

Moderating Effect of Tax Amnesty on the Influence of Tax Systems Digitization, Taxpayer Education, and Perceived Fairness on Turnover Tax Compliance Among Micro and Small Enterprises in Machakos Town, Kenya

Ambrose Mutisya^{1*}, Moses Nyangu², Lucy Rono³

¹Department of Tax and Customs Administration, Kenya School of Revenue Administration

²Development Finance, Strathmore University Business School

³Department of Accounting and Finance, Moi University

*Corresponding Author Email: official.mbuvi@gmail.com

Accepted: 16 July 2026 || Published: 22 August 2026

Abstract

Governments across the globe are increasingly relying on tax amnesties and simplified regimes to enhance compliance and expand revenue mobilisation within the micro and small enterprise (MSE) sector. This study examined the moderating effect of tax amnesty on the relationship between digitisation of tax systems, taxpayer education, perceived fairness of tax laws, and turnover tax compliance among MSEs in Machakos Town, Kenya. It assessed the direct effects of these three factors on compliance and evaluated whether tax amnesty strengthens these relationships. Anchored in Social Influence Theory, Technological Determinism Theory, and Supply-Side Tax Theory, the study adopted an explanatory research design. From a target population of 26,481 registered MSEs, a stratified random sample of 386 enterprises was selected. Primary data were collected using structured questionnaires and analysed through descriptive statistics and hierarchical multiple regression in STATA version 14. The baseline model showed that digitisation ($\beta = 0.264$, $p < 0.001$), taxpayer education ($\beta = 0.324$, $p < 0.001$), and perceived fairness ($\beta = 0.299$, $p < 0.001$) all positively and significantly affected compliance, jointly explaining 66.8% of the variance ($R^2 = 0.668$). Tax amnesty had a positive direct effect ($\beta \approx 0.18$, $p < 0.001$), and its interactions with digitisation ($\beta \approx 0.13$, $p < 0.001$), taxpayer education ($\beta \approx 0.12$, $p < 0.001$), and perceived fairness ($\beta \approx 0.11$, $p < 0.001$) were all significant, confirming its moderating role. MSE age and size also showed positive, significant effects. The study concludes that digitisation, taxpayer education, and perceived fairness significantly enhance turnover tax compliance, particularly when reinforced by strategically implemented amnesty programmes. It recommends that the Kenya Revenue Authority intensify digital tax reforms, strengthen taxpayer education, promote fairness and transparency, and apply amnesty programmes selectively to sustain long-term compliance and tax base expansion.

Keywords: *Tax Amnesty, Digitization of Tax Systems, Taxpayer Education, Perceived Fairness, Turnover Tax Compliance, Digital Tax Reforms.*

How to Cite: Mutisya, A., Nyangu, M., & Rono, L. (2026). Moderating Effect of Tax Amnesty on the Influence of Tax Systems Digitization, Taxpayer Education, and Perceived Fairness on Turnover Tax Compliance Among Micro and Small Enterprises in Machakos Town, Kenya. *Journal of Finance and Accounting*, 6(7), 43-56.

1. Introduction

Governments across the world rely on tax revenue to finance public services, promote economic development, and reduce inequality, yet taxing micro and small enterprises (MSEs) remains a persistent challenge, particularly in developing economies characterized by high informality (OECD, 2014; Bird & Zolt, 2008). To address this challenge, many countries have adopted simplified tax regimes, including turnover tax and other presumptive taxes, which are designed to lower compliance costs and administrative burdens for small businesses (Mas-Montserrat et al., 2023; Hoy et al., 2024). Historically, turnover taxes were widely used in Europe before being replaced by value-added tax (VAT) due to cascading effects; however, they continue to be applied in developing and transition economies where accounting capacity among MSEs is limited (Vonyó, 2018; Wei & Wen, 2023). Despite their simplicity, evidence from Sub-Saharan Africa shows that simplified regimes have delivered mixed compliance outcomes, largely due to weak digital infrastructure, low taxpayer awareness, and persistent perceptions of unfairness in tax administration (Fjeldstad & Heggstad, 2012; ATAF, 2021).

In Kenya, micro and small enterprises play a critical role in economic growth, employment creation, and value addition, accounting for a substantial share of national output and labour absorption (KNBS, 2016; KIPPRA, 2019). To integrate this sector into the tax base, the Kenyan government reintroduced turnover tax (TOT) in 2020, targeting businesses below a specified revenue threshold and relying heavily on digital platforms such as iTax and mobile payment systems (KRA, 2020; Hoy et al., 2024). However, turnover tax compliance among MSEs has remained below policy targets, with the sector consistently classified as hard to tax by the Kenya Revenue Authority (KRA, 2020; IEA, 2012). In response, recent tax administration strategies have prioritized digitisation of tax systems, taxpayer education, and fairness in tax administration, recognizing that voluntary compliance depends not only on enforcement but also on administrative efficiency, taxpayer knowledge, and trust in tax institutions (Kirchler, 2007; OECD, 2022; Ogungbesan, 2023).

Alongside these reforms, tax amnesty programmes have increasingly been adopted as policy instruments to encourage voluntary disclosure, clear accumulated penalties and interest, and facilitate the reintegration of non-compliant taxpayers into the formal system (Baer & Le Borgne, 2008; Luitel & Sobel, 2022). Kenya's recent tax amnesty initiatives saw high uptake and substantial short-term revenue gains, particularly among MSEs, highlighting their potential to expand the tax base (KRA, 2024). However, the long-term effects of tax amnesties on compliance behaviour remain contested, with concerns that frequent or poorly designed amnesties may undermine tax morale and encourage strategic non-compliance (Ali, Fjeldstad, & Sjursen, 2014; OECD, 2021). While existing studies have examined the direct determinants of tax compliance and the revenue effects of amnesty programmes, limited empirical research has explored the moderating role of tax amnesty in shaping how digitisation, taxpayer education, and perceived fairness influence turnover tax compliance. Addressing this gap, the present study examines these relationships among MSEs in Machakos Town, Kenya, contributing evidence on how technological, behavioural, institutional, and policy instruments interact to influence compliance behaviour in simplified tax regimes.

1.1 Problem Statement

Despite the widespread adoption of simplified tax regimes such as turnover tax, tax compliance among micro and small enterprises (MSEs) remains persistently low in many developing economies. Although turnover tax is designed to reduce administrative and compliance costs, empirical evidence shows that informality, limited tax knowledge, weak institutional trust, and negative perceptions of fairness continue to undermine voluntary compliance among small businesses (OECD, 2021; Fjeldstad & Heggstad, 2012). As a result, simplified regimes have not consistently delivered the intended outcomes of sustained revenue growth and effective tax base expansion, particularly within the MSE sector.

In Kenya, micro and small enterprises constitute a significant share of economic activity and employment, yet they remain one of the most non-compliant taxpayer segments. Despite the reintroduction of turnover tax in 2020 and increased reliance on digital platforms such as iTax and mobile payment systems, compliance levels among MSEs have remained below policy targets, contributing to revenue underperformance in recent fiscal years (KRA, 2020; IEA, 2012). While the Kenya Revenue Authority has prioritized digitisation of tax systems, taxpayer education, and fairness-oriented administrative reforms, existing empirical studies have largely examined these factors independently and report mixed findings on their effectiveness in improving turnover tax compliance (Wanjagi, 2018; Ondabu, 2018; Ogungbesan, 2023).

At the same time, tax amnesty programmes have increasingly been used to encourage voluntary disclosure and reintegrate non-compliant taxpayers into the formal system, with recent Kenyan amnesties recording high uptake and significant short-term revenue gains (KRA, 2024). However, the long-term behavioural effects of tax amnesty remain contested, particularly regarding its interaction with core compliance drivers such as digitisation, taxpayer education, and perceived fairness of tax laws (Ali, Fjeldstad, & Sjursen, 2014; OECD, 2021). Moreover, limited attention has been given to firm-level heterogeneity, including enterprise age and size, which may condition compliance behaviour. Consequently, there is insufficient empirical evidence on the moderating role of tax amnesty in shaping turnover tax compliance among MSEs in Kenya. This study addresses this gap by examining how tax amnesty moderates the relationship between key determinants of compliance and turnover tax compliance among micro and small enterprises in Machakos Town.

1.2 Objective of the Study

The objective of the study was to evaluate the moderating effect of tax amnesty on the influence of tax systems digitization, taxpayer education, and perceived fairness on turnover tax compliance among micro and small enterprises in Machakos Town, Kenya.

2. Literature Review

2.1 Theoretical Foundations of Tax Compliance

Tax compliance has traditionally been explained by deterrence-based models, which assume that taxpayers comply primarily out of fear of audits and penalties (Allingham & Sandmo, 1972). While this framework highlights the role of enforcement, it has been widely criticized for its limited explanatory power in contexts characterized by low enforcement capacity and high informality, such as micro and small enterprises (MSEs) in developing economies (Alm, 2019; OECD, 2021). Contemporary tax compliance research increasingly adopts behavioural and institutional perspectives, recognizing that compliance decisions are shaped by social

norms, trust, perceptions of fairness, and administrative efficiency rather than coercion alone (Kirchler, 2007; Gangl et al., 2020).

Social Influence Theory provides a useful lens for understanding compliance behaviour among MSEs, as it emphasizes the role of social norms, peer behaviour, and perceived legitimacy of authority in shaping individual decisions (Cialdini & Goldstein, 2004). Within the tax context, this theory suggests that taxpayers are more likely to comply when they believe that others in their reference group comply and when tax authorities are perceived as legitimate and fair (Alm & Torgler, 2006). For small enterprises embedded in close-knit business communities, social learning and normative pressure can significantly influence compliance behaviour, particularly when reinforced through taxpayer education and transparent enforcement practices.

Technological Determinism Theory further explains how digital innovations reshape organisational behaviour by altering processes, reducing transaction costs, and restructuring interactions between taxpayers and authorities (Orlikowski, 1992). Applied to taxation, this theory suggests that digitisation of tax systems such as electronic filing, automated assessments, and mobile payment platforms can enhance compliance by simplifying procedures, reducing errors, and limiting discretionary contact that may foster corruption (Okunogbe & Pouliquen, 2022). However, technological determinism also recognizes that the impact of technology depends on institutional context and user capability, implying that digital reforms alone may not yield optimal compliance outcomes without complementary behavioural and policy interventions.

Supply Side Tax Theory complements these perspectives by focusing on how tax policy design and incentives influence taxpayer behaviour (Slemrod, 2019). From this viewpoint, instruments such as tax amnesty reduce the effective cost of compliance by lowering penalties and uncertainty, thereby encouraging voluntary disclosure and re-entry into the tax system. While supply-side theory supports the strategic use of amnesty programmes, it also cautions that poorly designed or frequently repeated amnesties may weaken tax morale and encourage strategic non-compliance if taxpayers anticipate future relief (Baer & Le Borgne, 2008; OECD, 2021). This theoretical tension underscores the importance of examining tax amnesty not only as a direct policy tool but also as a moderating mechanism that conditions the effectiveness of other compliance drivers.

2.2 Empirical Review

2.2.1 Determinants of Turnover Tax Compliance

Empirical studies consistently show that digitisation of tax systems is a significant determinant of tax compliance, particularly among small enterprises. Digital platforms reduce compliance costs, improve record accuracy, and enhance monitoring capacity, leading to higher filing and payment rates (OECD, 2022; Okunogbe & Pouliquen, 2022). In Sub-Saharan Africa, electronic filing and mobile payment systems have been associated with improved compliance outcomes among SMEs, although adoption remains uneven due to digital literacy gaps and infrastructural constraints (Fjeldstad et al., 2020). Kenyan studies similarly report positive effects of digitisation on compliance but note that its effectiveness depends on taxpayer familiarity and perceived ease of use (Wanjagi, 2018; Ogungbesan, 2023).

Taxpayer education has also been widely recognised as a critical behavioural determinant of compliance. Education initiatives enhance taxpayers' understanding of tax obligations, procedures, and penalties, thereby reducing non-compliance arising from ignorance or misinformation (Mascagni, Dom, & Santoro, 2021). Empirical evidence from developing countries shows that targeted education and sensitisation programmes improve voluntary compliance, particularly among small businesses with limited access to professional tax advisory services (Alm & Torgler, 2023). In Kenya, studies indicate that taxpayer education positively influences compliance, though its impact varies across sectors and enterprise maturity levels (Ondabu, 2018).

Perceived fairness of tax laws and administration is another well-established determinant of compliance. Behavioural tax literature demonstrates that taxpayers are more willing to comply when tax systems are perceived as equitable, transparent, and consistently enforced (Kirchler et al., 2021). Perceptions of procedural fairness, distributive equity, and respectful treatment by tax authorities enhance trust and legitimacy, thereby strengthening voluntary compliance (Gangl et al., 2020). In the context of MSEs, fairness perceptions are particularly salient, as small firms are more sensitive to perceived inequities in enforcement and the distribution of tax burdens (Mascagni & Santoro, 2021).

2.2.2 Tax Amnesty as a Moderating Policy Instrument

Tax amnesty programmes have been extensively studied for their short-term revenue effects, with evidence showing that well-designed amnesties can attract previously non-compliant taxpayers and generate immediate fiscal gains (Baer & Le Borgne, 2008; Luitel & Sobel, 2022). However, empirical findings on their long-term compliance effects remain mixed. Some studies report improved post-amnesty compliance when amnesty is combined with credible enforcement and administrative reforms, while others caution that repeated amnesties may erode tax morale and encourage strategic non-compliance (Ali et al., 2014; OECD, 2021).

Notably, much of the existing literature treats tax amnesty as an independent policy intervention, with limited attention to its interactions with other determinants of compliance. Recent behavioural studies suggest that amnesty may enhance the effectiveness of digital reforms and education initiatives by lowering psychological barriers to compliance and reducing fear of penalties associated with disclosure (Alm, 2021). Similarly, amnesty programmes may reinforce fairness perceptions by signalling institutional responsiveness and proportionality in enforcement. Despite these insights, empirical studies examining tax amnesty as a moderating variable, particularly in the context of turnover tax compliance among MSEs, remain scarce, especially in Sub-Saharan Africa and Kenya.

2.3 Synthesis and Research Gap

The reviewed literature demonstrates that tax compliance among MSEs is shaped by a complex interaction of technological, behavioural, institutional, and policy factors. While digitisation, taxpayer education, and perceived fairness are well-established determinants of compliance, their effectiveness appears contingent on broader policy contexts and firm-level characteristics. Existing studies have largely examined these factors independently, with limited integration of tax amnesty as a moderating mechanism and insufficient consideration of enterprise heterogeneity. This study addresses these gaps by empirically examining the moderating role

of tax amnesty in the relationship between key compliance determinants and turnover tax compliance among micro and small enterprises in Machakos Town, Kenya.

3. Methodology

This study adopted an explanatory research design to examine the relationships between digitisation of tax systems, taxpayer education, perceived fairness of tax laws, tax amnesty, and turnover tax compliance among micro and small enterprises (MSEs) in Machakos Town, Kenya. The target population comprised 26,481 registered MSEs, from which a stratified random sample of 395 enterprises was selected to ensure representation across key business sectors. Primary data were collected using structured questionnaires administered to enterprise owners or managers, capturing information on firm characteristics, tax compliance behaviour, and perceptions of tax administration. The research instrument was pre-tested to enhance validity and reliability, and ethical considerations, including informed consent and confidentiality, were strictly observed throughout the data collection process.

Data analysis involved both descriptive and inferential techniques, with the latter conducted using hierarchical multiple regression in Stata version 14. The hierarchical approach enabled the sequential estimation of models to assess the direct effects of digitisation, taxpayer education, and perceived fairness on turnover tax compliance, as well as the moderating role of tax amnesty through interaction terms. Firm-level characteristics, specifically enterprise age and enterprise size, were introduced as control variables to test the robustness of the relationships. Model adequacy was assessed using R^2 , adjusted R^2 , F-statistics, and significance levels, while interaction effects were interpreted to determine the conditional influence of tax amnesty on compliance behaviour. This analytical strategy allowed for a comprehensive examination of the combined and moderating effects of technological, behavioural, institutional, and firm-specific factors on turnover tax compliance among MSEs.

4. Results and Discussion

4.1 Correlation Analysis

This section presents the results of the bivariate correlation analysis conducted to examine the strength and direction of the relationships between the study variables prior to multivariate testing. Pearson's correlation was used to assess the associations between digitisation of tax systems, taxpayer education, perceived fairness of tax laws, and tax amnesty on turnover tax compliance. The analysis aimed to provide preliminary evidence of the hypothesised relationships and to screen for potential multicollinearity among the explanatory variables before proceeding to the hierarchical regression analysis. The results are summarised in Table 1.

Table 1: Bivariate Linear Correlation Analysis

Variable	Digitization of Tax Systems	Taxpayer Education	Perceived Fairness of Tax Laws	Tax Amnesty	Tax Compliance
Digitisation of Tax Systems	1				
Taxpayer Education	.761*	1			
Perceived Fairness of Tax Laws	.758*	.795*	1		
Tax Amnesty	.801*	.773*	.794*	1	
Turnover Tax Compliance	.737*	.762*	.756*	.783*	1
<i>Note: *Correlation is significant at the 0.01 level (2-tailed). N = 343.</i>					

The bivariate correlation analysis revealed strong, positive, and statistically significant relationships between all study variables and turnover tax compliance among micro and small enterprises (MSEs). Digitisation of tax systems exhibited a strong positive correlation with compliance ($r = 0.737$, $p < 0.01$), indicating that the use of digital platforms such as iTax enhances filing convenience, accuracy, and timeliness. Taxpayer education was also strongly correlated with turnover tax compliance ($r = 0.762$, $p < 0.01$), suggesting that improved awareness and understanding of tax obligations promote voluntary compliance. Similarly, perceived fairness of tax laws showed a strong positive relationship with compliance ($r = 0.756$, $p < 0.01$), implying that equitable, transparent, and consistently enforced tax systems enhance taxpayers' willingness to comply. Tax amnesty recorded the strongest correlation with turnover tax compliance ($r = 0.783$, $p < 0.01$), highlighting its role in encouraging previously non-compliant enterprises to regularise their tax status and sustain compliance. These findings are consistent with prior empirical studies linking digitisation, education, fairness, and amnesty programmes to improved tax compliance behaviour (Onyango & Njeru, 2021; Mugambi & Jagongo, 2022; Ngeno & Kosgei, 2022; Nyaga & Omwenga, 2023).

The analysis further revealed strong and significant intercorrelations among the explanatory variables, particularly between digitisation and taxpayer education ($r = 0.761$, $p < 0.01$) and between taxpayer education and perceived fairness ($r = 0.795$, $p < 0.01$), underscoring the interconnected nature of tax administration reforms. These associations suggest that digitalisation, education, and fairness operate synergistically to influence compliance outcomes rather than in isolation. While the relatively high correlation coefficients signal strong relationships, diagnostic tests confirmed that multicollinearity was not a concern. Variance Inflation Factor (VIF) values were below the recommended threshold of 5, and tolerance values exceeded 0.1, indicating that the regression estimates are stable and suitable for inferential analysis (Gujarati & Porter, 2021). Overall, the correlation results provide strong preliminary support for the hypothesised relationships and justify the use of multivariate regression analysis to examine direct and moderating effects on turnover tax compliance.

4.2 Regression Analysis Results

The study employed hierarchical multiple regression analysis to examine the influence of digitisation of tax systems, taxpayer education, and perceived fairness of tax laws on turnover tax compliance, as well as the moderating effect of tax amnesty. The regression analysis was conducted in stages to assess the incremental explanatory power of the predictors, the moderating variable, the interaction terms, and the firm-level control variables.

Table 2: Regression Results Before Moderation (Baseline Direct-Effects Model)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	1.407	.100		14.110	.000
Digitisation of Tax Systems	.200	.040	.264	5.038	.000
Taxpayer Education	.250	.043	.324	5.761	.000
Perceived Fairness of Tax Laws	.226	.042	.299	5.334	.000

Model fit: $R = .817$; $R^2 = .668$; Adjusted $R^2 = .665$; $F = 226.918$, $p < .001$. Dependent variable: Turnover Tax Compliance.

In the baseline model, digitisation of tax systems ($\beta = .264$), taxpayer education ($\beta = .324$) and perceived fairness of tax laws ($\beta = .299$) all had positive and statistically significant effects on turnover tax compliance ($p < .001$). Together the three predictors explained 66.8% of the variance in compliance ($R^2 = .668$), confirming a strong baseline relationship between technological, behavioural and institutional factors and compliance behaviour among MSEs.

Table 3: Regression Results After Moderation (Full Moderated Model)

Variable	B	Std. Error	t	Sig.
(Constant)	0.436	0.089	4.90	.000
Digitisation of Tax Systems (X_1)	0.271	0.042	6.45	.000
Taxpayer Education (X_2)	0.236	0.039	6.05	.000
Perceived Fairness of Tax Laws (X_3)	0.219	0.037	5.92	.000
Tax Amnesty (M)	0.181	0.034	5.32	.000
Digitisation $\times$ Tax Amnesty (X_1M)	0.137	0.030	4.57	.000
Taxpayer Education $\times$ Tax Amnesty (X_2M)	0.121	0.028	4.32	.000
Perceived Fairness $\times$ Tax Amnesty (X_3M)	0.109	0.027	4.04	.000

Model fit (fully moderated): $R = .864$; $R^2 = .747$; Adjusted $R^2 = .741$; ΔR^2 from interaction terms significant, $p < .001$. Control variables MSE Age ($\beta = 0.094$, $p < .001$) and MSE Size ($\beta = 0.081$, $p < .001$) were positive and significant; their inclusion did not alter the main or interaction effects. Dependent variable: Turnover Tax Compliance.

With tax amnesty and the interaction terms added, all main effects remained positive and significant, and tax amnesty had a positive direct effect ($\beta = 0.181$, $p < .001$). The three interaction terms; digitisation $\times$ amnesty ($\beta = 0.137$), education $\times$ amnesty ($\beta = 0.121$) and fairness $\times$ amnesty ($\beta = 0.109$), all $p < .001$ were positive and significant, confirming that tax amnesty strengthens the influence of each predictor on compliance. The fully moderated model explained 74.7% of the variance ($R^2 = .747$), a significant improvement over the baseline. Including MSE age and size did not weaken the main or moderating effects, confirming the robustness of the results.

Table 4: Hierarchical Regression Summary for Turnover Tax Compliance

Model	Variables Entered	R	R ²	ΔR^2	Adjusted R ²	F-Change	Sig.
Model (i)	X ₁ , X ₂ , X ₃	0.817	0.668	–	0.665	226.918	0.000
Model (ii)	X ₁ , X ₂ , X ₃ , M	0.833	0.694	0.026	0.691	31.204	0.000
Model (iii)	Model (ii) + X ₁ $\times$ M	0.846	0.716	0.022	0.712	18.673	0.000
Model (iv)	Model (iii) + X ₂ $\times$ M	0.856	0.733	0.017	0.728	15.492	0.000
Model (v)	Model (iv) + X ₃ $\times$ M	0.864	0.747	0.014	0.741	13.105	0.000
Model (vi-a)	Model (v) + MSE Age	0.821	0.674	0.027	0.666	118.21	0.000
Model (vi-b)	Model (v) + MSE Size	0.816	0.666	0.019	0.658	116.02	0.000

Finally, hierarchical models incorporating control variables (MSE age and MSE size) were estimated to test the robustness of the findings. Both control variables exhibited positive and statistically significant effects on turnover tax compliance, suggesting that older and larger enterprises are more likely to comply with turnover tax obligations. Importantly, the inclusion of these controls did not alter the magnitude or significance of the main and interaction effects, confirming the stability and robustness of the regression results. Overall, the regression analysis demonstrates that turnover tax compliance among MSEs is jointly influenced by technological efficiency, taxpayer capability, institutional fairness, supportive policy incentives, and firm-specific characteristics.

4.3 Summary

This study examined the moderating effect of tax amnesty on the relationship between digitisation of tax systems, taxpayer education, perceived fairness of tax laws, and turnover tax compliance among micro and small enterprises (MSEs) in Machakos Town, Kenya. The motivation for the study stemmed from persistent compliance challenges within the MSE sector despite the adoption of simplified tax regimes and ongoing tax administration reforms. Grounded in Social Influence Theory, Technological Determinism Theory, and Supply Side Tax Theory, the study adopted an explanatory research design to capture the behavioural, technological, institutional, and policy dimensions of tax compliance.

Primary data were collected from a stratified random sample of 395 registered MSEs using structured questionnaires, and analysed using descriptive statistics, bivariate correlation analysis, and hierarchical multiple regression in STATA version 14. The analysis proceeded in stages, beginning with a baseline model assessing the direct effects of digitisation of tax systems, taxpayer education, and perceived fairness of tax laws on turnover tax compliance. Subsequent models introduced tax amnesty as both an independent variable and a moderating variable via interaction terms, followed by robustness checks that incorporated firm-level control variables (enterprise age and enterprise size).

The findings reveal that digitisation of tax systems, taxpayer education, and perceived fairness of tax laws all have positive and statistically significant effects on turnover tax compliance. The baseline model explained a substantial proportion of the variance in compliance behaviour, demonstrating the importance of technological efficiency, taxpayer capability, and institutional fairness. The inclusion of tax amnesty significantly improved model fit and explanatory power, while the interaction effects confirmed that tax amnesty strengthens the influence of digitisation, education, and fairness on compliance. Further analysis showed that enterprise age and size positively influence compliance, without weakening the main or moderating effects. Overall, the results demonstrate that turnover tax compliance among MSEs is shaped by a combination of technological, behavioural, institutional, policy, and firm-specific factors.

5. Conclusion

Based on the findings, the study concludes that turnover tax compliance among micro and small enterprises cannot be explained by isolated administrative or enforcement measures. Instead, compliance behaviour is driven by the interaction of multiple factors, including the effectiveness of digital tax systems, the level of taxpayer education, perceptions of fairness in tax laws and administration, and the strategic use of tax amnesty programmes. Digitisation of tax systems enhances compliance by simplifying procedures, reducing errors, and lowering compliance costs, while taxpayer education improves awareness, understanding, and voluntary compliance. Perceived fairness of tax laws and enforcement further strengthens compliance by enhancing trust and legitimacy in the tax system.

The study further concludes that tax amnesty plays a critical moderating role in shaping turnover tax compliance. Beyond its direct effect, tax amnesty amplifies the positive influence of digitisation, taxpayer education, and perceived fairness by lowering psychological and financial barriers to compliance and encouraging voluntary disclosure. When implemented strategically and complemented by administrative reforms, tax amnesty enhances the effectiveness of core compliance drivers rather than undermining tax morale. This finding provides empirical support for viewing tax amnesty as a conditional policy instrument rather than a standalone intervention.

Finally, the study concludes that firm-level characteristics matter in explaining compliance behaviour. Older and larger enterprises are more likely to comply with turnover tax obligations due to accumulated experience, greater administrative capacity, and increased exposure to enforcement. Importantly, however, the inclusion of these firm-level controls does not diminish the strength or significance of the main and moderating effects, confirming the robustness of the study's findings. Overall, the study validates an integrated compliance framework in which technological reforms, behavioural interventions, institutional fairness, and supportive policy instruments jointly influence turnover tax compliance among MSEs. These conclusions

provide a strong empirical basis for designing holistic and segmented tax administration strategies to sustain long-term compliance and expand the tax base in Kenya and comparable developing economies.

6. Recommendations

Based on the findings, the study recommends that the Kenya Revenue Authority (KRA) should continue expanding and improving digital tax platforms such as iTax and integrated mobile-payment channels, prioritising simpler interfaces, system reliability, and digital onboarding support for MSEs. Because digitisation showed a strong positive effect on compliance, investment in user-friendly, accessible technology should be prioritised, particularly for enterprises with limited digital literacy.

Further, given the significant influence of taxpayer education, KRA and county governments should institutionalise continuous, sector-specific education programmes for MSEs covering turnover tax obligations, filing procedures, available reliefs, and penalties, delivered through accessible channels such as business associations, market forums, and mobile platforms.

KRA should promote fairness and transparency in tax administration. Since perceived fairness significantly enhances compliance, the Authority should strengthen procedural fairness, enforcement consistency, and transparency in the use of public revenue. Clear communication on how taxes are assessed and utilised can build trust and reinforce voluntary compliance among small enterprises.

Having observed that tax amnesty programs strengthen the effect of digitization, education, and fairness on compliance, policymakers should design amnesty programs as periodic, well-timed, and clearly communicated interventions linked to credible enforcement and administrative reform, rather than frequent or open-ended relief, to avoid eroding tax morale and encouraging strategic non-compliance.

Having observed that compliance is driven by the combined influence of technological, behavioural, institutional, and policy factors, KRA should pair digital reforms and taxpayer education with fairness-oriented administration and supportive amnesty windows, rather than applying these interventions in isolation.

The study also recommends that tax compliance strategies should be tailored to enterprise maturity and size. Since older and larger enterprises were more compliant, segmented strategies are needed. Targeted support, simplified processes, and capacity-building should be directed at younger and smaller MSEs that face greater compliance challenges.

Future studies should examine the long-term behavioural effects of repeated tax amnesties, extend the analysis to other towns and sectors for comparability, and use longitudinal data to assess causality over time.

References

- African Tax Administration Forum (ATAF). (2021). Taxing the informal sector: Understanding the challenges and opportunities. Pretoria: ATAF.
- Ali, M., Fjeldstad, O.-H., & Sjørnsen, I. H. (2014). To pay or not to pay? Citizens' attitudes toward taxation in Kenya, Tanzania, Uganda, and South Africa. *World Development*, 64, 828–842. <https://doi.org/10.1016/j.worlddev.2014.07.006>
- Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, 1(3–4), 323–338. [https://doi.org/10.1016/0047-2727\(72\)90010-2](https://doi.org/10.1016/0047-2727(72)90010-2)
- Alm, J. (2019). What motivates tax compliance? *Journal of Economic Surveys*, 33(2), 353–388. <https://doi.org/10.1111/joes.12272>
- Alm, J. (2021). Measuring, explaining, and controlling tax evasion: Lessons from theory, experiments, and field studies. *International Tax and Public Finance*, 28(2), 1–25.
- Alm, J., & Torgler, B. (2006). Culture differences and tax morale in the United States and in Europe. *Journal of Economic Psychology*, 27(2), 224–246. <https://doi.org/10.1016/j.joep.2005.09.002>
- Alm, J., & Torgler, B. (2023). Culture, institutions, and tax morale. *Journal of Economic Surveys*, 37(1), 1–29.
- Baer, K., & Le Borgne, E. (2008). Tax amnesties: Theory, trends, and some alternatives. International Monetary Fund.
- Bird, R. M., & Zolt, E. M. (2008). Technology and taxation in developing countries: From hand to mouse. *National Tax Journal*, 61(4), 791–821. <https://doi.org/10.17310/ntj.2008.4.07>
- Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology*, 55, 591–621. <https://doi.org/10.1146/annurev.psych.55.090902.142015>
- Fjeldstad, O.-H., & Heggstad, K. (2012). Building taxpayer culture in Mozambique, Tanzania and Zambia: Achievements, challenges and policy recommendations (CMI Report R 2012:1). Chr. Michelsen Institute.
- Fjeldstad, O. H., Kagoma, C., Mdee, E., Sjørnsen, I. H., & Somville, V. (2020). The customer is king: Evidence on VAT compliance in Tanzania. *World Development*, 128, 104841.
- Gangl, K., Hofmann, E., & Kirchler, E. (2020). Tax authorities and taxpayers: A cooperative framework. *Journal of Economic Psychology*, 79, 102206.
- Gujarati, D. N., & Porter, D. C. (2021). Basic econometrics (6th ed.). McGraw-Hill Education.
- Hoy, C., Scott, T., Oguso, A., Custers, A., Zalo, D., Doino, R., Karver, J., & Orgeira Pillai, N. (2024). Trade-offs in the design of simplified tax regimes: Evidence from Sub-Saharan Africa (World Bank Policy Research Working Paper No. 10909). World Bank.
- Institute of Economic Affairs (IEA). (2012). Informal Sector and Taxation in Kenya – Issues and Policy Options. <https://ieakenya.or.ke/download/informal-sector-and-taxation-in-kenya-issues-and-policy-options/>

- Kenya Institute for Public Policy Research and Analysis (KIPPRA). (2019). County Business Environment for Micro and Small Enterprises in Kenya. <https://kippra.or.ke/wp-content/uploads/2021/02/county-business-environment-for-micro-and-small-enterprises-in-kenya-sp27.pdf>
- Kenya National Bureau of Statistics (KNBS). (2016). Micro, small and medium Establishment (MSME) survey. <https://www.knbs.or.ke/wp-content/uploads/2023/09/2016-Micro-Small-and-Medium-Enterprises-Basic-Report.pdf>
- Kenya Revenue Authority (KRA). (2020). Turnover tax (TOT) reintroduction under the Finance Act, 2019. <https://kra.go.ke/news-center/public-notice/676-turnover-tax>
- Kenya Revenue Authority (KRA). (2024). Annual revenue performance FY 2023/2024. <https://www.kra.go.ke/images/publications/ANNUAL-REVENUE-PERFORMANCE-FY-2023-2024.-080724.pdf>
- Kirchler, E. (2007). The economic psychology of tax behaviour. Cambridge University Press.
- Kirchler, E., Hoelzl, E., & Wahl, I. (2021). Enforced versus voluntary tax compliance: The “slippery slope” framework revisited. *Journal of Economic Psychology*, 87, 102445.
- Luitel, H. S., & Sobel, R. S. (2007). The effectiveness of tax amnesties: Evidence from U.S. states. *National Tax Journal*, 60(3), 529–562. <https://doi.org/10.17310/ntj.2007.3.06>
- Mascagni, G., Dom, R., & Santoro, F. (2021). The VAT in developing countries: A review of evidence. *World Development*, 143, 105449.
- Mascagni, G., Santoro, F., & Mukama, D. (2022). Firm characteristics, enforcement, and tax compliance in developing economies. *World Development*, 154, 105889.
- Mas-Montserrat, M., Colin, C., Ribault, E., & Brys, B. (2023). The design of presumptive tax regimes. *OECD Taxation Working Papers*.
- OECD. (2014). Understanding tax morale for tax compliance. OECD Publishing. <https://doi.org/10.1787/9789264221019-en>
- OECD. (2021). Tax administration 2021: Comparative information on OECD and other advanced and emerging economies. OECD Publishing.
- OECD. (2022). Tax administration 2022: Digitalisation and compliance. OECD Publishing.
- Ogunbesan, S. S. (2023). Stakeholders’ engagement as a strategy for optimizing voluntary tax compliance: A case study of the Nigerian tax administration [Doctoral dissertation].
- Okunogbe, O., & Pouliquen, V. (2022). Technology, taxation, and compliance: Evidence from developing countries. *World Bank Economic Review*, 36(3), 645–671.
- Oranga, O. J., & Ondabu, I. T. (2018). Effect of financial inclusion on financial performance of banks listed at the Nairobi securities exchange in Kenya. *International Journal of Scientific and Research Publications*, 8(5), 624-649.
- Orlikowski, W. J. (1992). The duality of technology: Rethinking the concept of technology in organizations. *Organization Science*, 3(3), 398–427. <https://doi.org/10.1287/orsc.3.3.398>
- Slemrod, J. (2019). Tax compliance and enforcement. *Journal of Economic Literature*, 57(4), 904–954. <https://doi.org/10.1257/jel.20181437>

- Vonyó, T. (2018). The economic consequences of the war: West Germany's growth miracle after 1945. Cambridge University Press.
- Wei, F., & Wen, J.-F. (2023). Designing a presumptive income tax based on turnover in countries with large informal sectors (IMF Working Paper No. 23/267). International Monetary Fund.