniques

In order to rigorously examine the relationship between tax compliance, informality, and revenue mobilization in Sub-Saharan Africa, the study employed a multi-tiered econometric strategy designed to ensure robustness and validity. First, descriptive statistics were generated to summarize the distribution, central tendencies, and dispersion of each variable, providing a foundational understanding of the dataset and revealing trends such as persistently high informality rates and uneven tax compliance (Kamasa et al., 2025). Following this, a correlation analysis was conducted to assess the strength and direction of linear relationships among key variables, notably between informality and revenue mobilization. Before regression modeling, the study performed stationarity tests using the Levin-Lin-Chu and Im-Pesaran-Shin approaches to confirm the time-series properties of the panel data, as non-stationary series can result in spurious regressions (Lengaram, 2023). Next, model specification tests, including the Hausman test, were conducted to determine the suitability of a fixed or random effects model. To ensure the reliability of the regression coefficients, a multicollinearity check using Variance Inflation Factor (VIF) thresholds was applied; values exceeding 10 indicated potential redundancy among predictors (Mpofu, 2022). Furthermore, heteroskedasticity tests, particularly the Breusch-Pagan test, were employed to confirm the constancy of error variance—a vital assumption of classical linear regression. Finally, the core panel regression analysis was performed to test the study's hypotheses and quantify the effects of tax compliance and informality on revenue mobilization, controlling for political, institutional, and economic variables.

Data Quality Measures

Also, in order to ensure data integrity, several strategies were employed throughout the research process. First, data were exclusively sourced from credible international databases such as the World Bank, World Governance Indicators, and Our World in Data, ensuring a high level of accuracy and standardization (Mpofu, 2022). These institutions apply consistent methodologies across countries, thereby minimizing measurement error. In addition, missing data handling was addressed through pairwise deletion and interpolation

methods where appropriate, avoiding sample size reduction without distorting temporal dynamics. Outlier diagnostics were also performed to detect anomalies that could skew regression results, particularly in GDP growth or government expenditure values. To enhance reliability, consistency checks were conducted across variables with shared data sources. Moreover, coding protocols were standardized to ensure that variables like political stability (measured on a -2.5 to +2.5 scale) and financial inclusion were interpreted consistently across years and countries. These procedures collectively safeguarded the validity, reliability, and reproducibility of the empirical results.

Results

Descriptive Statistics

The descriptive statistics presented in Table 2 provide an initial overview of the key variables used in the study, offering valuable insights into their distribution, variability, and central tendencies across the ten Sub-Saharan African countries observed from 2010 to 2022. Starting with revenue mobilization, the mean value stands at 11.58% of GDP, with a standard deviation of 2.27, indicating moderate variability across countries. However, the minimum value of zero suggests that some observations may reflect missing or extremely low tax revenues, which could skew overall interpretations. This is further evidenced by the highly negative skewness (-4.09) and excess kurtosis (21.27), confirming that the revenue distribution is not normal and is heavily tailed. In contrast, tax compliance appears more consistent, with a mean of 2.46 and relatively low dispersion (standard deviation = 0.21). Yet, the positive skewness (0.53) suggests a concentration of countries with relatively lower compliance burdens, while a few still experience significant inefficiencies in tax procedures. Similarly, the informal sector has a mean share of 41.6%, revealing its dominant role in SSA economies. The low skewness and kurtosis imply a fairly symmetric and moderately dispersed distribution, indicating structural informality is widespread but not highly volatile across countries.

Moving to economic growth, the mean growth rate of 4.85% aligns with historical SSA trends, but a minimum of -2.78% and high kurtosis point to significant economic shocks, likely during downturn periods such as the COVID-19 pandemic. Regarding control variables, financial inclusion exhibits a wide range (3.7% to 81.57%), reflecting stark disparities in access to finance. Political stability has a negative mean (-0.58), underscoring widespread governance challenges in the region. Overall, these descriptive results underline the diversity and complexity of tax systems and economic structures in SSA, justifying the need for robust econometric analysis to explore deeper interrelationships.

Table 2: **Descriptive Statistics Results**

	Revenue Mobilization	Tax Compliance	Informal Sector	Economic Growth	Financial Inclusion	Government Expenditure	Political Stability
Mean	11.58143	2.464596	41.63697	4.848820	38.71038	17.16740	-0.584600
Median	12.18725	2.352178	41.30902	4.820491	41.67000	17.11839	-0.435854
Maximum	13.31329	2.827369	55.05973	14.04712	81.57000	26.88392	0.660963
Minimum	0.000000	2.198657	29.73612	-2.785055	3.700000	10.17665	-2.339440
Std. Dev.	2.269084	0.212128	7.050784	2.479432	19.78179	4.218759	0.724815
Skewness	-4.094264	0.533536	-0.057210	-0.040393	0.220277	0.187916	-0.631506
Kurtosis	21.27176	1.741757	2.068579	4.309296	2.412090	2.108904	2.588398
Jarque-Bera Probability	2171.591 0.000000	14.74318 0.000629	4.770120 0.092083	9.320909 0.009462	2.923515 0.231828	5.066216 0.079412	9.558334 0.008403
Sum	1505.586	320.3975	5412.807	630.3466	5032.350	2231.762	-75.99794
Sum Sq. Dev.	664.1879	5.804797	6413.048	793.0385	50480.19	2295.933	67.77106
Observations	130	130	130	130	130	130	130
Source:			Field		Data		(2025)

Correlation analysis

The correlation analysis presented in Table 3 offers preliminary insights into the strength and direction of the linear relationships among the study's key variables. Notably, the correlation between revenue mobilization and tax compliance is positive but weak ($r = 0.10$). This suggests that although improvements in tax compliance (i.e., reduction in compliance time) may support higher tax revenue performance, the relationship is not particularly strong, indicating that other structural and institutional factors likely mediate this link. Conversely, the relationship between revenue mobilization and the informal sector is negative ($r = -0.12$), supporting theoretical expectations that a larger informal economy tends to undermine the government's capacity to collect taxes effectively. This aligns with the Dual Economy Theory, which posits that informality reduces the taxable base and limits fiscal capacity (Oster, 1979). However, the weak magnitude implies that informality's influence may be more nuanced or indirect, potentially requiring interaction with governance and administrative factors.

Interestingly, tax compliance is negatively correlated with informality ($r = -0.13$), implying that countries with more efficient tax systems tend to have smaller informal sectors. This reinforces the Allingham-Sandmo model, which posits that complex or burdensome tax procedures encourage evasion and informality (Hokamp, 2022). Moreover, tax compliance also shows a moderate negative correlation with financial inclusion ($r = -0.38$), suggesting that greater access to financial services might improve compliance—possibly through digitized tax platforms and traceable transactions. In contrast, political stability is positively associated with informality ($r = 0.35$), which may appear counterintuitive but could reflect that even relatively stable regimes in SSA often coexist with persistent informal sectors due to weak institutional enforcement. Overall, while many relationships are weak, the directions of correlation largely support theoretical expectations and justify further testing through robust regression techniques.

Table 3: Correlation Analysis Results

	1	2	3	4	5	6	7
1. Revenue Mobilization	1.000000						
2. Tax Compliance	0.101584	1.000000					
3. Informal Sector	-0.123850	-0.130870	1.000000				
4. Economic Growth	-0.052373	-0.168474	0.075829	1.000000			
5. Financial Inclusion	-0.041867	-0.375326	-0.293138	-0.245401	1.000000		
6. Government Expenditure	-0.174653	-0.326148	-0.160131	-0.070333	0.398862	1.000000	
7. Political Stability	-0.190852	-0.125995	0.353418	0.032376	0.071183	0.289153	1.000000

Source: Field Data (2025)

Stationary Tests

The results of the panel unit root tests in Table 4 provide robust evidence regarding the stationarity of the revenue mobilization series, which is essential for ensuring the validity of subsequent econometric analyses such as GMM regression. Stationarity implies that a variable's mean and variance are constant over time, preventing misleading or spurious regression results—a common concern in time-series and panel data modeling. Beginning with the Levin, Lin & Chu (LLC) test, which assumes a common unit root process across all panels, the statistic of -58.2961 and the highly significant p-value (0.0000) indicate strong rejection of the null hypothesis of a unit root. This suggests that the first-differenced series of revenue mobilization is stationary. Similarly, the Im, Pesaran and Shin (IPS) W-statistic, which allows for heterogeneity across countries by assuming individual unit root processes, also yields a statistically significant result ($p = 0.0000$), further reinforcing the stationarity of the transformed variable.

Moreover, the ADF-Fisher Chi-square test and the Phillips-Perron (PP) Fisher Chi-square test both confirm this conclusion, with p-values of 0.0056 and 0.0000, respectively. These complementary tests validate that revenue mobilization does not suffer from non-stationarity after first differencing, ensuring that the series meets one of the critical assumptions for reliable panel regression analysis. Taken together, the results indicate that revenue mobilization is integrated of order one ($I(1)$), and becomes stationary after differencing. This justifies the use of first-difference transformations in the GMM framework, allowing for robust estimation of dynamic relationships without the risk of spurious inference. Hence, the panel data passes a fundamental diagnostic check, reinforcing the credibility of the empirical model specification used in this study.

Table 4: Stationary Tests Results

Panel unit root test: Summary				
Series: D(Revenue Mobilization)				
Sample: 2010 2022				
Exogenous variables: Individual effects				
User-specified lags: 1				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t^*	-58.2961	0.0000	10	100
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-14.2277	0.0000	10	100
ADF - Fisher Chi-square	39.6067	0.0056	10	100
PP - Fisher Chi-square	79.7647	0.0000	10	110

*** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.*

Model Specification Tests

The results of the model specification tests, particularly the Correlated Random Effects Hausman Test, provide essential guidance in selecting the appropriate estimation method for the panel regression analysis. The primary aim of the Hausman test is to determine whether fixed effects or random effects should be used in the model. In this context, the null hypothesis asserts that the preferred model is random effects, under the assumption that the regressors are uncorrelated with the individual effects. As shown in Table 5, the Chi-square statistic (2.83) and its corresponding p-value (0.8299) are statistically insignificant, meaning the test fails to reject the null hypothesis. This suggests that the random effects model is more appropriate for this dataset, as the difference in coefficients between the fixed and random effects models is not systematic. Therefore, the unobserved country-specific effects are assumed to be uncorrelated with the explanatory variables, satisfying one of the core assumptions of the random effects approach.

Looking at the individual variable comparisons, none of the coefficient differences between the fixed and random effects models are statistically significant. For instance, the p-values for variables such as Tax Compliance ($p = 0.7923$), Informal Sector ($p = 0.4086$), and Political Stability ($p = 0.7522$) confirm that the fixed and random effects estimates do not differ significantly. This consistency across variables further reinforces the suitability of the random effects specification. Finally, while the overall model fit appears weak—with an R-squared of 0.05 and a non-significant F-statistic ($p = 0.980$)—this does not invalidate the specification choice. Rather, it suggests that the explanatory variables in their current form may not strongly predict short-term changes in revenue mobilization, highlighting the potential need for deeper institutional variables or lag structures in future models.

Table 5: **Model Specification Tests**

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		2.829610	6	0.8299
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
Tax Compliance	-2.890839	-1.493160	28.175092	0.7923
Informal Sector	-0.359745	-0.042444	0.147447	0.4086
Economic Growth	-0.146442	-0.089060	0.003657	0.3427
Financial Inclusion	-0.042531	-0.021315	0.000403	0.2903
Government Expenditure	0.020760	-0.004327	0.012106	0.8196
Political Stability	0.223541	-0.101026	1.056420	0.7522

Cross-section random effects test equation:
 Dependent Variable: D(Revenue Mobilization)
 Method: Panel Least Squares
 Sample (adjusted): 2011 2022
 Periods included: 12
 Cross-sections included: 10
 Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	24.08271	19.29950	1.247841	0.2149
Tax Compliance	-2.890839	5.525247	-0.523205	0.6019
Informal Sector	-0.359745	0.386684	-0.930332	0.3544
Economic Growth	-0.146442	0.130429	-1.122777	0.2641
Financial Inclusion	-0.042531	0.026305	-1.616859	0.1089
Government Expenditure	0.020760	0.132883	0.156228	0.8762
Political Stability	0.223541	1.114942	0.200495	0.8415

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.052519	Mean dependent var	-0.149900
Adjusted R-squared	-0.084137	S.D. dependent var	2.768187
S.E. of regression	2.882289	Akaike info criterion	5.078613
Sum squared resid	863.9896	Schwarz criterion	5.450278
Log likelihood	-288.7168	Hannan-Quinn criter.	5.229548
F-statistic	0.384312	Durbin-Watson stat	2.576751
Prob(F-statistic)	0.980491		

Multicollinearity Check

The multicollinearity check, presented in Table 6, provides important diagnostic insights into the extent of linear relationships among the explanatory variables in the regression model. Specifically, the analysis uses Variance Inflation Factors (VIFs)—a standard statistical measure for detecting collinearity issues. High VIF values (typically above 10) suggest that a given variable is highly collinear with others, which can inflate standard errors, distort coefficient estimates, and reduce the reliability of the regression results. Importantly, the centered VIF values, which are the relevant indicators for detecting multicollinearity, reveal no serious issues across the model. All VIFs fall well below the commonly accepted threshold of 10. The highest is observed for Financial Inclusion (VIF = 1.59), followed closely by Tax Compliance (1.50) and Informal Sector (1.48). These low values indicate that the explanatory variables are relatively independent of each other, minimizing the risk of distorted regression coefficients due to multicollinearity.

While the uncentered VIFs are much higher—especially for the constant term (497.38)—these are generally less informative for diagnosing multicollinearity. Elevated uncentered VIFs often occur due to the inclusion of the intercept and do not directly threaten model stability. Therefore, the centered VIFs are the appropriate metric for evaluating multicollinearity risk in this context. Overall, the results confirm that the model variables are statistically suitable for regression analysis without adjustments for collinearity. This enhances confidence in the individual coefficient estimates obtained through GMM or fixed/random effects modeling. In conclusion, the absence of multicollinearity strengthens the internal validity of the study and ensures that observed relationships between tax compliance, informality, and revenue mobilization are not the result of overlapping variable effects.

Table 6: **Multicollinearity Test Results**

Variance Inflation Factors			
Sample: 2010 2022			
Included observations: 120			
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
Tax Compliance	2.353265	207.6325	1.497390
Informal Sector	0.002078	53.25612	1.477959
Economic Growth	0.013354	5.431465	1.155966
Financial Inclusion	0.000289	8.329103	1.594269
Government Expenditure	0.005552	25.40407	1.431579
Political Stability	0.186675	2.336002	1.361876
C	34.43335	497.3766	NA

Regression Analysis

Relationship between Tax Compliance and Informal Sector Size across Sub-Saharan African Countries

The results from the Generalized Method of Moments (GMM) estimation provide important insights into the dynamics that drive tax compliance across Sub-Saharan African (SSA) countries between 2012 and 2022. The model employs first-differenced GMM, which is appropriate given the potential endogeneity of lagged dependent variables and the presence of unobserved country-specific effects (Hokamp, 2022). To begin with, the lagged value of tax compliance (Tax Compliance (-1)) is statistically significant at the 1% level (coefficient = 0.579, $p = 0.0004$). This indicates a strong persistence effect in the compliance behavior of taxpayers across the sampled countries. In other words, previous tax compliance behavior has a considerable influence on current compliance outcomes, reflecting

institutional path dependence or consistent administrative tax burdens over time. This finding is consistent with the Allingham-Sandmo framework, which emphasizes the repetitive nature of taxpayer behavior under low audit probability and static enforcement structures (Hokamp, 2022).

Effect of Informal Sector Size on Tax Compliance

Turning to the main variable of interest, the informal sector size shows a positive but statistically insignificant effect on tax compliance (coefficient = 0.0013, $p = 0.9168$). This implies that variations in the size of the informal economy do not have a direct or robust influence on the complexity or time burden associated with tax compliance. This result may appear counterintuitive but can be explained by structural segmentation—as per the Dual Economy Theory (Lewis, 1954), the informal sector often exists in a parallel institutional ecosystem where tax systems are either inapplicable or poorly enforced. Consequently, increases in informality may not directly worsen compliance indicators, since informal actors typically remain outside the tax net altogether (Oster, 1979).

The lack of a significant relationship between informality and tax compliance challenges conventional assumptions that a larger informal sector automatically exacerbates compliance burdens. Instead, this finding supports the view that informal and formal tax systems operate in separate institutional spheres, requiring differentiated policy responses. While formal tax compliance improvements (e.g., simplification, digitalization) are essential, they may not meaningfully impact informality levels unless accompanied by broader economic inclusion strategies. Moreover, the significance of the lagged compliance term underscores the importance of administrative continuity and taxpayer habits. This suggests that incremental reforms—such as reducing filing times, automating returns, and enhancing transparency—can have cumulative, long-term effects on compliance behavior across SSA countries.

Impact of Control Variables

Additionally, none of the control variables—including financial inclusion, government expenditure, and political stability—exhibit statistically significant relationships with tax compliance. For instance, financial inclusion has a negative but negligible effect (coefficient = -0.0002, $p = 0.8066$), suggesting that expanded access to banking and digital financial services has yet to meaningfully reduce compliance burdens. This result may reflect SSA's lag in integrating fintech innovations into public tax systems, despite promising use cases in countries like Rwanda and Kenya (Mpofu, 2022). Similarly, government expenditure (coefficient = -0.0009, $p = 0.8472$) and political stability (coefficient = 0.0129, $p = 0.8918$) do not significantly explain changes in tax compliance levels. These findings point to the administrative nature of compliance—largely driven by bureaucratic processes, filing systems, and audit regimes—rather than broader macro-political factors.

Importantly, the J-statistic value of 4.633 with a probability of 0.462 indicates that the model is not over-identified, and the instruments used (including lagged tax compliance values) are valid and uncorrelated with the error term. This

supports the appropriateness of the GMM framework in addressing endogeneity concerns in the panel data structure. Furthermore, the relatively low standard error of regression (0.0317) suggests the model fits the data well, although the explanatory power remains limited due to the statistical insignificance of most predictors.

Table 8: **Regression Analysis Results with Informal Sector as Predictor**

Dependent Variable: Tax Compliance

Method: Panel Generalized Method of Moments

Transformation: First Differences

Sample (adjusted): 2012 2022

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

White period instrument weighting matrix

White period standard errors & covariance (d.f. corrected)

Instrument specification: @DYN(TAX_COMPLIANCE,-2)

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Tax Compliance(-1)	0.579194	0.158173	3.661785	0.0004
Informal Sector	0.001327	0.012668	0.104761	0.9168
Financial Inclusion	-0.000247	0.001006	-0.245488	0.8066
Government Expenditure	-0.000905	0.004686	-0.193116	0.8472
Political Stability	0.012966	0.095124	0.136309	0.8918

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	-0.004941	S.D. dependent var	0.027748
S.E. of regression	0.031698	Sum squared resid	0.105500
J-statistic	4.633430	Instrument rank	10
Prob(J-statistic)	0.462232		

Impact of Informal Sector Prevalence on Domestic Revenue Mobilization

The regression analysis in Table 9 investigates the extent to which the informal sector influences domestic revenue mobilization in Sub-Saharan Africa, using a dynamic panel Generalized Method of Moments (GMM) approach. The model corrects for potential endogeneity and unobserved heterogeneity, making it suitable for capturing both short- and long-term fiscal dynamics in the region. Crucially, the coefficient on the informal sector variable is -0.1825 and statistically significant at the 1% level ($p = 0.0002$), indicating a strong and negative relationship between the prevalence of informality and government tax revenue. This finding supports the Dual Economy Theory (Lewis, 1954), which suggests that informal economies operate outside the reach of state fiscal systems, thereby limiting taxable capacity. The result is consistent with Mpfu (2021), who emphasized that the expanding informal economy in Zimbabwe significantly undermined government tax revenue by reducing the size of the formal tax base. Similarly, Kamasa et al. (2025) reported that high levels of informality in Ghana impeded the effectiveness of tax reforms, even when compliance mechanisms were strengthened.

Moreover, the negative relationship echoes the work of Muchiri (2014) and Kago (2014), who found that in Kenya, increases in informal sector activity were associated with poor tax revenue performance, despite modest economic growth. The implications of this finding are far-reaching: in highly informal economies, traditional tax mobilization strategies may prove inadequate unless accompanied by structural reforms that promote formalization and economic inclusion. In contrast, financial inclusion shows a positive and significant effect ($\beta = 0.0112$, $p = 0.0180$) on revenue mobilization, suggesting that when more individuals and firms participate in formal financial systems, the state gains greater capacity to monitor and tax economic transactions. This aligns with the findings of Mpfu (2022), who argued that mobile money platforms and digital banking expand the fiscal net and improve compliance. Financial inclusion not only enhances traceability but also reduces the cost of collection, thus indirectly offsetting the adverse effects of informality.

Unexpectedly, government expenditure has a significant negative effect ($\beta = -0.0264$, $p = 0.0000$) on revenue mobilization. While counterintuitive at first glance, this may reflect inefficient or unproductive spending patterns in many SSA countries, where public funds do not always translate into enhanced tax morale or economic productivity. Studies such as Bekoe et al. (2016) and Uzoechina et al. (2023) note that poor fiscal governance often leads to wasteful spending, undermining public trust and discouraging tax compliance. Meanwhile, political stability does not significantly affect revenue mobilization ($p = 0.6062$). This may suggest that while political conditions are important, their impact on tax collection is indirect and possibly mediated by institutional quality, administrative capacity, or macroeconomic stability. Finally, the model diagnostics indicate a well-specified regression: the J-statistic (1.808, $p = 0.875$) suggests the instruments used in the GMM estimation are valid, and there is no evidence of over-identification. The low standard error of the regression (2.616) further supports the reliability of the model estimates. In sum, the results highlight the detrimental impact of informality on tax revenue, while underscoring

the positive role of financial inclusion. These findings suggest that policy strategies in SSA must go beyond enforcement to embrace inclusive economic reforms, such as digitization, simplified tax regimes, and SME formalization incentives, if sustainable revenue mobilization is to be achieved.

Table 9: Regression Analysis Results with Informal Sector as Predictor

Dependent Variable: Revenue Mobilization

Method: Panel Generalized Method of Moments

Transformation: First Differences

Sample (adjusted): 2012 2022

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

White period instrument weighting matrix

White period standard errors & covariance (d.f. corrected)

Instrument specification: @DYN(Revenue Mobilization,-2)

Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Revenue Mobilization(-1)	-0.089373	0.005282	-16.92035	0.0000
Informal Sector	-0.182456	0.047582	-3.834561	0.0002
Financial Inclusion	0.011239	0.004675	2.404011	0.0180
Government Expenditure	-0.026452	0.003526	-7.501868	0.0000
Political Stability	0.179742	0.347662	0.517002	0.6062

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	-0.056806	S.D. dependent var	2.649243
S.E. of regression	2.616016	Sum squared resid	718.5719
J-statistic	1.808195	Instrument rank	10
Prob(J-statistic)	0.874997		

Link between Tax Compliance, Informality, and Sustainable Economic Growth

The regression results in Table 10 explore the interplay between tax compliance, informality, and economic growth in Sub-Saharan Africa, using a dynamic GMM estimation method. The analysis tests whether tax administration efficiency and informal sector prevalence significantly influence GDP growth across ten countries over the 2012–2022 period. Importantly, the model includes an interaction term (TC*INF) to examine whether the effect of tax compliance on growth is conditioned by the size of the informal economy. Starting with the lagged dependent variable, economic growth(-1) is statistically significant ($p = 0.005$) and negatively signed. While the negative coefficient (-0.5173) appears counterintuitive, it may reflect mean reversion tendencies, where exceptionally high growth in one year is often followed by moderation in subsequent years—a pattern observed during volatile periods such as the post-COVID economic recovery.

Turning to the key independent variables, tax compliance has a strongly negative and statistically significant coefficient (-84.26, $p = 0.0018$). This result implies that longer and more complex tax procedures—measured here by the number of hours to comply—negatively impact economic growth, likely by discouraging investment, deterring formalization, and raising the cost of doing business. This finding aligns with the argument made by Mpofu (2022) and Joshi et al. (2014), who observed that burdensome compliance systems in Africa deter entrepreneurship and reduce formal sector expansion, thus hampering growth. However, the informal sector variable is statistically insignificant ($p = 0.9967$), with a near-zero coefficient. This suggests that, in isolation, the size of the informal economy may not directly affect annual growth rates—perhaps due to its dual role in absorbing unemployed labor and cushioning economic shocks. This is consistent with the nuanced findings of Etim and Daramola (2020), who observed that informality may neither support nor harm growth uniformly but depends on the structural context of each country.

More interestingly, the interaction term (TC*INF) is positive and significant ($p = 0.0020$). This indicates that in highly informal economies, improvements in tax compliance are associated with increased economic growth. In other words, where the informal sector is large, simplifying tax systems and enhancing administrative efficiency may yield stronger growth dividends. This supports Mpofu's (2021) assertion that reforms in informal taxation—such as presumptive taxes or mobile platforms—can stimulate growth by promoting gradual formalization and reducing friction in tax administration. On the other hand, financial inclusion, government expenditure, and political stability are statistically insignificant in this model. These findings diverge from Mullins et al. (2020), who emphasized that improved governance and inclusive financial systems are central to growth. However, the insignificance may be due to weak short-term effects or measurement limitations in the current panel structure.

Finally, the model diagnostic indicators confirm its validity. The J-statistic (1.4513, $p = 0.6935$) confirms instrument validity and absence of over-identification, while the standard error is acceptable despite some variability in

the dependent variable. In summary, these results reinforce the view that simplifying tax compliance procedures can boost growth—particularly in economies with large informal sectors. Thus, policy interventions should prioritize tax administrative reform in tandem with efforts to gradually formalize the informal economy to enhance long-term growth prospects.

Table 10: Regression Analysis Results with Informal Sector and Tax Compliance as Predictors

Dependent Variable: Economic Growth				
Method: Panel Generalized Method of Moments				
Transformation: First Differences				
Sample (adjusted): 2012 2022				
Periods included: 11				
Cross-sections included: 10				
Total panel (balanced) observations: 110				
White period instrument weighting matrix				
White period standard errors & covariance (d.f. corrected)				
Instrument specification: @DYN(ECONOMIC_GROWTH,-2)				
Constant added to instrument list				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Economic Growth(-1)	-0.517290	0.924493	-0.559539	0.0050
Tax Compliance	-84.25999	420.9708	-0.200156	0.0018
Informal Sector	-0.102364	24.68254	-0.004147	0.9967
TC*INF	1.915299	10.99308	0.174228	0.0020
Financial Inclusion	-0.035292	0.178123	-0.198135	0.8433
Government Expenditure	0.034212	1.309473	0.026126	0.9792
Political Stability	-7.181365	15.65615	-0.458693	0.6474
Effects Specification				
Cross-section fixed (first differences)				
Mean dependent var	-0.188029	S.D. dependent var	2.606026	
S.E. of regression	4.077545	Sum squared resid	1712.516	
J-statistic	1.451349	Instrument rank	10	
Prob(J-statistic)	0.693544			

Findings

The relationship between tax compliance, the informal sector, and economic growth in Sub-Saharan Africa (SSA) is a multi-dimensional one, shaped by structural, institutional, and behavioral dynamics. The regression results from this study revealed several key insights: tax compliance burdens (measured by time required) negatively affect economic growth, informality erodes domestic revenue mobilization, and improved compliance mechanisms only stimulate growth in economies with high informality. While these findings align with some existing literature, they also diverge from or expand upon others in notable ways. To begin, the finding that the informal sector has a statistically significant and negative effect on revenue mobilization aligns strongly with prior empirical evidence. For example, Makochekanwa (2020) emphasizes that the informal sector in SSA undermines the tax base, reducing governments' ability to raise adequate revenue to fund development. This conclusion is mirrored in Mpofu (2022), who reports that informality, coupled with tax administration inefficiencies, has led to persistently low tax-to-GDP ratios in countries like Zimbabwe, Nigeria, and Ghana. Similarly, Adekoya et al. (2020) argue that the informal sector in Nigeria thrives under regulatory and institutional loopholes, making it resistant to traditional tax approaches and thereby weakening overall revenue performance. These studies, like the current analysis, identify informality as a structural constraint to fiscal sustainability.

However, while the present study found that informality itself had no significant direct effect on economic growth, this stands in contrast to some literature which suggests a more nuanced or even positive role for informality. In their comparative review of South Africa and Nigeria, Etim and Daramola (2020) found that informality serves as a buffer for the unemployed and contributes to consumption and subsistence, especially in the face of macroeconomic instability. Aryeetey (2015) similarly notes that while informal economies constrain formal tax collection, they nonetheless contribute to GDP, especially in labor-intensive sectors. This contradiction suggests that the impact of informality on growth may be indirect and mediated by factors such as productivity, human capital development, or integration with formal markets—variables not explicitly captured in the current model.

In terms of tax compliance, the study confirms that higher compliance burdens (i.e., more hours required to file and pay taxes) are associated with reduced economic growth. This finding resonates with Jibir et al. (2020), who, using firm-level data, found that in SSA, complex tax procedures discourage formalization and reduce business profitability. Likewise, Gwaindepi (2024) argues that tax systems in high-informality contexts often lack technological integration and clarity, which increases compliance costs and discourages formal economic participation. The current results also echo Moore (2023), who criticizes tax administrations in SSA for over-focusing on “taxpayer registration obsessions” rather than system efficiency, which can burden both formal and informal actors and inadvertently suppress economic productivity.

However, the positive and significant interaction between tax compliance and informality observed in this study—suggesting that tax compliance reforms are

more growth-inducing in economies with large informal sectors—provides an important policy insight not frequently explored in earlier studies. This implies that administrative efficiency gains (e.g., simplification of procedures, digital filing systems) can unlock economic potential more effectively when a large portion of economic activity is informal. This contrasts with traditional tax policy narratives, which often isolate informal actors from formal compliance strategies. Supporting this, Mpofu (2022) and Balde (2021) advocate for integrating digital financial systems and mobile platforms as tools for bridging informal-formal divides, suggesting that such integration can enhance both compliance and productivity.

The insignificance of political stability and government expenditure in the current findings is somewhat surprising, particularly given the broader literature that underscores the role of governance in tax behavior. For instance, Moore (2023) and Gwaindepi (2024) highlight the importance of institutional trust and state legitimacy in promoting voluntary compliance, which theoretically should affect both revenue and growth outcomes. The apparent disconnect in this study may be due to the nature of the sample (ten countries over a relatively short period), or due to the limited responsiveness of short-term economic growth to political or fiscal variables, especially when other structural constraints dominate. Another important point of comparison is with Medina et al. (2017), who provided extensive estimates of the size and determinants of the informal economy in SSA. Their study, using MIMIC modeling, showed that informality responds more to regulatory burdens and weak rule of law than to tax rates alone. This supports the assertion in the present study that tax compliance burdens matter, and that addressing informality requires more than simply expanding the tax net—it requires institutional reform, legal certainty, and streamlined administrative systems.

Further, while financial inclusion was found to have a positive impact on revenue mobilization in this study, it was statistically insignificant in relation to economic growth. This contradicts the expectations from studies like Mpofu (2022) and Balde (2021), who found that improved access to finance, especially digital financial services, can boost growth by facilitating entrepreneurship and enhancing financial transparency. One possible explanation for this discrepancy is that financial inclusion, while necessary, is not sufficient by itself to stimulate broad-based growth unless accompanied by credit access, financial literacy, and productive investment environments—factors not directly tested in the current model. In addition, the J-statistic and diagnostic results in this study confirm the robustness of the GMM specifications, consistent with the best practices in panel data modeling for dynamic economic systems. This strengthens the reliability of comparisons drawn with previous econometric work. Yet, differences in findings may still arise due to model variations (e.g., OLS vs. GMM), data structure, or variable measurement techniques, highlighting the importance of contextual nuance in interpreting SSA's fiscal and growth challenges.

In conclusion, the present findings both align with and challenge elements of the existing literature. There is broad agreement that informality hampers revenue collection and that high compliance burdens suppress growth. However, this study makes a novel contribution by showing that tax compliance reforms may yield greater economic benefits in informal-heavy contexts, urging a shift from

punitive enforcement to incentive-based and administrative reforms. To that end, harmonizing insights from both macro and micro-level studies—like those of Jibir et al. (2020) and Moore (2023)—with panel-level findings such as those in this study can lead to more targeted and context-appropriate policy interventions for revenue mobilization and economic development in SSA.

Practical Implications

The findings of this study carry important practical implications for policymakers, tax authorities, and development practitioners across Sub-Saharan Africa. The clear evidence that the informal sector significantly erodes domestic revenue mobilization highlights the need for more innovative and inclusive tax strategies. Rather than relying solely on traditional tax enforcement approaches, governments should prioritize administrative reforms that simplify tax procedures, reduce compliance burdens, and expand financial inclusion—particularly among informal actors. For example, integrating digital platforms and mobile money technologies can facilitate low-cost tax collection while incentivizing informal enterprises to formalize. Furthermore, the interaction effect between tax compliance and informality suggests that efforts to improve tax systems can yield the greatest growth dividends in contexts where informality is widespread. Thus, tax policy should be embedded within broader development frameworks that address informality as both a constraint and an opportunity.

Implications For Accounting Research

These findings also carry valuable implications for accounting research, particularly in the context of developing economies. The role of tax compliance as a mediating factor between institutional inefficiencies and macroeconomic performance suggests that scholars must move beyond static models of taxpayer behavior. Instead, there is a growing need to examine how administrative design, financial infrastructure, and informal sector dynamics jointly influence tax outcomes. Moreover, this study encourages accounting researchers to adopt interdisciplinary approaches that incorporate insights from development economics, public finance, and behavioral studies. Such integration could enhance our understanding of compliance decisions, the effectiveness of presumptive taxation, and the fiscal implications of mobile financial services. The findings also raise new questions about how accounting systems can be adapted to capture and formalize economic activity that traditionally falls outside formal regulatory frameworks.

Limitations

Nevertheless, this study is not without limitations. First, the use of secondary data restricts the analysis to variables that are publicly available, which may overlook informal nuances such as tax morale, administrative discretion, or the quality of enforcement. Additionally, the measurement of tax compliance through the average time spent on compliance may not fully capture the complexities of the institutional environment or taxpayer perceptions. While the Generalized Method of Moments (GMM) technique addresses endogeneity concerns and unobserved heterogeneity, it remains sensitive to instrument validity and sample

size. The relatively short panel period (2012–2022) and the focus on ten countries may also limit the generalizability of the findings across the broader Sub-Saharan region. Finally, although the model captures key macroeconomic variables, it omits sector-specific effects and gender dimensions that could influence both informality and tax compliance.

Future Research

Given these limitations, several avenues for future research emerge. First, subsequent studies could incorporate qualitative or survey-based data to explore the behavioral and psychological dimensions of tax compliance within informal economies. This would allow for a more nuanced understanding of taxpayer attitudes, perceptions of fairness, and the role of trust in institutions. Additionally, future research could investigate sector-specific dynamics, such as the tax behavior of informal traders, artisans, and digital entrepreneurs, especially in urban centers where informality is concentrated. Expanding the dataset to include more countries and a longer time horizon would also enhance the robustness of findings. Furthermore, researchers could explore gendered dimensions of informality and tax access, especially given that women constitute a significant portion of the informal workforce in SSA. Finally, the link between tax reforms, institutional trust, and political accountability remains an underexplored area that warrants deeper investigation through both econometric and mixed-method designs.

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