An examination into tax compliance mechanisms: The effect of tax amnesty among small and medium-sized enterprises (SMEs) in Lusaka district, Zambia

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ABSTRACT

Tax compliance poses a significant obstacle for revenue generation in developing countries, particularly for small and medium-sized enterprises (SMEs). Tax amnesty, defined as a temporary government policy that allows taxpayers to settle outstanding tax liabilities with reduced or waived penalties and interest, has been implemented in various forms globally. Although Zambia has initiated various tax amnesty programs, there is a lack of substantial empirical data regarding the relationship between amnesty and enforcement strategies, taxpayer awareness, and digital initiatives across various compliance profiles of SMEs. This research examines the effects of tax amnesty and related compliance mechanisms on SMEs in Lusaka District, Zambia, grounded in Compliance Theory and Agency Theory. Utilizing survey data collected from 400 SMEs through stratified random sampling, the study applies multinomial logistic regression to evaluate the influence of tax amnesty, tax awareness, tax audits, and tax penalties on compliance levels categorized as low, moderate, and high. The findings indicate that tax amnesty notably enhances the likelihood of SMEs, both high and low in compliance, meeting their tax obligations, although its impact differs among compliance categories. Enforcement practices like audits and penalties discourage compliance in SMEs that are less compliant while promoting it amongst those already adhering to tax regulations. Tax knowledge shows similar conditional effects on compliance. These results highlight the necessity for tailored compliance strategies rather than a one-size-fits-all approach to enforcement. This study adds to the tax compliance literature by illustrating the conditional effectiveness of tax amnesty and enforcement strategies within the context of SMEs in a developing nation. The policy implications underscore the need for amnesty initiatives to be combined with digital resources, taxpayer education, and ongoing monitoring post-amnesty to ensure lasting compliance.

Keywords: Small and Medium-sized Enterprises (SMEs), Tax Compliance, Tax Amnesty, Tax Audit, Tax Penalties

I. INTRODUCTION

The gathering of tax revenue is an important goal for countries in development that are aiming to support public services and meet sustainable development targets. The International Monetary Fund (IMF) reports that these nations have improved their tax collection efforts, but many still need to significantly raise their tax-to-Gross Domestic Product (GDP) ratios to sufficiently fund vital services (IMF, 2023). Recently, some administrations have implemented tax amnesty programs as a means to improve revenue collection. Evidence from Latin American nations indicates that voluntary reporting initiatives can effectively enhance tax compliance among affluent individuals (Londoño-Vélez & Ávila-Mahecha, 2021). The situation in Zambia illustrates both achievements and ongoing obstacles in mobilizing domestic revenue. In 2022, the Zambia Revenue Authority surpassed its yearly goal by gathering K106.6 billion in total revenue, compared to the target of K91.035 billion, leading to a surplus of roughly K6.9 billion (Zambia Monitor, 2023). Nonetheless, the nation still encounters structural issues in revenue collection, especially with the administration of Value Added Tax (VAT), where enforcement issues hinder the success of revenue mobilization initiatives, despite appropriate tax rates (Siwale, cited in The Africa Report, 2023). These continuing challenges highlight the necessity for an enhanced tax administration capability rather than simply altering tax rates to ensure sustainable revenue increase. Tax amnesties are not solely Zambia's; both developed and developing countries, including the United States, Italy, and Argentina, have used them for a long time and continue to do so as part of their fiscal strategies.

According to Baer and Le Borgne (2008), tax amnesty is a specific interval when taxpayers can offset what they owe the State (usually together with penalties and interest accrued) by just paying the amount decided on a good road. Therefore, the tax authorities will not pursue the pending cases and they will also not take any action against the accused parties; thus, the taxpayers are the ones who get a new beginning, also prompting them to enter the formal system again. The tax amnesty programs allow those individuals and business entities which choose to break the law an easy way out, where they do not face the whole resultant effects of the enforcement actions but rather only certain parts of it. In order to embellish these programs' impact on national revenue performance, it is the first step to comprehend the administrative logic of tax amnesty programs and how they are interconnected with the overall revenue management systems.

In Zambia, taxpayer compliance has been tackled through various approaches among which tax amnesty is the major one. During this period when the state grants taxpayers amnesty, they get to correct the mistakes they made in the past, pay their dues, and evade the possibility of being punished (Fiebiger & Lavoie, 2020). This time frame is nullified as soon as investigations are underway. Occasionally, shifts in the legislation are passed which at one and the same time elongate the duration of the amnesty and lay down tougher penalties for those who fail to resort to it.

The collection of tax revenue in a country depends on factors such as demographic changes, public attitudes toward tax payment, ease of tax evasion, and the tax system's structure. In Zambia, a 1% increase in tax revenue and a rise in the tax-to-GDP ratio to 17.8% were observed during the 2020/2021 and 2021/2022 fiscal years, reflecting some progress despite ongoing compliance challenges (Evans, 2022). Research on tax amnesty policies shows mixed effects on SME tax compliance: some studies find that tax0 amnesties can improve compliance when combined with sanctions and awareness efforts (Prasetia, 2025).

Despite the extensive use of tax amnesty programmes in Zambia, there is limited empirical evidence on how these initiatives influence SME tax compliance when considered alongside enforcement mechanisms, taxpayer knowledge, and digital initiatives. Existing studies largely examine compliance in aggregate terms, overlooking the possibility that policy instruments may affect SMEs differently depending on their initial compliance status. This study addresses this gap by analysing the conditional effects of tax amnesty, tax knowledge, tax audits, and tax penalties on SME tax compliance in Lusaka District using a Multinomial Logistic Regression framework. By distinguishing between low, moderate, and high compliance outcomes, the study provides nuanced insights into how compliance mechanisms operate across heterogeneous SME profiles. The findings contribute to both theory and policy by informing the design of targeted, evidence-based compliance strategies in developing economies.

1.1 Statement of the Problem

Tax revenue remains fundamental to government operations, enabling the provision of social services, infrastructure maintenance, and economic growth (Bird & Zolt, 2008). However, tax evasion and avoidance significantly undermine fiscal sustainability in developing countries, particularly in Sub-Saharan Africa where large informal sectors, inadequate enforcement capacity, and low public trust in tax authorities create persistent compliance challenges (Fjeldstad & Moore, 2009; Schneider & Enste, 2013).

Zambia exemplifies these structural difficulties. Despite posting K98.7 billion in domestic revenue collection against a K98.9 billion target, the country faces chronic revenue mobilization problems due to lower-than-expected collections from Value Added Tax (VAT), Customs and Excise Duties, and Mineral Royalties (Cheelo & Hinfelaar, 2020). Small and Medium-sized Enterprises (SMEs), while contributing substantially to employment and production, largely operate outside the formal tax system (Zambia Revenue Authority [ZRA], 2021). The 2015 tax amnesty program was followed by a ZMW 98 million revenue shortfall in 2016, with ZMW 59.3 million attributed to SME tax evasion (ZRA, 2021). Compliance levels in Lusaka Province reached as low as 30% (ZRA, 2019), severely constraining government capacity to fund public services and development initiatives (Cobham, 2014).

Tax amnesty programs have been implemented repeatedly as remedial measures to encourage voluntary compliance and increase revenue (Luitel & Sobel, 2007). While some amnesties yield temporary revenue gains (Alm & Beck, 1993), others produce minimal or short-lived results (Adekoya & Olayinka, 2023). In Zambia, the 2017 scheme processed over 1.3 million applications but collected only 50% of anticipated revenue due to design and implementation weaknesses (International Monetary Fund [IMF], 2017). This raises fundamental questions about whether amnesty programs produce sustainable behavioral change or merely create expectations of future relief that undermine long-term compliance (Baer & Le Borgne, 2008).

Despite extensive use of tax amnesty in Zambia, limited empirical evidence exists on how these initiatives influence SME compliance when considered alongside enforcement mechanisms, taxpayer knowledge, and digital initiatives. Existing studies examine compliance in aggregate terms, overlooking that policy instruments may affect SMEs differently depending on their initial compliance status (Chiumya, 2006; Fuest & Riedel, 2009). While researchers have explored general compliance frameworks (Mupimpila & Lusaya, 2020; Simuchile, 2021), few have provided empirical evidence on the long-term behavioral impacts of amnesty programs on SMEs. This study addresses this gap by analyzing the conditional effects of tax amnesty, tax knowledge, tax audits, and tax penalties across different SME compliance profiles in Lusaka District, providing evidence-based insights for targeted policy design.

1.2 Research Objective

The main objective of this study is to examine the effect of tax amnesty programmes on tax compliance among small and medium-sized enterprises (SMEs) in Lusaka District, Zambia.
The specific objectives are to:

1. Examine SME perceptions of tax amnesty programmes in Zambia.
2. Assess institutional factors influencing the effectiveness of tax amnesty programmes among SMEs.
3. Analyse the effect of tax amnesty programmes on SME tax compliance behaviour.
4. Examine the role of digital tax systems in shaping SME participation and compliance during and after tax amnesty programmes.

II. LITERATURE REVIEW

2.1 Theoretical Review

This research is based on two main theoretical frameworks: Compliance Theory and Agency Theory, which collectively offer an extensive perspective on the difficulties related to mobilizing tax revenue. Theoretical frameworks act as fundamental constructs that steer research by clarifying why certain phenomena occur and assisting researchers in interpreting empirical results within recognized academic literature (Ravitch & Riggan, 2017). However, modern research on tax compliance has broadened its scope beyond mere economic factors to include social and psychological dimensions, acknowledging that trust in government, views on the fairness of the tax system, and the morale regarding taxes play a critical role in influencing voluntary compliance behaviors (Gebretsadik & Asmare, 2024). Agency Theory enhances this framework by discussing the division between ownership and control within tax administration, especially relevant when analyzing how information gaps between taxpayers and tax authorities, or between managers and owners of firms, impact tax compliance and the effectiveness of revenue collection (Kleven et al., 2016). Together, these theoretical frameworks help identify significant variables that affect revenue mobilization, furnish a framework for data analysis and interpretation, and situate the present research within the larger academic discourse concerning taxation and public finance (Grant & Osanloo, 2014). Consequently, the theoretical review functions as a vital link that connects the study's conceptual framework to the existing body of knowledge, elucidating the dynamics that contribute to challenges in tax compliance while laying a solid groundwork for empirical research.

2.1.1 Tax Compliance Theory

Tax Compliance Theory spans multiple disciplines but converges on explaining why individuals or organizations follow rules. Early work emphasized deterrence and rational choice, treating actors as utility-maximizers who weigh sanctions and rewards, as in classic economic and tax-compliance models where evasion occurs if expected gains exceed expected penalties (Devos 2014).

Under the prism of tax compliance theory, people are made aware that tax systems can't only outperform through technical efficiency or rational design. In addition, they should also be built on fairness, simplicity, and equity values, which in return will make taxpayers comply naturally. Referring to this, policies will be more effective if they rely both on rational incentives and normative expectations, so that citizens will see adherence as a smart choice and a right choice at the same time.

2.1.2 Agency Theory

Agency Theory explains relationships where a principal (e.g., government) delegates tasks to an agent (e.g., tax authority staff, external information providers, or taxpayers as self-assessing agents), under conditions of divergent interests and information asymmetry. This creates risks of opportunism, “shirking,” and misaligned incentives, so principals must invest in monitoring, incentives, and governance mechanisms rather than assuming agents always act in the public interest (Eisenhardt, 1989).

Nevertheless, Agency Theory does not convey that agents as a matter of fact are not cooperative. Issues of cooperation have not been included; in contrast, there are numerous illustrations of firms and individuals typically striving alongside community objectives. Corporate citizenship ethic initiatives, volunteering, taking part in local affairs such as schools or religious bodies that run youth groups demonstrate that people and entities very often act in a benevolent way, even when there are no benefits (Plewa et al., 2014). The government, in its role as principal, decides on audit techniques aimed at creating taxpayer compliance in the degrees of taxpayer-administrative officials.

2.2 Empirical Review

2.2.1 SME Perceptions of Tax Amnesty Programmes

Research shows that how taxpayers see things greatly affects whether they join tax amnesty programs and follow tax rules afterward. Alm and Beck (1993) point out that small and medium-sized enterprise (SMEs) often view these amnesties as short-term fixes, not long-term solutions, especially when the focus is on waiving penalties and interest. This mindset might boost compliance in the short run but weaken overall commitment to paying taxes honestly over time. In countries still developing, the sense of fairness and trust in tax authorities plays a huge role. Fuest and Riedel (2009) discovered that SMEs in poorer economies often look at these amnesty programs with doubt because enforcement is inconsistent, and they feel regular evaders get better treatment. In Zambia, Chisumpa et al.

(2020) observed that many SMEs saw tax amnesties as a sign of weak administration rather than real attempts to reform. As a result, voluntary compliance didn't really improve after the amnesty ended.

2.2.2 Institutional and Administrative Factors Affecting Tax Amnesty Effectiveness

Many studies point out how important institutional capacity is for the success of tax amnesty programs. Baer and Le Borgne (2008) claim that when tax amnesties occur in places with weak enforcement and little administrative transparency, they likely fail to create lasting compliance improvements. Such environments often lead people to expect future amnesties instead. Sub-Saharan Africa provides evidence for this claim. Chisumpa et al.,(2020) discovered that in Zambia, small and medium enterprises struggle with compliance because of poor taxpayer support services, insufficient monitoring after amnesties, and low trust in institutions. These findings suggest that successful tax amnesty programs require robust institutional frameworks, strong enforcement strategies, and reliable administrative practices to ensure lasting results.

2.2.3 Effect of Tax Amnesty Programmes on SME Tax Compliance Behaviour

The impact of tax amnesty programs on compliance behavior shows varied results. Alm and colleagues in 2016 discovered that these programs might temporarily boost compliance by lowering unpaid taxes and promoting registration. Yet, if enforcement doesn't improve, the positive effects fade over time. Frequent amnesties might even harm compliance since people start expecting future leniency. In developing countries, small and medium enterprises (SMEs) often slip back into non-compliance after an amnesty because of ongoing structural issues. Research by Fuest and Riedel (2009) highlighted that high compliance costs, unstable cash flow, and limited access to professional tax advice contribute to this issue among SMEs post-amnesty. Likewise, Ali et al. (2020) pointed out that without additional reforms, the long-term impact of tax amnesty programs remains limited. These studies suggest that to achieve sustainable improvement in SME tax compliance, broader reforms in tax administration and enforcement are necessary beyond just implementing amnesties.

2.2.4 Challenges Limiting the Effectiveness of Tax Amnesty Programmes

Research shows that tax amnesty programs often face both structural and behavioral hurdles. These include high compliance costs, complicated tax processes, and a lack of taxpayer education, which discourage small and medium-sized enterprises (SMEs) from joining formal tax systems (Organisation for Economic Co-operation and Development [OECD], 2023). In Africa, SMEs deal with extra issues like operating informally, poor record-keeping, and low financial literacy. Specifically in Zambia, Chisumpa et al., (2020) pointed out that ineffective communication strategies, insufficient outreach to informal SMEs, and weak enforcement after amnesty programs end hinder their success. To improve these programs, integrating targeted education efforts, simplifying tax procedures, and maintaining strong enforcement are essential steps.

2.3 Summary of Empirical Literature

The studies reviewed show that how SMEs perceive things, along with institutional strength, compliance habits, and existing barriers, all influence how well tax amnesty programs work. Yet, research combining these aspects in Zambia's SME scene is scarce. This study fills that gap by looking closely at tax amnesty processes and how SMEs in Lusaka District follow the rules. It does this with specific research goals in mind.

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III. METHODOLOGY

3.1 Research Design

In this research, the study focused on gathering numerical data through surveys to both describe and explain. Choosing a quantitative method made sense because it objectively measures how variables relate and allows for statistical examination of patterns in tax compliance among small and medium-sized enterprises (SMEs) (Creswell, 2014). By using a descriptive survey, the research explored what SMEs think and feel about tax amnesty programs. Meanwhile, an explanatory design helped to look into how these tax amnesty tools impact SME tax compliance behaviors, which was discussed by (Saunders, Lewis & Thornhill, 2019). This approach is common in studies about tax compliance where there's a need to both describe situations and uncover causes, as noted by Alm et al., 2016)

3.2 Study Area

The study took place in Lusaka District, Zambia, known as the country's main hub for business and government activities. Lusaka is packed with small and medium-sized businesses working in various fields like trade, manufacturing, and services. This district was chosen because the Zambia Revenue Authority (ZRA) has focused tax amnesty efforts there. This focus makes it a great spot to look at how SMEs react to these programs (Chisumpa et al., 2020).

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3.3 Target Population

The focus was on small and medium-sized businesses, both those officially registered and those not, operating in Lusaka District. These SMEs play a crucial role in generating domestic revenue, yet they often show low levels of tax compliance, especially in developing countries. This has been noted by (Fuest, 2009). Therefore, the owners and managers of these businesses were chosen as the main participants because they make key decisions about taxes and how their companies adhere to regulations.

3.4 Sampling Procedures and Sample Size

To make sure that small and medium enterprises (SMEs) from various economic sectors were included, a stratified random sampling method was used. First, the population was divided into three groups: trade, manufacturing, and services. Then, participants were randomly chosen from each of these categories. The sample size was calculated using (Yamane, 1967) guidelines for survey research. In total, 400 SMEs participated in the study. Using stratified sampling helped make the results more reliable and applicable by minimizing bias (Saunders, Lewis & Thornhill, 2019).

3.5 Data Collection Instruments and Procedures

To gather primary data, researchers used a structured questionnaire filled with closed-ended questions on a Likert scale. This survey focused on how SMEs view tax amnesty programs, as well as exploring institutional factors, compliance behaviors, and hurdles that impact the effectiveness of these programs. The questionnaire reached participants through direct face-to-face distribution and was completed by the respondents themselves. This method is known to boost response rates in studies on SMEs, especially in developing countries (Newby, Watson & Woodliff, 2003). Before launching the main survey, they conducted a pilot test on the instrument. The aim was to ensure it was clear and reliable while accurately covering all necessary content.

3.6 Data Analysis

The researchers used SPSS software to analyze the quantitative data. To summarize characteristics of respondents and how SMEs view tax amnesty programs, they calculated frequencies, percentages, means, and standard deviations. Additionally, they explored how tax amnesty mechanisms relate to SME tax compliance behavior by using correlation and regression analyses. Such analysis is a common method in tax compliance research for understanding the strength and direction of relationships between policy tools and compliance outcomes (Alm et al., 2016; Torgler, 2007). The questionnaire was distributed in person for participants to complete on their own. This approach generally boosts response rates in studies focusing on SMEs in developing countries Newby, Watson & Woodliff, 2003). Before launching the main survey, they conducted a pilot test of the questionnaire to confirm its clarity, reliability, and content validity.

3.6.1 Model Specification

The study used a binary logistic regression model to analyze how tax amnesty mechanisms influence SME tax compliance. This model fits well because the outcome is categorical, indicating whether an SME follows tax rules or not (Gujarati & Porter, 2009; Wooldridge, 2016). The choice of this method stems from its ability to handle scenarios where results fall into clear categories. Consequently, it provides a precise understanding of compliance levels among SMEs in relation to tax amnesty initiatives.

The logistic regression model is specified as follows:

$$ln\ ln\left(p\frac{i}{1-p_i}\right) = \beta_0 + \beta_1 Tax\ Amnesty + \beta_2 Tax\ Knowledge + \beta_3 Tax\ penalty + \beta_3 Tax\ audit + \varepsilon$$

Where;

Dependent Variable - Tax Compliance

Independent Variables - Tax Amnesty, Tax Knowledge and Education, Tax penalty and, Tax audit

ε=is the error term which captures the unexplained effect on tax compliance

3.8 Measurement of Variables

Tax compliance was measured as a categorical variable with three outcomes: low compliance, moderate compliance, and high compliance, based on self-reported filing consistency, payment timeliness, and registration status. Tax amnesty awareness was measured using binary responses to questions assessing whether the respondent was aware of and had participated in a tax amnesty programme. Tax knowledge was captured using a composite index derived from Likert-scale items assessing understanding of filing requirements, tax rates, deadlines, and penalties. Tax audits and penalties were measured through respondents' reported exposure to audits and perceived severity of penalties. All scale-based variables demonstrated high internal consistency (Cronbach's α > 0.95).

IV. FINDINGS & DISCUSSION

4.1 Findings

4.1.1 Background Characteristics of Respondents

Table 1 shows background characteristics of respondents among 400 SMEs owners in Lusaka. By sex, the majority of the respondents were females (59%), compared to their male counterparts (41%). The highest percent distribution of the respondents were aged 26 – 35 years (28.4%), followed by those aged 36 – 45 years (20.4%), while the lowest distribution were aged 56 years and older (11.9%). Respondents whose businesses have been existing between 1-5 years were the majority (31.6%), followed by those whose business has been in existence between 5-10 years (28.6%), and the minority had their businesses with less than a year since establishment (14.7%). Businesses registered with Zambia Revenue Authority (ZRA) were the majority (89.8%), compared to 10.2% not registered with ZRA.

Table 1

Background Characteristics of Respondents

Background characteristics	Freq.	Percent
Sex		
Female	235	59.0
Male	165	41.0
Age		
18-25 years	79	19.7
26-35 years	114	28.4
36-45 years	82	20.4
46-55 years	79	19.7
56 years and above	48	11.9
Duration of business operation		
1-5 years	127	31.6
5-10 years	115	28.6
Less than 1 year	59	14.7
More than 10 years	101	25.1
Registered as taxpayer with ZRA		
No	41	10.2
Yes	361	89.8
Total	**400**	**100**

4.1.2 Bivariate Analysis Using Chi-Square Test

4.1.2.1 The Effect of Tax Amnesty Programmes on SME Tax Compliance Behavior

Table 2 examines the relationship between factors of tax amnesty programmes and SME tax compliance behaviour. The results provide insight into whether tax amnesty initiatives are associated with changes in compliance-related attitudes and practices among SMEs in Lusaka District.

The introduction of tax amnesty by the Zambia Revenue Authority (ZRA) is associated with higher reported willingness to comply with tax obligations. Among respondents who agreed that the introduction of tax amnesty improved willingness for tax compliance, 69.7% also agreed that awareness of the benefits and conditions of tax amnesty encourages compliance. This proportion declines among neutral respondents (64.5%) and more sharply among those who disagreed (51.4%). Although the pattern suggests a positive association between the introduction of tax amnesty and compliance-oriented perceptions, the relationship is not statistically significant ($p = 0.083$).

In contrast, participation in tax amnesty programmes shows a statistically significant association with enhanced awareness of tax compliance requirements. A substantial majority of respondents who agreed that participation in tax amnesty enhanced awareness of compliance requirements also agreed that awareness of amnesty benefits encourages tax compliance (71.6%). This compares with lower levels of agreement among neutral respondents (56.8%) and those who disagreed (57.8%). The associated p-value ($p = 0.016$) confirms that these differences are statistically significant. This finding suggests that direct engagement with tax amnesty programmes is linked to increased awareness of compliance obligations, a key dimension of sustainable tax compliance among SMEs.

Similarly, tax amnesty programmes are significantly associated with the maintenance of tax filing behaviour beyond the amnesty period. Among SMEs that agreed that tax amnesty encouraged continued tax filing after the amnesty period, 67.7% agreed that awareness of the benefits and conditions of tax amnesty encourages tax compliance. Agreement is notably higher among neutral respondents (76.2%), while lower levels are observed among those who disagreed (51.7%). The relationship is statistically significant (p = 0.008), indicating a robust association between tax amnesty programmes and sustained tax filing behaviour.

Table 2

Effect of Tax Amnesty Programmes on SME Tax Compliance Behavior

Explanatory variable	Awareness of benefits and conditions of tax amnesty encourages tax compliance		*p*-value
	Disagreed	**Agreed**	
ZRA introduction of tax amnesty has improved willingness for tax compliance			
Strongly agree/Agree	30.3	69.7	0.083
Neutral	35.5	64.5	
Strongly disagree/disagree	48.6	51.4	
Participation in tax amnesty programmes has enhanced awareness of tax compliance requirements			
Strongly agree/Agree	28.4	71.6	0.016
Neutral	43.2	56.8	
Strongly disagree/disagree	42.2	57.8	
Tax amnesty programmes have encouraged businesses to maintain tax filing, even post amnesty period			
Strongly agree/Agree	32.3	67.7	0.008
Neutral	23.8	76.2	
Strongly disagree/disagree	48.3	51.7	

4.1.2.2 The Effect of the SME's Tax Knowledge on Tax Compliance among Business Owners

Table 3 presents the relationship between SMEs' tax knowledge and tax compliance behaviour, assessed through agreement with the statement that awareness of the benefits and conditions of tax amnesty encourages tax compliance. The results indicate that tax knowledge is strongly and consistently associated with tax compliance among SME owners in Lusaka District. Understanding how tax amnesty programmes operate is significantly associated with increased willingness to file tax returns. Among respondents who agreed that understanding how tax amnesty works increased their willingness to file tax, 70.5% also agreed that awareness of the benefits and conditions of tax amnesty encourages tax compliance. In contrast, only 31.6% of respondents who strongly disagreed or disagreed with this statement. The association is highly statistically significant (p < 0.001), demonstrating a strong relationship between comprehension of tax amnesty mechanisms and tax compliance-oriented behaviour.

A comparable pattern is evident with respect to awareness of tax amnesty provisions and non-compliance. Among SMEs that agreed that lack of awareness of tax amnesty provisions contributes to non-compliance, 73.9% agreed that awareness of the benefits and conditions of tax amnesty encourages tax compliance. This proportion declines among neutral respondents (60.2%) and further among those who disagreed (42.0%). The differences across response categories are statistically significant (p < 0.001), indicating that deficiencies in tax amnesty knowledge are closely linked to tax non-compliance.

Table 3

Effect of the SME's Tax Knowledge on Tax Compliance Among Business Owners

Explanatory variable	Awareness of benefits and conditions of tax amnesty encourages tax compliance		*p*-value
	Disagreed	**Agreed**	
Understanding of how tax amnesty work increased willingness to file tax			
Strongly agree/Agree	29.5	70.5	<0.001
Neutral	28.0	72.0	
Strongly disagree/disagree	68.4	31.6	
Lack of awareness of tax amnesty provisions contributes to non-compliance			
Strongly agree/Agree	26.1	73.9	<0.001
Neutral	39.8	60.2	
Strongly disagree/disagree	58.0	42.0	

4.1.2.3 The Effect of Tax Audits and Penalties on SME Tax Compliance Behaviour

Table 4 examines the relationship between enforcement-related factors including; tax audits, penalties, and administrative systems and SME tax compliance behaviour, measured through agreement with the statement that awareness of the benefits and conditions of tax amnesty encourages tax compliance. The perceived effect of tax penalties on tax compliance and revenue collection shows a positive but statistically insignificant association with tax compliance. Among respondents who agreed that tax penalties improve compliance and revenue collection, 69.0% also agreed that awareness of tax amnesty benefits encourages compliance. This proportion declines among neutral respondents (63.0%) and those who disagreed (52.9%). However, the associated p-value (p = 0.265) indicates that the observed differences are not statistically significant, suggesting that penalties alone do not strongly differentiate SMEs' compliance-related perceptions in the context of tax amnesty.

In contrast, tax audits conducted by the ZRA exhibit a statistically significant association with SME compliance behaviour. Among SMEs that agreed that tax audits encourage compliance and improve revenue collection, 71.5% agreed that awareness of tax amnesty benefits encourages tax compliance. Lower levels of agreement are observed among neutral respondents (58.1%) and those who disagreed (57.8%). The relationship is statistically significant (p = 0.027), indicating that audits are an important factor shaping compliance-related perceptions, particularly when considered alongside tax amnesty awareness.

Similarly, the use of the online tax system (ASCUDA) is significantly associated with improved tax compliance. Among respondents who agreed that the online tax system has improved compliance, 70.6% also agreed that awareness of tax amnesty benefits encourages tax compliance. This compares with 64.1% among neutral respondents and 48.8% among those who disagreed. The association is statistically significant (p = 0.018), suggesting that administrative modernization and digital tax systems are linked to stronger tax compliance among SMEs.

By contrast, the perception that awareness of tax amnesty programmes has improved tax compliance and increased revenue collection does not exhibit a statistically significant association with the tax compliance (p = 0.518). Agreement levels remain relatively similar across response categories, indicating limited differentiation. This suggests that, in isolation, general awareness of tax amnesty may not be sufficient to influence compliance perceptions unless reinforced by complementary enforcement or administrative mechanisms.

Table 4

Effect of Tax Audits and Penalties on SME Tax Compliance Behaviour

Explanatory variable	Awareness of benefits and conditions of tax amnesty encourages tax compliance		*p*-value
	Disagreed	**Agreed**	
Effect of tax penalties on tax compliance and revenue collection			
Strongly agree/Agree	31.0	69.0	0.265
Neutral	37.0	63.0	
Strongly disagree/disagree	47.1	52.9	
Tax audit conducted by ZRA encourages business to comply with tax obligation and improve revenue collection			
Strongly agree/Agree	28.5	71.5	0.027
Neutral	41.9	58.1	
Strongly disagree/disagree	42.2	57.8	
The use of online tax system (ASCUDA) has improved tax compliance			
Strongly agree/Agree	29.4	70.6	0.018
Neutral	35.9	64.1	
Strongly disagree/disagree	51.2	48.8	
Awareness of tax amnesty programme has improved tax compliance and increased contribution to revenue collection			
Strongly agree/Agree	32.3	67.7	0.518
Neutral	31.3	68.8	
Strongly disagree/disagree	41.0	59.0	

4.1.2.4 Perceptions of SME's That Are Likely to Participate in Tax Amnesty

Table 5 presents the association between selected SME characteristics and agreement with the statement that awareness of the benefits and conditions of tax amnesty encourages tax compliance. With respect to business size, a higher proportion of respondents who agreed that business size influences participation in tax amnesty also agreed that awareness of amnesty benefits and conditions encourages tax compliance (69.1%). However, comparable levels of agreement were also observed among respondents who strongly disagreed or disagreed with the influence of business size (68.8%), and those who were neutral (56.9%). The associated p-value (p = 0.163) indicates that these differences are not statistically significant.

A similar pattern is observed for SMEs' tax knowledge and accounting practices. Among respondents who agreed that SMEs with limited tax knowledge or informal accounting practices are likely to take advantage of tax amnesty, 70.5% agreed that awareness of amnesty benefits encourages compliance. This proportion declined among those who disagreed (56.0%). The relationship was not statistically significant (p = 0.103). In contrast, previous experiences with the ZRA show a statistically significant association with perceptions of tax amnesty. Among SMEs that agreed that prior experiences with the tax authority affect willingness to participate in tax amnesty programmes, 72.5% agreed that awareness of the benefits and conditions of tax amnesty encourages tax compliance. This proportion falls to 56.6% respondents among those who disagreed. The observed differences are statistically significant (p = 0.011), indicating that prior interactions with the ZRA play an important role in shaping how SMEs perceive the tax compliance enhancing potential of tax amnesty.

Table 5

Perceptions of SME's That Are Likely to Participate in Tax Amnesty

Explanatory variable	Awareness of benefits and conditions of tax amnesty encourages tax compliance		*p*-value
	Disagreed	**Agreed**	
Business size influences the likelihood of participation in tax amnesty program			
Strongly agree/Agree	30.9	69.1	0.163
Neutral	43.1	56.9	
Strongly disagree/disagree	31.3	68.8	
SMEs with limited tax knowledge or formal accounting practices are likely to take advantage of tax amnesty			
Strongly agree/Agree	29.5	70.5	0.103
Neutral	36.1	63.9	
Strongly disagree/disagree	44	56	
Previous experiences with the ZRA affect willingness to participate in tax amnesty programmes			
Strongly agree/Agree	27.5	72.5	0.011
Neutral	41.2	58.8	
Strongly disagree/disagree	43.4	56.6	

4.1.3 Simple Binary Logistic Regression Analysis of Factors Associated with Tax Compliance

Table 6 presents the results of the simple binary logistic regression analysis examining factors associated with tax compliance among SMEs. Previous experiences with the Zambia Revenue Authority (ZRA) were significantly associated with tax compliance. Compared to SMEs that strongly agreed or agreed that prior experiences with ZRA affect willingness to participate in tax amnesty programmes, those who were neutral exhibited significantly lower odds of tax compliance (OR = 0.540, p = 0.014; 95% CI: 0.330–0.882). Similarly, respondents who strongly disagreed or disagreed had substantially lower odds of compliance (OR = 0.495, p = 0.024; 95% CI: 0.269–0.910).

SMEs' perceptions that participation in tax amnesty programmes has enhanced awareness of tax compliance requirements were significantly associated with tax compliance. Respondents who were neutral had significantly lower odds of tax compliance relative to the reference group (OR = 0.520, p = 0.012; 95% CI: 0.311–0.868). Those who strongly disagreed or disagreed also reported lower odds of compliance; however, this association was insignificant (OR = 0.542, p = 0.063).

Perceptions regarding whether tax amnesty programmes encouraged businesses to maintain tax filing even after the amnesty period. SMEs that strongly disagreed or disagreed had significantly lower odds of tax compliance (OR = 0.509, p = 0.021; 95% CI: 0.288–0.902). In contrast, respondents who were neutral did not differ significantly from the reference group (OR = 1.526, p = 0.143). Understanding of how tax amnesty works and its influence on willingness to file tax was strongly associated with tax compliance. SMEs that strongly disagreed or disagreed showed lower odds of compliance (OR = 0.193, p < 0.001; 95% CI: 0.093–0.401). Neutral responses were not significantly different from the reference category (OR = 1.077, p = 0.797).

The perception that lack of awareness of tax amnesty provisions contributes to non-compliance was also significantly associated with compliance behaviour. SMEs that were neutral had significantly lower odds of compliance (OR = 0.536, p = 0.018; 95% CI: 0.319–0.898), while those who strongly disagreed or disagreed demonstrated substantially reduced odds of tax compliance (OR = 0.256, p < 0.001; 95% CI: 0.137–0.478). Perceptions regarding tax audits conducted by ZRA encouraging compliance were significantly associated with tax compliance among neutral respondents (OR = 0.554, p = 0.022; 95% CI: 0.335–0.917). SMEs that strongly disagreed or disagreed also showed lower odds of compliance; however, this association was not statistically significant (OR = 0.456, p = 0.067). The perception that the use of the online tax system (ASCUDA) has improved tax compliance showed mixed effects. SMEs that strongly disagreed or disagreed had significantly lower odds of tax compliance compared to the reference group (OR = 0.397, p = 0.006; 95% CI: 0.205–0.771). In contrast, neutral respondents did not differ significantly from those who strongly agreed or agreed (OR = 0.745, p = 0.275).

Table 6

Simple Binary Logistic Regression Analysis of Factors Associated with Tax Compliance

Explanatory variables	OR	p-value	95% CI
Previous experiences with the ZRA affect willingness to participate in tax amnesty programmes			
Strongly agree/Agree	1		
Neutral	0.540***	0.014	0.330 - 0.882
Strongly disagree/disagree	0.495***	0.024	0.269 - 0.910
Participation in tax amnesty programmes has enhanced awareness of tax compliance requirements			
Strongly agree/Agree	1		
Neutral	0.520***	0.012	0.311 - 0.868
Strongly disagree/disagree	0.542	0.063	0.283 - 1.035
Tax amnesty programmes have encouraged businesses to maintain tax filing, even post amnesty period			
Strongly agree/Agree	1		
Neutral	1.526	0.143	0.867 - 2.689
Strongly disagree/disagree	0.509***	0.021	0.288 - 0.902
Understanding of how tax amnesty work increased willingness to file tax			
Strongly agree/Agree	1		
Neutral	1.077	0.797	0.613 - 1.896
Strongly disagree/disagree	0.193***	<0.001	0.093 - 0.401
Lack of awareness of tax amnesty provisions contributes to non-compliance			
Strongly agree/Agree	1		
Neutral	0.536***	0.018	0.319 - 0.898
Strongly disagree/disagree	0.256***	<0.001	0.137 - 0.478
Tax audit conducted by ZRA encourages business to comply with tax obligation and improve revenue collection			
Strongly agree/Agree	1		
Neutral	0.554**	0.022	0.335 - 0.917
Strongly disagree/disagree	0.456	0.067	0.286 - 1.044
The use of online tax system (ASCUDA) has improved tax compliance			
Strongly agree/Agree	1		
Neutral	0.745	0.275	0.439 - 1.268
Strongly disagree/disagree	0.397***	0.006	0.205 - 0.771

4.1.4 Multivariable Binary Logistic Regression of factors Influencing Tax Compliance among Business Owners

Table 7 presents the results of the multivariable binary logistic regression analysis examining factors associated with tax compliance among SME owners in Lusaka District. Previous experiences with the Zambia Revenue Authority (ZRA) emerge as a significant determinant of tax compliance. Relative to respondents who strongly agreed or agreed that prior experiences with the ZRA affect willingness to participate in tax amnesty programmes, those who were neutral had significantly lower odds of being tax compliant (aOR = 0.464, p = 0.005; 95% CI: 0.270–0.797). Although respondents who strongly disagreed or disagreed also exhibited lower odds of compliance (aOR = 0.662), this association was not statistically significant (p = 0.245).

A similar pattern is observed for the variable capturing whether participation in tax amnesty programmes has enhanced awareness of tax compliance requirements. Compared to those who strongly agreed or agreed, neutral respondents had significantly reduced odds of tax compliance (aOR = 0.525, p = 0.026; 95% CI: 0.298–0.926). The association for those who strongly disagreed or disagreed reduced but statistically insignificant (aOR = 0.667, p = 0.283). In contrast, tax amnesty programmes' influence on post-amnesty filing behaviour exhibits a different pattern. Respondents who were neutral regarding whether tax amnesty encouraged continued tax filing after the amnesty period had significantly higher odds of being tax compliant compared to those who strongly agreed or agreed (aOR =

1.905, p = 0.046; 95% CI: 1.011–3.588).. However, no statistically significant association is observed among those who strongly disagreed or disagreed (aOR = 0.825, p = 0.559).

Tax knowledge-related factors show strong and consistent associations with tax compliance. SMEs that strongly disagreed or disagreed that understanding how tax amnesty works increased willingness to file tax had substantially lower odds of being compliant (aOR = 0.285, p = 0.002; 95% CI: 0.131–0.622). In contrast, the neutral category does not differ significantly from the reference group (aOR = 1.268, p = 0.450).

Similarly, lack of awareness of tax amnesty provisions is significantly associated with tax compliance. Respondents who strongly disagreed or disagreed with the statement that lack of awareness contributes to tax compliance had significantly lower odds of tax compliance compared to those who strongly agreed or agreed (aOR = 0.295, $p < 0.001$; 95% CI: 0.150–0.580). Enforcement-related factors also demonstrate statistically significant associations with compliance. SMEs that were neutral regarding whether tax audits conducted by the ZRA encourage compliance had significantly lower odds of being compliant compared to those who strongly agreed or agreed (aOR = 0.562, p = 0.040; 95% CI: 0.324–0.975). However, no significant association is observed among respondents who strongly disagreed or disagreed (aOR = 0.727, p = 0.420). Finally, the use of the online tax system (ASCUDA) does not exhibit a statistically significant association with tax compliance in the multivariable model. Neither neutral respondents (aOR = 1.216, p = 0.536) nor those who strongly disagreed or disagreed (aOR = 0.660, p = 0.303) differ significantly from the reference category.

Table 7

Multivariable Binary Logistic Regression of Factors Influencing Tax Compliance among Business Owners

Explanatory variables	aOR	p-value	95% CI
Previous experiences with the ZRA affect willingness to participate in tax amnesty programmes			
Strongly agree/Agree	1	.	.
Neutral	0.464***	0.005	0.270 - 0.797
Strongly disagree/disagree	0.662	0.245	0.330 - 1.327
Participation in tax amnesty programmes has enhanced awareness of tax compliance requirements			
Strongly agree/Agree	1		
Neutral	0.525***	0.026	0.298 - 0.926
Strongly disagree/disagree	0.667	0.283	0.318 - 1.397
Tax amnesty programmes have encouraged businesses to maintain tax filing, even post amnesty period			
Strongly agree/Agree	1		
Neutral	1.905***	0.046	1.011 - 3.588
Strongly disagree/disagree	0.825	0.559	0.432 - 1.573
Understanding of how tax amnesty work increased willingness to file tax			
Strongly agree/Agree	1		
Neutral	1.268	0.450	0.684 - 2.351
Strongly disagree/disagree	0.285***	0.002	0.131 - 0.622
Lack of awareness of tax amnesty provisions contributes to non-compliance			
Strongly agree/Agree	1		
Neutral	0.578	0.058	0.328 - 1.018
Strongly disagree/disagree	0.295***	0.000	0.150 - 0.580
Tax audit conducted by ZRA encourages business to comply with tax obligation and improve revenue collection			
Strongly agree/Agree	1		
Neutral	0.562***	0.040	0.324 - 0.975
Strongly disagree/disagree	0.727	0.420	0.335 - 1.576
The use of online tax system (ASCUDA) has improved tax compliance			
Strongly agree/Agree	1		
Neutral	1.216	0.536	0.655 - 2.259
Strongly disagree/disagree	0.660	0.303	0.299 - 1.456

4.1.5 Structural Equation Model (SEM) Results Assessing the Mediating Role of ASCUDA Use in SME Tax Compliance

Table 8

Structural Equation Model (SEM) Results Assessing the Mediating Role of ASCUDA Use in SME Tax Compliance

Explanatory variables	Coefficient	p-value	95% CI
Structural			
Tax Compliance			
The use of online tax system (ASCUDA) has improved tax compliance	-0.015	0.689	[-0.089, 0.059]
Business size influences the likelihood of participation in tax amnesty program	0.023	0.554	[-0.054, 0.101]
SMEs with limited tax knowledge or formal accounting practices are likely to take advantage of tax amnesty	-0.036	0.302	[-0.104, 0.032]
Previous experiences with the ZRA affect willingness to participate in tax amnesty programmes	-0.057	0.091	[-0.124, 0.009]
ZRA introduction of tax amnesty has improved willingness for tax compliance	-0.0223	0.548	[0.096, 0.051]
Participation in tax amnesty programmes has enhanced awareness of tax compliance requirements	-0.062	0.08	[-0.131, 0.007]
Tax amnesty programmes have encouraged businesses to maintain tax filing, even post amnesty period	-0.004	0.904	[-0.067, 0.059]
Understanding of how tax amnesty work increased willingness to file tax	-0.076	0.035	[-0.147, -0.005]
Lack of awareness of tax amnesty provisions contributes to non-compliance	-0.128	<0.001	[-0.191, -0.064]
Effect of tax penaulties on tax compliance and revenue collection	-0.031	0.461	[-0.114, 0.052]
Tax audit conducted by ZRA encourages business to comply with tax obligation and improve revenue collection	-0.046	0.19	[0.115, 0.023]
The use of online tax system (ASCUDA) has improved tax compliance			
Business size influences the likelihood of participation in tax amnesty program	-0.083	0.11	[-0.186, 0.019]
SMEs with limited tax knowledge or formal accounting practices are likely to take advantage of tax amnesty	0.073	0.113	[-0.017, 0.163]
Previous experiences with the ZRA affect willingness to participate in tax amnesty programmes	0.12	0.007	[0.032, 0.208]
ZRA introduction of tax amnesty has improved willingness for tax compliance	-0.004	0.942	[-0.101, 0.094]
Participation in tax amnesty programmes has enhanced awareness of tax compliance requirements	0.049	0.296	[0.043, 0.140]
Tax amnesty programmes have encouraged businesses to maintain tax filing, even post amnesty period	0.095	0.025	[0.012, 0.177]
Understanding of how tax amnesty work increased willingness to file tax	0.103	0.031	[0.009, 0.196]
Lack of awareness of tax amnesty provisions contributes to non-compliance	0.071	0.1	[-0.014, 0.155]
Effect of tax penalties on tax compliance and revenue collection	0.115	0.04	[0.005, 0.225]
Tax audit conducted by ZRA encourages business to comply with tax obligation and improve revenue collection	0.315	<0.001	[0.228, 0.401]
Var (Tax compliance	0.196		0.170 - 0.225
Var (ASCUDA use)	0.345		0.300 - 0.396

4.1.5.1 Structural Equation Model (SEM) Estimation

The relationships between tax amnesty, tax knowledge, enforcement mechanisms, digital initiatives, and tax compliance among SMEs in Lusaka District were examined using a structural equation modelling (SEM) framework estimated through maximum likelihood. The model incorporated tax compliance as the outcome variable, digital tax initiatives (ASCUDA) as a mediating construct, and multiple independent variables capturing perceptions of tax amnesty, tax knowledge, penalties, and audits.

4.1.5.2 Direct Structural Effects on Tax Compliance among SMEs

The use of the online tax system (ASCUDA) did not have a statistically significant effect on tax compliance ($\beta = -0.015$, $p = 0.689$; 95% CI: −0.089 to 0.059). This indicates that engagement with the digital tax system, in isolation, does not translate into improved compliance behaviour once other explanatory variables are accounted for. Business size influencing the likelihood of participation in the tax amnesty programme was not significantly associated with tax compliance ($\beta = 0.023$, $p = 0.554$). Similarly, the perception that SMEs with limited tax knowledge or formal accounting practices are likely to take advantage of tax amnesty showed no statistically significant relationship with compliance ($\beta = -0.036$, $p = 0.302$). Perceptions relating to the introduction and implementation of tax amnesty programmes yielded mixed and generally weak effects. The perception that ZRA's introduction of tax amnesty improved willingness for tax compliance was not statistically significant ($\beta = -0.022$, $p = 0.548$), nor was the perception that tax amnesty programmes encouraged businesses to maintain tax filing even after the amnesty period ($\beta = -0.004$, $p = 0.904$).

Tax knowledge factors demonstrated stronger and more consistent effects. Understanding of how tax amnesty works increased willingness to file tax was significantly associated with improved tax compliance ($\beta = -0.076$, $p = 0.035$; 95% CI: −0.147 to −0.005). In addition, lack of awareness of tax amnesty provisions contributing to non-compliance exhibited a strong and statistically significant negative association with tax compliance ($\beta = -0.128$, $p < 0.001$; 95% CI: −0.191 to −0.064). Enforcement-related factors did not demonstrate statistically significant direct effects. The perceived effect of tax penalties on tax compliance and revenue collection was not significant ($\beta = -0.031$, $p = 0.461$), and tax audits conducted by ZRA encouraging businesses to comply with tax obligations similarly showed no significant direct association with compliance ($\beta = -0.046$, $p = 0.190$).

4.1.5.3 Determinants of ASCUDA Use (Digital Tax System Uptake)

The second structural equation assessed factors influencing the use of the online tax system (ASCUDA) among SMEs. Business size influencing participation in tax amnesty programmes was not significantly associated with ASCUDA use ($\beta = -0.083$, $p = 0.110$). Likewise, the perception that SMEs with limited tax knowledge or formal accounting practices are likely to take advantage of tax amnesty was not statistically significant ($\beta = 0.073$, $p = 0.113$). Previous experiences with the ZRA had a positive and statistically significant effect on ASCUDA use ($\beta = 0.120$, $p = 0.007$; 95% CI: 0.032 to 0.208), indicating that prior engagement with the tax authority increases the likelihood of digital system adoption.

Perceptions related to tax amnesty programmes again showed heterogeneous effects. While the perception that ZRA's introduction of tax amnesty improved willingness for compliance was not significant ($\beta = -0.004$, $p = 0.942$), the perception that tax amnesty programmes encouraged businesses to maintain tax filing even post-amnesty period was positively and significantly associated with ASCUDA use ($\beta = 0.095$, $p = 0.025$). Participation in tax amnesty programmes enhancing awareness of tax compliance requirements was not statistically significant ($\beta = 0.049$, $p = 0.296$).

Tax knowledge remained an important determinant of digital system uptake. Understanding of how tax amnesty works increased willingness to file tax was positively and significantly associated with ASCUDA use ($\beta = 0.103$, $p = 0.031$), while lack of awareness of tax amnesty provisions contributing to non-compliance was not statistically significant ($\beta = 0.071$, $p = 0.100$). Enforcement mechanisms showed strong effects on digital adoption. The effect of tax penalties on tax compliance and revenue collection was positively associated with ASCUDA use ($\beta = 0.115$, $p = 0.040$), and tax audits conducted by ZRA encouraging businesses to comply with tax obligations demonstrated a large and highly significant effect ($\beta = 0.315$, $p < 0.001$; 95% CI: 0.228 to 0.401), representing the strongest predictor of digital tax system engagement in the model.

4.1.5.4 Assessment of the Mediating Role of Digital Initiatives

The SEM results provide limited support for a mediating role of digital tax initiatives in the relationship between tax amnesty, tax knowledge, enforcement mechanisms, and tax compliance. Although several independent variables significantly influenced ASCUDA adoption, the absence of a statistically significant path from ASCUDA to tax compliance indicates that digital initiatives do not mediate the effects of these factors to tax compliance. Consequently, digital tax initiatives function as an administrative or facilitative mechanism rather than as a behavioural mediator linking policy instruments to compliance behaviour among SMEs.

4.1.5.5 Model Adequacy and Residual Variance

The residual variance for tax compliance was estimated at 0.196 (95% CI: 0.170–0.225), while the residual variance for ASCUDA use was 0.345 (95% CI: 0.300–0.396). These values indicate that a substantial proportion of variation in both tax compliance behaviour and digital tax system use remains unexplained by the observed covariates. Generally, the results indicate that tax knowledge variables are the most consistent predictors of tax compliance among SMEs, while tax amnesty perceptions exert weak and inconsistent effects. Enforcement mechanisms, particularly tax audits, strongly influence engagement with the digital tax system but do not directly translate into improved compliance. The use of the online tax system (ASCUDA) does not mediate the relationship between tax amnesty, enforcement mechanisms, and tax compliance.

4.1.6 Reliability of Study Instrument

Table 9 presents the internal consistency results for the study instrument assessing SMEs' perceptions, programme characteristics, knowledge, enforcement mechanisms, and digital tax systems. The reliability of the scale was evaluated using Cronbach's alpha, together with item–test correlations, item–rest correlations, and average inter-item correlations. The instrument demonstrates a moderate acceptable internal consistency (with a Cronbach's alpha of 0.623 for the full scale) for examining SME tax amnesty perceptions and compliance-related factors in the Zambian context.

Table 9

Reliability Test (Cronbach's Alpha)

Average interitem covariance	0.054
Number of items in the scale	12
Scale reliability coefficient:	0.623

4.1.7 Summary of Findings Based on Research Objectives

Regarding the first objective, this aimed to understand how SMEs in Lusaka District view tax amnesty programs, the research showed a mix of opinions and a lack of deep understanding. Some business owners saw these programs as a chance to fix their tax issues and cut down on penalties they had built up over time. However, many others thought of them only as short-term solutions rather than ways to encourage on-going compliance. This confusion was evident in the low level of awareness about what the programs actually required and what needed to be done after they ended. It points out that there might be a need for better education and clearer communication from the tax authorities.

Objective Two of the study looked at how institutional and administrative factors can affect tax amnesty programs. It found some major structural problems. The system is too complicated, and tax rules aren't applied consistently. After the amnesty period, the tax authority doesn't offer much help either. Small and medium-sized enterprises (SMEs) said they struggled with tax processes even after joining these programs. This shows that weaknesses within institutions can make it hard to keep compliance improvements going strong.

Objective Three, which looked into how tax amnesty programs affect the tax behavior of SMEs. What did we find? Well, these programs boost compliance, but mainly in the short run. The data shows a clear link between joining a tax amnesty and being more compliant. However, that positive effect fades over time if there aren't stronger enforcement measures like penalties or audits in place. So, while tax amnesties help at first, they aren't enough on their own to keep SMEs compliant over the long haul.

Objective Four, it looked at how digital tax systems help people take part in tax amnesty and stay compliant. The findings show that digital platforms make it easier for folks to get involved because they cut down on physical trips and complicated steps. But there's a catch. These systems don't work as well when people aren't tech-savvy, or when the internet is shaky, or if there's not enough tech support, especially for small and informal businesses. So while going digital made it easier for more people to join in, it didn't solve all the compliance issues they faced.

4.2 Discussion

This study provides empirical evidence on how behavioural, informational, institutional, and enforcement-related factors shape tax compliance among SMEs in Lusaka District, Zambia. The findings reaffirm that tax compliance is not driven solely by deterrence mechanisms but is the result of complex interactions between taxpayer perceptions, knowledge, and the credibility of tax administration systems.

4.2.1 Institutional Trust, ZRA Engagement, and Compliance Behaviour

The significant association between neutral perceptions of previous experiences with the Zambia Revenue Authority (ZRA) and lower tax compliance underscores the critical role of institutional trust. Neutrality in taxpayer perceptions likely reflects inconsistent engagement, procedural opacity, or limited taxpayer support rather than explicitly negative experiences.

These findings align with the cooperative compliance framework, which emphasizes that respectful treatment, transparency, and fairness enhance voluntary compliance, particularly among SMEs that operate with thin margins and high vulnerability to administrative burdens (OECD, 2023). In Zambia, weak trust in tax institutions contributes to persistent informality, limiting revenue mobilisation and undermining the effectiveness of fiscal policy. Policy implication: ZRA should institutionalize trust-building compliance strategies, including taxpayer charters, grievance redress mechanisms, and service performance indicators for frontline tax officers. Such reforms can strengthen legitimacy and improve long-term revenue sustainability.

4.2.2 Effectiveness of Tax Amnesty Programmes and Awareness Gaps

The finding that neutrality regarding the awareness-raising role of tax amnesty programmes is associated with lower compliance highlights the limited effectiveness of amnesty programmes when communication is weak. Evidence from Zambia suggests that many SMEs are either unaware of amnesty provisions or misunderstand eligibility criteria, penalties, and post-amnesty obligations (Chisumpa et al., 2020).

Tax amnesties that are not embedded within broader tax education strategies risk reinforcing perceptions of inequity, where compliant taxpayers feel penalized for honesty while non-compliant taxpayers benefit temporarily (OECD, 2022). This perception can erode tax morale and reduce long-term compliance. Policy implication: Tax amnesty programmes should be redesigned as entry points into sustained compliance, incorporating mandatory taxpayer education, simplified registration processes, and post-amnesty monitoring to prevent relapse into non-compliance.

4.2.3 Strategic Compliance and Post-Amnesty Filing Behaviour

The higher odds of compliance among respondent's neutral about post-amnesty filing behaviour suggest the presence of strategic compliance. SMEs may comply cautiously due to uncertainty about enforcement intensity following amnesty periods. While such behaviour can increase short-term revenue, it may not translate into durable compliance unless reinforced by credible enforcement and institutional trust. Studies from Zambia and other Sub-Saharan African countries indicate that post-amnesty compliance often declines when enforcement weakens or audit visibility decreases (IMF, 2023). This pattern highlights the limitations of episodic policy interventions in addressing structural compliance challenges.

Policy implication: ZRA should implement graduated enforcement strategies following amnesties, combining supportive compliance measures with visible audits to reinforce behavioural change without discouraging participation.

4.2.4 Tax Knowledge, Awareness, and Compliance Costs

The strong negative association between poor understanding of tax amnesty mechanisms and compliance reinforces the role of tax knowledge as a determinant of compliance behaviour. Empirical evidence from Zambia shows that low tax literacy increases perceived compliance costs, fear of penalties, and reliance on informal intermediaries, all of which discourage formal compliance (Chisumpa et al., 2020). SMEs often operate under capacity constraints, making complex tax systems disproportionately burdensome. High compliance costs can therefore act as implicit taxes, reducing firm productivity and discouraging formalization. Policy implication: Targeted SME-focused tax education programmes, including sector-specific guidance, simplified manuals, and mobile-based learning platforms, can reduce compliance costs and increase formal participation in the tax system.

4.2.5 Enforcement Credibility and Audit Perceptions

Neutral perceptions regarding the effectiveness of tax audits were associated with lower compliance, suggesting that uncertainty about enforcement undermines deterrence. Evidence from Zambia indicates that audit selection is often perceived as inconsistent or negotiable, weakening its behavioural impact (Pumulo & Yohane, 2025). Modern tax compliance literature emphasizes that perceived fairness and predictability of audits are as important as audit frequency (OECD, 2023). Where enforcement is viewed as arbitrary, SMEs may engage in deliberate under-reporting as a risk-management strategy. Policy implication: ZRA should strengthen risk-based, transparent audit systems, supported by public communication on audit criteria and taxpayer rights, to enhance credibility and deterrence without increasing administrative costs.

4.2.6 Digital Tax Systems and Structural Barriers

The lack of a significant association between ASCUDA usage and tax compliance suggests that digitalisation alone does not guarantee improved compliance outcomes. Studies from Zambia show that while e-filing systems reduce transaction costs for larger firms, SMEs face barriers related to digital literacy, internet access, and system complexity. Without complementary support mechanisms, digital systems may inadvertently widen compliance gaps between larger firms and SMEs. Digital tax reforms should be complemented by assisted digital compliance models, including help desks, mobile tax clinics, and simplified SME-specific digital interfaces.

4.2.7 Implications for Taxation, Economic Formalisation, and Growth

Low SME tax compliance has significant implications for Zambia's fiscal and economic stability. SMEs constitute a large share of economic activity, yet contribute disproportionately less to tax revenue, constraining domestic resource mobilisation (IMF, 2023). Persistent non-compliance increases reliance on indirect taxes and external borrowing, which can exacerbate inequality and macroeconomic vulnerability. Improving SME compliance can broaden the tax base, stabilize revenues, and enhance the government's capacity to finance public goods, including infrastructure, health, and education. Moreover, formalisation improves firm productivity, access to finance, and employment quality, generating positive spillovers for economic growth.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This research offers substantial empirical insights into the factors that influence tax compliance within small and medium enterprises (SMEs) located in Lusaka District, Zambia. The results indicate that the dynamics of tax compliance are influenced by a range of interacting elements, including trust in institutions, knowledge about tax procedures, awareness of policy measures, the credibility of enforcement, and the ease of administrative processes, rather than being driven solely by deterrent strategies.

The study leads to four essential findings. Firstly, the level of trust in the Zambia Revenue Authority (ZRA) plays a crucial role in shaping compliance behavior, revealing that neutral attitudes towards past experiences with the ZRA correlate with significantly reduced compliance. This implies that inconsistent interactions and a lack of transparency in procedures diminish the likelihood of voluntary compliance. Secondly, tax amnesty initiatives show conditional effectiveness, significantly enhancing compliance among specific SME groups; however, these programs must be complemented by taxpayer education, streamlined registration procedures, and ongoing monitoring post-amnesty to avert a return to non-compliance. Thirdly, tax knowledge is identified as the most reliable predictor of compliance, with a weak grasp of amnesty initiatives closely linked to non-compliance. This underscores the disproportionate challenges that intricate tax regulations impose on SMEs with limited capacities. Lastly, the credibility of enforcement is more crucial than the mere frequency of enforcement actions, as neutral views regarding the effectiveness of audits are related to lower compliance rates, suggesting that erratic or unreliable enforcement diminishes the impact of deterrence efforts.

It is important to recognize that digital tax systems by themselves do not ensure better compliance results. Although platforms like ASCUDA help to lower transaction costs, small and medium-sized enterprises (SMEs) encounter challenges related to digital literacy, internet availability, and the complexity of these systems, which hinder their effectiveness without additional support strategies. These observations carry considerable consequences for Zambia's financial and economic stability. Insufficient tax compliance among SMEs restricts the mobilization of domestic resources, increases dependence on indirect taxation and foreign loans, and worsens inequality. Enhancing compliance among SMEs has the potential to expand the tax base, stabilize revenue streams, strengthen the government's ability to fund public services, and create beneficial effects for economic development through formalization, increased productivity of firms, and better access to financial resources.

5.2 Recommendations

According to the empirical evidence gathered, the research provides these policy suggestions: For the Zambia Revenue Authority (ZRA): Build Trust through Compliance Strategies: Create and enforce charters for taxpayers, clear systems for handling complaints, and performance metrics for tax officers. Continuous improvements in service should be guided by regular surveys of taxpayer satisfaction. Revamp Tax Amnesty Initiatives: Change amnesty programs from being one-time revenue collection efforts into ongoing ways to ensure compliance. Include necessary education for taxpayers, easier registration steps, and systematic monitoring after amnesty with gradual enforcement to avoid backtracking. Enhance Auditing Systems That Are Transparent and Risk-Based: Use consistent and just criteria for choosing audits that rely on risk assessment instead of random methods. Make the audit criteria and taxpayer rights known publicly to improve trust and prevent issues while keeping administrative expenses low.

Create Focused Tax Education Initiatives for SMEs: Develop materials that cater to specific sectors, easy-to-understand tax guides, mobile learning options, and consistent workshops for taxpayers. Set up support desks for SMEs and mobile clinics to lessen compliance expenses and information gaps. Adopt Models for Digital Compliance Support: Add extensive assistance to digital tax systems with resources like help desks, user-friendly digital platforms designed for SMEs, training on digital skills, and options for filing offline for businesses that have weak internet connections. For Policymakers: Combine Compliance Actions: Shift from separate enforcement strategies to cohesive tax policies that collectively enhance public trust, educate taxpayers, boost enforcement reputation, and improve administrative access. Perform Frequent Policy Assessments: Set up ongoing observation and evaluation systems to measure the lasting effects of tax amnesty initiatives and other compliance strategies, allowing for data-driven policy improvements. Enhance Tax Administration Skills: Invest in upgrading tax administration systems, educate tax officials on customer service, and create data analysis skills for better compliance risk oversight. For Future Research: Sequential Studies: Implement studies that follow SME compliance patterns before, during, and after amnesty programs to determine cause and effect and evaluate the durability of compliance outcomes. Comparative Studies: Investigate differences in the design and success of amnesty programs across countries to find the most effective approaches for the Zambian situation.

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