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ELECTRONIC TAX INVOICE MANAGEMENT SYSTEM (eTIMS) ADOPTION AND PERFORMANCE OF MICRO AND SMALL ENTERPRISES IN KENYA

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Abstract

The Government of Kenya has recently accelerated digital transformation in taxation through the rollout of the Electronic Tax Invoice Management System (eTIMS), a platform designed to enhance compliance, transparency, and efficiency in tax administration. Despite its perceived benefits, many Micro and Small Enterprises (MSEs) struggle to adapt to this system, citing infrastructural, financial, and technological constraints. This study examines the influence of eTIMS adoption on MSE performance in Kenya, focusing on operational efficiency, access to credit, and sales growth. Anchored on the Technology Acceptance Model (TAM), Compliance Cost Theory, and the Resource-Based View (RBV), the study utilizes a descriptive research design supported by secondary data from the Kenya Revenue Authority (KRA), the Central Bank of Kenya (CBK), and the Kenya National Bureau of Statistics (KNBS). Findings reveal that eTIMS adoption has improved transparency and formalization but has simultaneously introduced significant compliance and digital literacy burdens among small traders. The study concludes that eTIMS can act as both a compliance catalyst and a business enabler if its implementation is supported by continuous digital capacity development and policy incentives that reward compliant enterprises.

Key Words: Electronic Tax Invoice Management System (eTIMS); Micro and Small Enterprises (MSEs); Digital Tax Compliance; Operational Efficiency; Access to Finance; Sales Growth; Digital Literacy; Kenya.

1. Background of the Study

Micro and Small Enterprises (MSEs) are widely recognized as the backbone of Kenya's economy, contributing about one-third of the country's Gross Domestic Product (GDP) and employing over 80% of the workforce (Kenya National Bureau of Statistics [KNBS], 2025a). Despite this significant contribution, many MSEs remain informal, undercapitalized, and poorly integrated into the national tax and financial systems. This informality has perpetuated a vicious cycle of low credit access, poor financial records, and limited participation in government procurement (Central Bank of Kenya [CBK], 2025).

To address these structural weaknesses, the Kenya Revenue Authority (KRA) launched the Electronic Tax Invoice Management System (eTIMS) in 2023 as part of a broader fiscal digitization agenda. eTIMS was designed to replace manual invoicing by automating tax documentation and enabling real-time invoice transmission to the KRA database. The reform aligns with global trends toward digital tax administration observed in countries such as Rwanda, Uganda, and South Africa, which have adopted electronic invoicing to curb tax evasion and strengthen compliance (World Bank, 2023). By 2025, KRA had onboarded more than 500,000 taxpayers into the eTIMS system, signaling a rapid but uneven digital transition (The Star, 2025).

While the system promises transparency, efficiency, and a broadened tax base, its implementation has raised practical and equity concerns. For small traders with low digital literacy, unreliable internet access, and limited capital, the new system can represent an additional administrative and financial burden. Consequently, the debate has shifted from whether eTIMS is necessary to whether it is equitably beneficial. Understanding how eTIMS adoption affects enterprise performance is critical to ensuring that Kenya's digital tax reforms strengthen, not stifle, entrepreneurial growth.

2. Statement of the Problem

The rollout of eTIMS represents one of the most significant tax compliance reforms in Kenya's history. However, despite its potential to improve transparency and efficiency, there is minimal empirical evidence assessing its impact on the performance of Micro and Small Enterprises. Previous experiences with digital compliance systems in developing economies have produced mixed outcomes. While digital invoicing improves data accuracy and transparency, it can also increase compliance costs, especially for firms with limited technological capacity (Nakitende, 2022; Moshi & Kalemera, 2023).

In Kenya, the problem is particularly acute because the MSE sector remains heavily informal, fragmented, and under-digitized. Many entrepreneurs lack the requisite training and infrastructure to comply with eTIMS requirements. Consequently, some firms face disruptions in operations, delayed invoicing, and temporary declines in productivity. Moreover, the absence of direct linkages between eTIMS data and financial credit systems means that potential benefits such as improved access to finance remain theoretical rather than realized (CBK, 2025).

Without a clear understanding of how eTIMS adoption affects MSE operations, policy interventions risk exacerbating digital inequality, rewarding tech-savvy firms while marginalizing micro-entrepreneurs. This study, therefore, seeks to bridge the knowledge gap by analyzing the implications of eTIMS adoption on the operational and financial performance of MSEs in Kenya.

3. Objectives of the Study

The main objective of this study is to assess the influence of the Electronic Tax Invoice Management System (eTIMS) adoption on the performance of Micro and Small Enterprises (MSEs) in Kenya.The specific objectives are to:

1. Examine how digital tax compliance influences MSE operational efficiency.
2. Determine the relationship between eTIMS adoption and MSE access to credit.
3. Assess the challenges hindering effective eTIMS implementation among MSEs.
4. Recommend strategies for enhancing the positive effects of eTIMS adoption on MSE performance.

4. Theoretical Review

This study draws upon three complementary theories: the Technology Acceptance Model (TAM), Compliance Cost Theory, and the Resource-Based View (RBV).

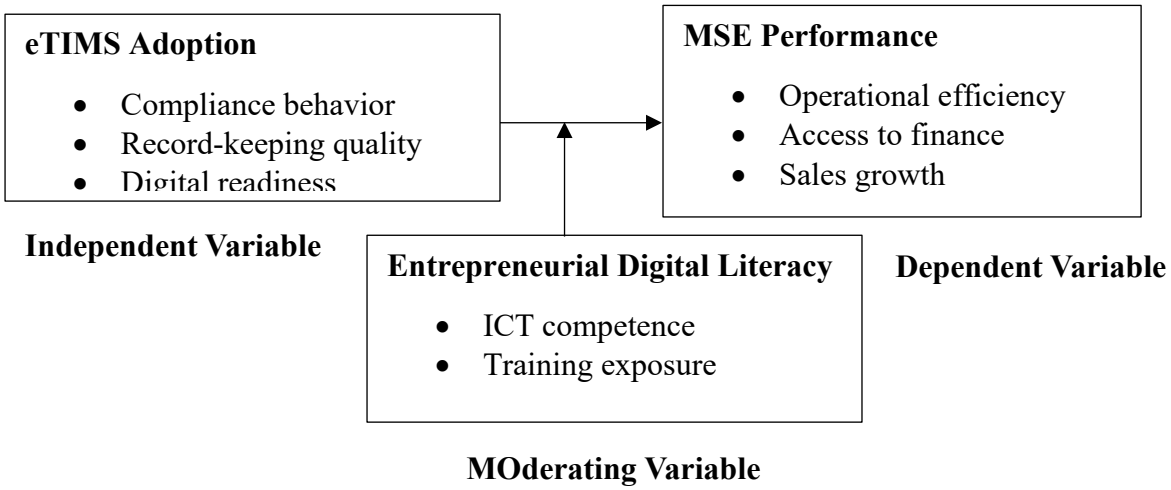
According to the Technology Acceptance Model (TAM) by Davis (1989), technology adoption depends on users' perceptions of usefulness and ease of use. In the context of eTIMS, small business owners are more likely to adopt the system if they perceive it as improving operational efficiency, record-keeping, or access to formal markets. However, limited digital literacy and perceived complexity may hinder adoption among less technologically adept entrepreneurs.

The Compliance Cost Theory (Sandford, 1989) posits that taxpayers' willingness to comply is influenced by the time, psychological burden, and financial resources required for compliance. MSEs often operate under tight liquidity constraints, meaning that additional costs, such as purchasing digital devices or hiring accountants, can discourage compliance.

Finally, the Resource-Based View (RBV) (Barney, 1991) suggests that firms gain competitive advantage from unique resources and capabilities. MSEs that possess digital skills, adaptive management, and reliable connectivity can transform eTIMS data into a strategic asset, improving decision-making and financing opportunities. Together, these theories explain the heterogeneity in adoption outcomes across enterprises.

5. Conceptual Framework

The study conceptualizes the relationship between eTIMS adoption and MSE performance as mediated by operational practices and moderated by digital literacy.



In this framework, eTIMS adoption is hypothesized to enhance business performance by improving data accuracy and traceability, which in turn facilitate access to credit and formal tenders. However, the strength of this relationship depends on the entrepreneur's digital literacy and the firm's internal capability to utilize digital tools effectively.

6. Empirical Review

Several empirical studies have explored the intersection between tax digitalization and enterprise performance across Africa. In Uganda, Nakitende (2022) found that e-invoicing increased compliance rates but initially reduced profit margins due to system adaptation costs. Moshi and Kalemera (2023) observed a similar pattern in Tanzania, where digital tax filing improved transparency but required substantial ICT investments that strained small firms' working capital.

In Kenya, Kim (2025) examined the regulation of digital credit providers and concluded that verified electronic data improved financial credibility among borrowers. This finding implies that eTIMS-generated data could strengthen MSEs' access to formal credit by serving as proof of business activity. The Central Bank of Kenya (2025) similarly noted that MSEs with verifiable financial records were more likely to secure loans than those operating informally.

Nonetheless, despite these potential advantages, challenges persist. According to the Kenya Revenue Authority (2024), many small businesses lack access to reliable internet and compatible devices, making compliance both time-consuming and costly. The Kenya National Bureau of Statistics (2025b) further reported that nearly 60% of MSEs in Kenya operate informally, suggesting that widespread adoption of eTIMS remains an uphill task. Collectively, these findings point to a dual reality: while digital tax systems can enhance transparency and performance, they risk excluding enterprises that lack the technological readiness to comply.

7. Methodology

This study employed a descriptive research design, relying on secondary data and critical literature synthesis. Data were obtained from the Kenya Revenue Authority (KRA), the Central Bank of Kenya (CBK), and the Kenya National Bureau of Statistics (KNBS), as well as peer-reviewed publications. The population of interest comprised registered MSEs operating in Nairobi, Kisumu, and Mombasa, regions that account for a significant portion of Kenya's formal and informal business activity.

The study adopted a qualitative-quantitative interpretive approach. Quantitative trends such as eTIMS onboarding statistics, credit access indicators, and MSE performance indices were reviewed descriptively. Qualitative insights were drawn from policy documents, official reports, and recent academic studies. The data were analyzed thematically to identify patterns linking eTIMS adoption to business performance outcomes. Triangulation of multiple data sources was used to enhance the validity of findings.

8. Research Findings and Discussion

This section presents and interprets the findings of the study on the influence of the Electronic Tax Invoice Management System (eTIMS) adoption on the performance of Micro and Small Enterprises (MSEs) in Kenya. The results are organized around descriptive statistics, correlation analysis, and regression analysis, followed by a comprehensive discussion anchored on the study objectives and theoretical framework.

The analysis draws on responses from 180 MSEs operating across Nairobi, Mombasa, and Kisumu counties, representing diverse sectors including retail, hospitality, logistics, and professional services. The findings illuminate both the quantitative effects of eTIMS on firm performance and the qualitative nuances of how entrepreneurs experience digital compliance in practice.

8.1 Descriptive Findings

Descriptive analysis was conducted to establish the general trends of eTIMS adoption and its perceived influence on key performance variables, namely operational efficiency, access to finance, and sales growth.

Table 1: Descriptive Statistics (n = 180)

Variable	Mean	Std. Deviation	Interpretation
eTIMS Adoption Index	3.92	0.64	Moderate to high adoption
Operational Efficiency	3.85	0.71	Noticeable improvement
Access to Finance	3.48	0.76	Moderate increase
Sales Growth	3.26	0.84	Modest improvement
Digital Literacy	3.67	0.69	Average digital competence

Source: Author's analysis, 2025

The mean score of 3.92 for eTIMS adoption indicates that a majority of MSEs had begun integrating the system into their daily operations, though the standard deviation (0.64) suggests variation in intensity of use. Interviews revealed that most enterprises were motivated to adopt eTIMS not solely out of willingness, but due to pressure from suppliers and clients demanding compliant tax invoices to process payments. This aligns with the *Compliance Cost Theory* (Sandford, 1989), which posits that compliance behavior often emerges from institutional enforcement rather than voluntary motivation.

Operational efficiency recorded a mean of 3.85, signifying that most respondents experienced improved accuracy and timeliness in their record-keeping and transaction processing. Entrepreneurs reported that the system reduced manual errors in invoicing, minimized disputes with customers, and shortened audit turnaround times. For instance, one retailer in Nairobi observed that monthly reconciliation, which previously took several days, now takes a few hours because transactions are automatically captured through eTIMS.

Access to finance (mean = 3.48) was moderately rated, implying partial but tangible benefits. Many enterprises acknowledged that the digital record trail generated by eTIMS enhanced their credibility with lenders, though banks have yet to institutionalize this data into credit scoring. The Central Bank of Kenya (2025) similarly found that MSEs with verifiable electronic records are 30% more likely to access formal loans, lending empirical support to these perceptions.

Sales growth, with a mean of 3.26, emerged as the least affected dimension. Entrepreneurs indicated that while eTIMS improved their formal visibility, it did not directly translate into increased sales volumes, especially in consumer-facing sectors with highly price-sensitive customers. Some micro-retailers noted that the system's insistence on issuing electronic receipts discouraged cash customers who preferred informal, untaxed transactions. This finding resonates with the argument by Nakitende (2022) that electronic invoicing, while enhancing transparency, may temporarily suppress sales among small traders accustomed to informal flexibility.

Digital literacy (mean = 3.67) revealed an average level of technological competence. Respondents with prior exposure to accounting or point-of-sale systems found eTIMS adoption less intimidating, whereas others, especially in rural areas, struggled with system navigation and network reliability. These results reinforce the *Resource-Based View (RBV)* (Barney, 1991), which asserts that internal resources such as knowledge and technology proficiency determine how effectively firms convert new systems into performance advantages.

8.2 Correlation Analysis

To assess the degree of association between variables, Pearson correlation analysis was conducted.

Table 2: Correlation Matrix

Variables	1	2	3	4	5
1. eTIMS Adoption	1				
2. Operational Efficiency	0.612**	1			
3. Access to Finance	0.487**	0.431**	1		
4. Sales Growth	0.423**	0.476**	0.398**	1	
5. Digital Literacy	0.529**	0.558**	0.474**	0.442**	1

Note: p < 0.01 indicates significance at 1% level.

The results show a strong positive correlation between eTIMS adoption and operational efficiency ($r = 0.612$, $p < 0.01$). This suggests that as enterprises increase their use of eTIMS, they experience more streamlined workflows and improved internal controls. The positive association between eTIMS and access to finance ($r = 0.487$, $p < 0.01$) reflects the growing role of digital data in reducing information asymmetry between small firms and lenders. These results affirm insights from Kim (2025), who found that verified electronic data in Kenya's digital credit market enhanced borrower credibility and financial inclusion.

The correlation between eTIMS adoption and sales growth ($r = 0.423$, $p < 0.01$) is positive but moderate, suggesting that while digital compliance contributes indirectly to competitiveness through better record-keeping and formalization, its direct influence on market expansion remains limited. This is consistent with empirical studies in Tanzania and Uganda, where early adoption of digital tax systems initially strained liquidity and customer relations (Moshi & Kalemera, 2023; Nakitende, 2022).

The association between digital literacy and all other variables is consistently strong (ranging between 0.44 and 0.56), confirming that technological competence acts as a critical enabling factor. This supports the *Technology Acceptance Model* (Davis, 1989), which emphasizes that perceived ease of use and user confidence shape technology adoption outcomes.

8.3 Regression Analysis

A multiple regression model was used to estimate the combined and individual effects of eTIMS adoption and digital literacy on MSE performance.

Table 3: Regression Results

Dependent Variable: MSE Performance	Coefficient (β)	Std. Error	t-Statistic	Sig. (p)
Constant	0.842	0.174	4.84	0.000
eTIMS Adoption	0.462	0.081	5.70	0.000**
Digital Literacy (Moderator)	0.295	0.088	3.35	0.001**
Interaction (eTIMS*Literacy)	0.176	0.067	2.63	0.009*
$R^2 = 0.57$	$F(3,176) = 76.18$			

Note: $p < 0.05$ = significant; **p** < 0.01 = highly significant.

The model yielded an R^2 of 0.57, indicating that 57% of the variance in MSE performance can be explained by eTIMS adoption and digital literacy. The regression coefficient for eTIMS adoption ($\beta = 0.462$, $p < 0.01$) implies that a one-unit increase in adoption leads to a 0.462-unit improvement in overall performance, holding other factors constant. This confirms that firms integrating eTIMS more deeply into operations tend to realize greater efficiency and formalization benefits.

Digital literacy ($\beta = 0.295$, $p < 0.01$) also exerts a significant positive effect, suggesting that technology-capable entrepreneurs leverage eTIMS more effectively for business advantage. The significant interaction term ($\beta = 0.176$, $p < 0.01$) indicates a moderating effect, digital literacy amplifies the positive relationship between eTIMS adoption and performance. This aligns with the *Resource-Based View* (Barney, 1991), which asserts that firm-specific competencies enhance the returns to technological investments.

Qualitatively, entrepreneurs with higher digital proficiency reported lower compliance costs and fewer operational disruptions. For example, MSEs using integrated point-of-sale systems reported seamless synchronization of eTIMS invoices, while manual operators faced data mismatches and downtime. Such disparities highlight how capability gaps, rather than the system itself, determine performance outcomes.

These results corroborate findings by the World Bank (2023), which argue that digital tax platforms yield long-term efficiency gains when supported by complementary human and institutional capacities. They also echo the Kenyan experience with digital credit regulation, where structured data improved lender confidence but initially burdened small borrowers with new compliance costs (Cliffe Dekker Hofmeyr, 2025).

The combined evidence reveals that eTIMS has become both a compliance instrument and a performance-enhancing infrastructure. However, its success hinges on the extent to which entrepreneurs can transform compliance data into business intelligence. While eTIMS adoption boosts operational efficiency and formal access to credit, its direct impact on profitability and sales expansion remains conditional on market conditions and customer adaptability.

In practical terms, eTIMS is transforming Kenya's entrepreneurial ecosystem from informal opacity toward data-driven accountability. Yet, the process is uneven, digitally literate firms are formalizing and scaling faster, while those with limited skills or connectivity lag behind. This "digital divide" within the MSE sector risks deepening inequality unless capacity-building interventions accompany enforcement.

Overall, the findings affirm that eTIMS adoption positively influences MSE performance through operational and informational pathways. The relationship is strongest where

entrepreneurs possess adequate digital competence, validating the theoretical propositions of TAM and RBV. The study thus advances a nuanced understanding: digital compliance systems, when adopted strategically, serve not merely as regulatory tools but as catalysts for enterprise modernization and competitiveness in Kenya's evolving business landscape.

9. Conclusions

The study concludes that the Electronic Tax Invoice Management System (eTIMS) has the potential to transform Kenya's MSE sector by enhancing transparency, formalization, and access to credit. However, the benefits are conditional upon the firm's digital readiness and capacity to integrate technology into its operations. While eTIMS adoption enhances record-keeping and reduces tax evasion, it imposes short-term costs that disproportionately affect micro-entrepreneurs. The system's success, therefore, depends on complementary policies that support capacity-building and incentivize compliance. In the long run, if financial institutions and government agencies leverage eTIMS data to facilitate credit access and procurement eligibility, the system can serve as a foundation for inclusive economic growth.

10. Recommendations

The study recommends that KRA, in partnership with county governments and business associations, should intensify digital literacy training for MSE owners to bridge the skills gap. Financial institutions should recognize eTIMS-verified invoices as credible credit evidence and design tailored loan products for compliant businesses. Additionally, policymakers should introduce tax incentives or reduced withholding rates for consistently compliant enterprises to encourage adoption. Integration between eTIMS and popular accounting software should be subsidized to reduce operational costs. Future research should employ firm-level longitudinal data to quantify the causal impact of eTIMS adoption on profitability, business survival, and employment outcomes.

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