Evaluating the Practical Effectiveness of Risk Management Frameworks among SMEs in Zambia's Construction Sector: A Case Study of Lusaka Building Contractors

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ABSTRACT

This study examines the effectiveness and practical implementation of Risk Management Frameworks (RMFs) among Small and Medium Enterprises (SMEs) in Zambia's construction industry, with a specific focus on firms operating in Lusaka. Adopting a mixed-methods approach, the research employed a sequential explanatory design, integrating quantitative data from 80 stratified SME respondents and qualitative insights from purposively selected key informants. The study assessed the adoption, perceived effectiveness, and challenges related to four widely recognized RMFs: COSO, ISO 31000, RIMS, and CAS. Findings revealed that COSO was the most preferred and effective framework due to its structured and adaptable nature, whereas ISO 31000 and CAS were perceived as overly complex and less suited for SMEs with limited resources. The study also identified major barriers to RMF adoption, including regulatory complexity, lack of technical expertise, project variability, and resistance to change, while financial constraints, though present, were found to be comparatively less significant. Strategies such as training, simplification of frameworks, digital tools, and policy support were recommended to enhance RMF adoption. The study concludes that improving awareness, building technical capacity, and providing regulatory and financial support are critical for fostering a risk-conscious culture and enhancing the performance of SMEs in Zambia's construction sector. These findings contribute to the growing body of literature on SME risk management in developing economies and offer practical implications for policymakers, industry regulators, and SME support organizations.

Keywords: Risk Management Frameworks, SMEs, Construction Industry, COSO, ISO 31000, RIMS, CAS, Zambia, Regulatory Barriers, Risk Perception, Mixed Methods

INTRODUCTION

Risk management is essential for organisational success, particularly within the construction sector where uncertainty is prevalent. Effective frameworks such as COSO, ISO 31000, RIMS, and CAS guide organisations in identifying, analysing, and mitigating risks to improve resilience and performance (Hillson, 2017; Frigo & Anderson, 2011; ISO, 2018). However, small and medium enterprises (SMEs) in developing countries like Zambia often struggle to adopt these frameworks due to resource limitations, lack of expertise, and implementation complexity (Rahman et al., 2019; Zou et al., 2010; KPMG, 2020).

SMEs in Zambia's construction industry significantly contribute to economic development but operate under risky conditions involving unstable material costs, labour issues, and regulatory constraints (Mumba et al., 2020; Chileshe & Kikwasi, 2014). Poor risk management exposes these firms to project failures and financial instability. While studies affirm a strong link between structured risk management and project success (Osei-Kyei & Chan, 2017; Aven, 2016), there is limited empirical evidence on how Zambian SMEs adopt and perceive risk management frameworks. This study seeks to bridge that gap.

Background to the Study

As globalisation and competition intensify, risk management has become critical across sectors, especially in high-risk areas like insurance and construction (Gwangwaya, Manuere & Kudakweshe, 2014). SMEs must

integrate risk management into their systems to reduce uncertainty and improve decision-making (Brustbauer, 2016; Smit & Watkins, 2012). Frameworks like those proposed by Bromiley and Rau (2014), and Bromiley et al. (2015), provide essential tools for managing risk, particularly in sectors like construction where project lifecycle complexities often hinder success (Hutchins, 2018).

Zambia's construction sector, contributing significantly to GDP and job creation, remains robust despite global economic fluctuations, supported by infrastructure projects and real estate growth (Ministry of Infrastructure and Urban Development, 2022). SMEs in this sector engage in high-risk activities such as building, renovations, and maintenance (Alagha, 2018), making the adoption of Risk Management Frameworks (RMFs) vital. However, the actual effectiveness of these frameworks among Zambian SMEs remains underexplored and poorly documented, prompting the need for this study.

Problem Statement

SMEs in Zambia's construction sector are vital to infrastructure development but continue to face high rates of project failure, financial instability, and contractual disputes (Chileshe et al., 2022). Nearly 40% of public construction projects involving SMEs are incomplete or abandoned, causing significant economic setbacks (Zambia Daily Mail, 2023). Although internationally recognised Risk Management Frameworks (RMFs) such as COSO, ISO 31000, RIMS, and CAS are available, their practical effectiveness in Zambia remains uncertain (Kagiri & Odhiambo, 2021).

Challenges such as inadequate financial and technical resources and the absence of structured risk assessment mechanisms contribute to the poor survival rate of SMEs. The Zambia Development Agency (2023) reports that more than half of construction SMEs fail within their first five years, largely due to ineffective risk management practices. Despite the conceptual strength of RMFs, their complexity, limited contextual relevance, and weak policy enforcement reduce their usability among SMEs (Mwape & Tembo, 2022).

Moreover, there is a lack of empirical research examining how SMEs in Zambia implement and perceive these frameworks in practice (Mumba et al., 2024). While some firms have embraced formal risk management, the evidence concerning the effectiveness, adaptability, and actual outcomes of these frameworks is limited. This study aims to address this knowledge gap by evaluating RMF effectiveness among Lusaka's construction SMEs, identifying implementation challenges, and suggesting tailored improvements.

Main objective

To evaluate the effectiveness of the Risk Management Framework among SMEs in the Construction Industry in Zambia

Specific objectives

1. Identify the specific Risk Management Frameworks utilized by SMEs in the Construction Industry in Zambia.

2. Assess the effectiveness of the Risk Management Frameworks employed by SMEs in the Construction Industry in Zambia.

3. Analyze the challenges associated with implementing Risk Management Frameworks among SMEs in the Construction Industry in Zambia.

4. Propose actionable measures to enhance the effective utilization of Risk Management Frameworks among SMEs in the Construction Industry in Zambia

Research questions

1. What is the Risk Management Framework used among SMEs in the Construction Industry in Zambia?

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2. How effective is the Risk Management Framework among SMEs in the Construction Industry in Zambia?

3. What are the challenges of using the Risk Management Framework among SMEs in the Construction Industry in Zambia?

4. What measures can be put in place to ensure the effective use of the Risk Management Framework among SMEs in the Construction Industry in Zambia?

Empirical Review

Globally and regionally, the adoption of Risk Management Frameworks (RMFs) among SMEs in construction is inconsistent. Research from Ghana and Kenya reveals that most SMEs lack formalized RMFs, relying instead on intuition or informal practices (Osei-Kyei & Chan, 2020; Mwangi et al., 2022). While COSO, ISO 31000, RIMS, and CAS are globally recognised, COSO is most widely used for its focus on internal controls, and ISO 31000 is praised for its systematic risk assessment approach (Rahman & Tan, 2021; Patel & Kumar, 2023; Khosravi et al., 2021).

In Africa, uptake remains low. South African SMEs lean toward RIMS for its flexibility, while Nigerian SMEs adopt ISO 31000 informally (Amoah & Pretorius, 2020; Adewuyi et al., 2023). In Zambia, only 20% of Lusaka-based SMEs have formal risk management policies, mostly based on COSO and ISO 31000, though implementation is hampered by poor training and awareness (Chileshe et al., 2022; Tembo & Mwale, 2024).

Government support plays a vital role in promoting RMF adoption. Tanzanian SMEs with government backing were twice as likely to adopt structured risk frameworks (Nyirenda & Kaira, 2021). Zambia's 2023 ZDA report, however, notes that government initiatives have not effectively reached SMEs. Emerging solutions include digital tools like AI-driven risk platforms, which have shown to increase RMF efficiency and adoption by up to 45% in other contexts (Jensen & Luthuli, 2022; Kalunga & Banda, 2023).

The effectiveness of RMFs is evident in reduced project failure rates, financial stability, and improved operational efficiency. For instance, COSO adoption in Bangladesh correlated with a 30% lower project failure rate (Ahmed & Rahman, 2022), while ISO 31000 implementation in South Africa led to improved project outcomes and budget adherence (Mthembu & Sithole, 2023).

In Kenya, SMEs that used COSO and ISO 31000 experienced 40% fewer financial losses and showed better business continuity (Ngugi et al., 2021). RIMS was found more suitable in volatile markets, while CAS focused effectively on financial risks (Wambua & Ochieng, 2024). In Zambia, COSO led to a 25% improvement in risk assessments, and ISO 31000 improved regulatory compliance by 30%, though over half of SMEs lacked risk monitoring systems (Mumba & Tembo, 2023).

Despite these benefits, only 15% of Lusaka-based SMEs actively use RMFs due to training gaps, limited finances, and lack of regulatory enforcement (Chileshe et al., 2022).

SMEs face several barriers to RMF implementation. Financial constraints are most pressing, with many SMEs unable to afford training, tools, or consultants. Over 60% of Zambian SMEs struggle to finance risk management initiatives, prioritising immediate business needs (Nyirenda et al., 2023). Only 15% allocate budgets for risk management (Mwape & Tembo, 2022).

Access to financing is another issue; banks perceive construction SMEs as high-risk borrowers and do not offer dedicated RMF loans (Chileshe et al., 2022). Limited training is another hurdle — only 20% of SME contractors have formal risk assessment education (Chanda & Phiri, 2022). Many lack exposure to Enterprise Risk Management (ERM), and when training exists, it is often undervalued.

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SMEs tend to prioritise operational activities over risk planning, delaying RMF adoption and exposing them to project and financial setbacks (Mumba et al., 2024). Evidence shows that formal risk training increases RMF adoption by 45% (Amoah et al., 2023), but this remains underutilised.

Improving RMF adoption among SMEs requires financial, institutional, and educational interventions. Financially, government-backed incentives—like tax breaks, subsidised training, and access to low-interest RMF loans—are vital. Support from institutions like the ZDA and insurance firms can create funding ecosystems to back RMF use (Nyirenda & Chileshe, 2024). In South Africa, such support reduced financial risk-related incidents by 50% (Mthembu & Sithole, 2023).

Framework complexity also poses a barrier. COSO, ISO 31000, and RIMS are tailored for large firms, making SME-specific modifications necessary. Customised, user-friendly RMF templates designed for Zambia's construction context can enhance compliance and usability (Kagiri et al., 2023). Kenyan SMEs with such tailored frameworks had 30% higher compliance (Ngugi et al., 2021).

Limited awareness remains a critical gap. Only 20% of SME contractors in Zambia have been formally trained in risk methodologies (Chanda & Phiri, 2022). Without knowledge, RMFs remain abstract concepts. Increasing access to risk education—through workshops and certification programs—can shift SME mindsets, embedding RMF practices as standard operating procedures.

Theory of Constraints (TOC) – Summary

The Theory of Constraints (TOC), introduced by Eliyahu Goldratt (1984), posits that any system has at least one critical constraint that limits its performance. Enhancing system efficiency requires identifying and eliminating or mitigating this constraint.

In the context of risk management among Zambian construction SMEs, TOC helps explain the structural and operational barriers preventing widespread adoption of Risk Management Frameworks (RMFs). SMEs operate in uncertain environments where various constraints—financial, technical, regulatory, and behavioural—hinder the implementation of RMFs, leaving them vulnerable to project delays, cost overruns, and financial instability.

- Financial constraints are the most critical. Many SMEs cannot afford the capital required for training, software, audits, or consultancy. Over 60% of SMEs lack structured RMFs due to insufficient funding, making financial scarcity the "weakest link" in the system.

- Limited expertise and awareness form another constraint. Most SME managers lack formal training in risk management and often rely on intuition. The knowledge gap, concentrated within large firms, creates a bottleneck in SME adoption of systematic risk practices.

- The complexity of RMFs such as ISO 31000 and COSO further restricts uptake. These frameworks are often too procedural and suited for large firms. For SMEs, the documentation-heavy nature of these RMFs becomes a process constraint, discouraging day-to-day integration.

- Weak regulatory enforcement acts as an external constraint. While policies exist, enforcement is inconsistent, and no national SME-specific RMF standard exists. This leads to voluntary and fragmented adoption among SMEs.

- Cultural resistance to change is a behavioural constraint. Many SMEs view formal RMFs as unnecessary bureaucracy and favour traditional, experience-based decision-making. Even when resources and training are available, reluctance persists.

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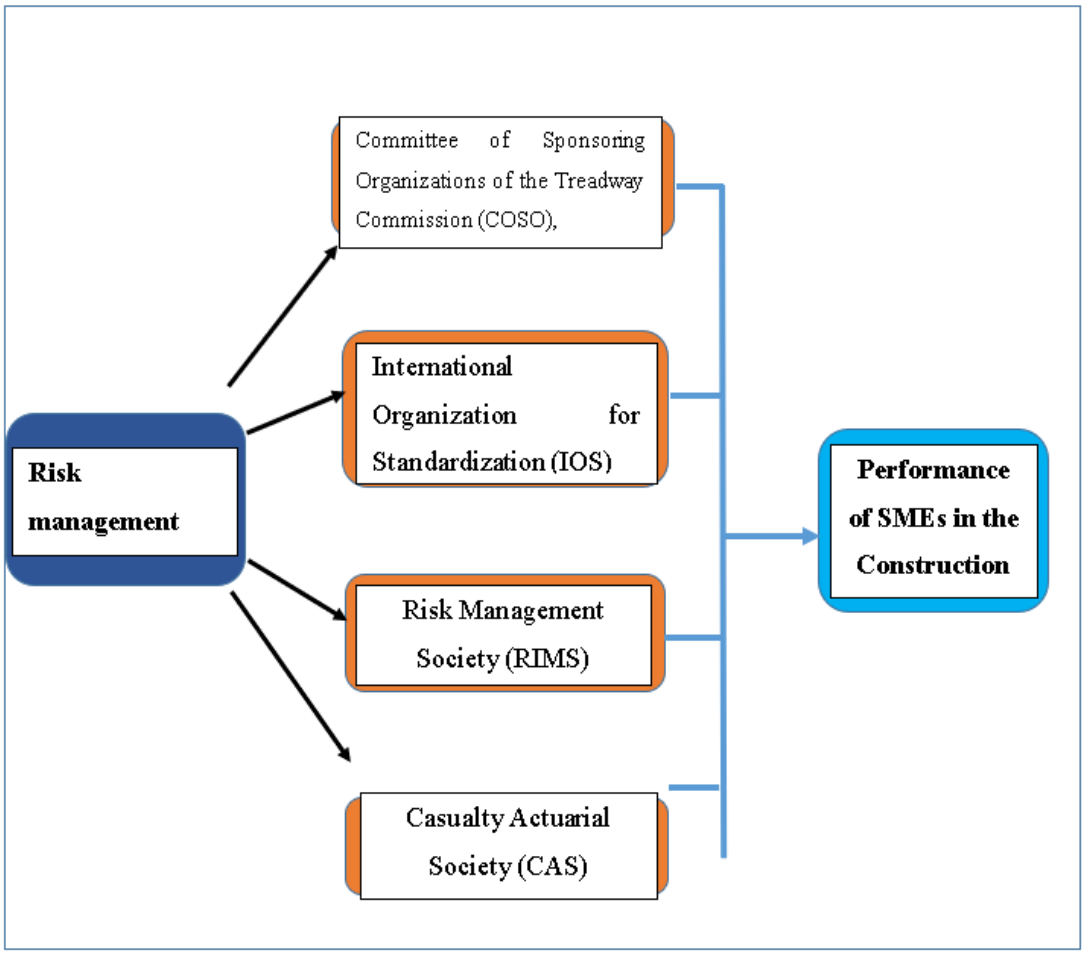
Conceptual framework



Source (Maneku, 2025)

METHODOLOGY

This study employed a mixed-methods research design, specifically a sequential explanatory approach, to assess the effectiveness of Risk Management Frameworks (RMFs) among SMEs in Zambia's construction industry. The research integrated both quantitative and qualitative methods, where quantitative data were first collected and analysed to identify patterns, followed by qualitative interviews to provide deeper insight and contextual interpretation of the findings. A case study strategy was adopted, focusing on SMEs operating in Lusaka, as this setting provided a real-life context to investigate RMF adoption and implementation. Data sources included both primary data—gathered through structured questionnaires and interviews with SME owners, project managers, financial officers, safety officers, and consultants—and secondary data, which involved literature from journals, government reports, and industry publications. The population consisted of 100 construction SMEs in Lusaka, selected based on their relevance and feasibility for the study. Stratified random sampling was used for the quantitative phase to ensure representation across different SME categories, such as firm size and level of RMF adoption, while purposive sampling was employed for the qualitative phase to select knowledgeable informants directly involved in risk management. The sample size was determined using Slovin's formula with a 5% margin of error, resulting in 80 respondents, which ensured adequate statistical power while remaining manageable for data collection. Quantitative data were analysed using SPSS version 27, employing descriptive statistics (means, frequencies, standard deviations) and inferential techniques such as regression and correlation analysis to test relationships between variables. Qualitative data were analysed using thematic analysis, enabling the identification and interpretation of recurring themes and insights from participant narratives. This dual approach ensured the study achieved both statistical generalisability and depth of understanding, allowing for a comprehensive exploration of how SMEs in Lusaka perceive and implement risk management frameworks in the construction sector.

Data analysis

Table 1: Risk Management Frameworks Usage

Framework	Adoption Rate (%)	Mean	Standard Deviation (SD)	Remarks
COSO	97.5%	1.59	0.54	Most used, high consensus
ISO	98.8%	1.71	0.46	Widely used, slightly lower consensus
RIMS	100%	1.71	0.46	Fully adopted, moderate agreement
CAS	42.5%	2.45	0.71	Least adopted, low consensus

COSO, ISO, and RIMS show strong adoption across SMEs, with COSO standing out due to its structured and user-friendly nature. CAS is the least adopted, likely due to complexity and low relevance. COSO and RIMS showed high consensus, while CAS had the highest uncertainty (SD = 0.71), suggesting mixed or unclear perceptions.

Table 2: Perceived Effectiveness of RMFs

Framework	Rated Most Effective (%)	Mean	Standard Deviation (SD)	Interpretation
COSO	53.8%	1.49	0.55	Highest perceived effectiveness
RIMS	43.8%	1.6	~0.58	Moderately effective
ISO	21.3%	1.8	~0.43	Perceived as effective but rigid
CAS	16.3%	2.36	0.75	Least effective, mixed opinions

COSO is perceived as the most effective RMF among SMEs due to its balance of internal control and applicability. RIMS and ISO are moderately trusted, while CAS ranks lowest in perceived effectiveness—likely due to its specialised, actuarial focus, which may not align well with construction sector needs.

Table 3: Challenges in Implementing Risk Management Frameworks

Challenge	Mean	Standard Deviation (SD)	Severity Level
Complex regulatory environment	1.44	0.49	Most significant
Project complexity	1.57	0.55	Most significant
Lack of expertise	2.10	0.72	Moderate challenge
Risk perception	1.66	0.47	Moderate challenge
Limited resources (financial)	2.63	0.69	Least concern

The most critical barriers to RMF implementation are regulatory and project-related complexities. Contrary to common assumptions, financial constraints were not the primary challenge, suggesting that knowledge, compliance, and procedural issues may pose greater obstacles for SMEs.

Table 4: Key Strategies for Effective Risk Management

Strategy	Mean	Standard Deviation (SD)	Agreement Level
Comprehensive risk assessment	1.53	0.52	Most agreed upon
Developing risk management plans	1.56	0.52	Most agreed upon
Training & education	1.65	0.50	Widely supported
Technology adoption	1.66	0.50	Widely supported
Fostering a risk-conscious culture	1.58	0.49	Widely supported

SMEs place strong emphasis on formal strategies like risk assessment and planning. Supporting actions such as training, tech integration, and promoting risk-aware culture are also widely endorsed, indicating a clear understanding of what is needed for effective risk management.

Model Summary (Table 6)

- The -2 Log Likelihood value of 39.652 suggests a good model fit.
- Cox & Snell R^2 = 0.536 and Nagelkerke R^2 = 0.688 indicate that the model explains between 53.6% and 68.8% of the variance in the dependent variable. This shows a strong explanatory power of the model regarding the effectiveness of Risk Management Frameworks (RMFs).

Regression Results

RMF	B (Coeff.)	Sig. (p-value)	Exp(B) (Odds Ratio)	Interpretation
COSO	-0.187	0.037	0.830	↑ Effectiveness → ↓ odds by 17%
ISO	+2.595	0.027	13.400	↑ Effectiveness → ↑ odds 13x higher
RIMS	-0.703	0.039	0.495	↑ Effectiveness → ↓ odds by 50%
CAS	-0.327	0.008	0.721	↑ Effectiveness → ↓ odds by 28%
Constant	+5.372	0.028	0.005	Baseline odds are very low without predictors

All frameworks were statistically significant ($p < 0.05$), indicating that their perceived effectiveness significantly influences the outcome.

ISO has the strongest positive effect, with a very high odds ratio (Exp(B) = 13.4), meaning SMEs perceiving ISO as effective are far more likely to achieve successful risk management outcomes.

COSO, RIMS, and CAS show negative coefficients, suggesting that increasing perception of their effectiveness decreases the odds of the dependent outcome—possibly reflecting complexity or misalignment with SME needs.

The strong constant value (Exp(B) = 0.005) implies that without the effectiveness of any RMF, the likelihood of achieving effective risk management is extremely low.

Correlation Summary

Framework	Pearson Correlation	Sig. (2-tailed)	Interpretation
COSO	-0.080	0.048	Weak negative correlation, statistically significant
ISO	+0.132	0.024	Weak positive correlation, statistically significant
RIMS	-0.049	0.667	Negligible negative correlation, not significant
CAS	-0.011	0.022	Very weak negative correlation, statistically significant

ISO showed a weak but statistically significant positive correlation with effectiveness ($r = 0.132$, $p = 0.024$), suggesting that SMEs perceiving ISO as effective are slightly more likely to benefit from its use.

COSO and CAS both had weak negative correlations with effectiveness ($r = -0.080$ and -0.011 respectively), yet they are statistically significant ($p < 0.05$), indicating a minimal inverse relationship—perhaps due to implementation difficulties or contextual mismatch.

RIMS had a negligible and statistically insignificant relationship ($r = -0.049$, $p = 0.667$), implying no meaningful association with perceived effectiveness among SMEs.

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Thematic Analysis Summary

Theme	Summary & Supporting Quotes	Brief Analysis
1. Challenges in Implementing RMFs	*"We often want to implement these frameworks, but the costs involved—especially for training and tools—are beyond what SMEs like us can afford." "The bureaucracy is stifling... we end up stuck in paperwork..."*	SMEs face financial and regulatory barriers, hindering RMF adoption. Complex bureaucracy and limited resources remain major constraints.
2. Effectiveness of RMFs	*"COSO has been a game-changer for us; its internal controls have helped us streamline processes and mitigate risks." "CAS is too complex and doesn't align well with the realities of SMEs in Zambia."*	Perceptions of RMF effectiveness are mixed. COSO is seen as practical and beneficial, while CAS is viewed as overly technical and misaligned.
3. The Role of Training and Expertise	*"Most of our team lacks the technical know-how... We need more workshops and practical training sessions..."*	There is a clear skills gap in RMF implementation. Capacity-building through practical training is a top priority for SMEs.
4. Strategies for Improving Risk Management	*"If they were simplified, we'd be more willing and able to adopt them." "Investing in affordable risk management software could transform how we identify and monitor risks..."*	SMEs seek simplified frameworks and accessible technology to boost RMF adoption and real-time risk tracking.
5. Government and Policy Support	*"The government should subsidize training costs or provide grants..." "Stronger enforcement... would level the playing field..."*	Policy-level support is lacking. Participants urge for subsidies, grants, and better enforcement to create an enabling environment for SMEs.
6. Perceived Impact on SME Performance	*"Since we started using ISO principles, we've seen fewer delays and cost overruns..." "Without proper implementation and support, they don't deliver the expected results."*	RMFs can enhance performance, but success is dependent on implementation quality and contextual support.
7. Cultural Resistance to Change	*"We're used to firefighting... rather than proactively managing risks."*	A reactive mindset among SMEs slows RMF adoption. Cultural shifts toward proactive planning are needed for sustained impact.

DISCUSSION OF FINDINGS

Objective 1: To Identify the Specific Risk Management Frameworks Utilized by SMEs in Zambia's Construction Industry

The study revealed that COSO is the most widely adopted RMF among Lusaka-based construction SMEs, with 53.8% rating it as most effective. This was followed by RIMS and ISO 31000, while **CAS** had minimal adoption due to its technical complexity and limited relevance to operational risks.

These findings are consistent with *Beasley et al. (2020)* and *Chileshe & Kikwasi (2022)*, who identified COSO as a flexible and enterprise-wide RMF suitable for SMEs. The study confirms that SMEs prefer frameworks that balance control, usability, and integration with internal processes.

Conversely, *Jallow et al. (2021)* noted ISO 31000's strength in large firms, but this study adds nuance by highlighting its limited practicality for SMEs due to compliance burdens. The low uptake of CAS reflects findings by *Adewuyi et al. (2022)*, who argue that its actuarial focus misaligns with construction sector needs.

Objective 2: To Assess the Perceived Effectiveness of RMFs Among SMEs

Perceptions of RMF effectiveness varied. COSO had the highest mean effectiveness score (1.49) with low standard deviation, indicating broad consensus. RIMS and ISO were positively rated but had slightly higher variability, while CAS was the least understood and least favoured (mean score 2.36).

The perception that COSO is more effective corroborates *Wanjiru and Ochieng (2020)*, who identified COSO's structured risk monitoring as practical for SMEs.

However, ISO 31000, despite global popularity, was perceived as too "rigid and resource-intensive"—a limitation also highlighted by *Khosravi et al. (2021)*. The mixed reactions to RIMS reflect *Amoah & Pretorius (2020)*, who suggested that while RIMS supports risk maturity, its adoption may depend on organizational readiness.

These findings suggest that SMEs in Lusaka value simplicity and flexibility in RMFs more than global standardization.

Objective 3: To Examine the Challenges Faced by SMEs in Implementing Risk Management Frameworks

The top challenges identified were:

Complex regulatory environment (100% agreement). Project complexity (97.5%). Lack of expertise (73.8%). Cultural resistance and risk perception. Limited financial resources, though considered less severe than expected

The emphasis on regulatory and project complexity mirrors findings from *Chanda & Phiri (2021)* and *Kagiri & Odhiambo (2021)*, who noted that excessive bureaucracy and unpredictable site conditions hinder structured risk adoption.

The finding that expertise is a bigger barrier than finances contrasts with *Nyirenda et al. (2021)*, who positioned funding as the top obstacle in developing economies. In Lusaka, SMEs appear more constrained by technical know-how and administrative burden than by outright cost.

Resistance to change and reliance on intuition over structured methods echoes *Amoah et al. (2023)*, who found that risk culture transformation is key for sustained adoption.

Objective 4: To Propose Strategies for Enhancing the Adoption and Effectiveness of RMFs
Participants proposed:

- Simplifying RMFs
- Training programs and workshops
- Adopting affordable risk software
- Government support (grants, regulatory clarity)
- Risk-awareness campaigns

These strategies align with *Mthembu & Sithole (2023)*, who found that government-sponsored training reduced risk incidents in South African SMEs. Similarly, *Ngugi et al. (2021)* showed that customised RMFs improved compliance by 30%.

The emphasis on digital tools and software resonates with *Jensen & Luthuli (2022)*, who demonstrated that AI-based platforms improved RMF adoption in SMEs.

Furthermore, calls for public-private collaboration and incentives reinforce suggestions by *Nyirenda & Chileshe (2024)*, who advocated for tax reliefs and funding schemes as catalysts for RMF adoption in Zambia.

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RECOMMENDATIONS

Based on the study's findings on the effectiveness and implementation of Risk Management Frameworks (RMFs) among SMEs in Lusaka's construction industry, the following actionable recommendations are proposed:

1. Simplify and Localize Risk Management Frameworks

Given the preference for COSO and the complexity of ISO 31000 and CAS, regulatory bodies (e.g., NCC, ZDA) should collaborate with professional associations to:

- Develop localized, simplified RMF templates tailored for SMEs in construction.
- Incorporate elements of COSO and RIMS while adapting ISO 31000 into more practical modules that require fewer resources to implement.

2. Strengthen Technical Capacity through Targeted Training

With 73.8% of respondents citing lack of expertise, stakeholders should:

- Introduce short-term certification programs on RMFs through technical colleges and professional bodies.
- Conduct subsidized workshops and on-site training to equip SME staff with skills in risk identification, assessment, and mitigation. (*Tembo & Mwale, 2023; Wambua & Njeru, 2022*)

3. Streamline Regulatory Requirements

As 100% of respondents cited regulatory complexity as a challenge, it is recommended that:

- The National Council for Construction (NCC) simplify compliance guidelines for SMEs and develop digital compliance portals to ease documentation processes.
- Government institutions introduce risk compliance checklists and self-assessment tools to make regulatory adherence less burdensome.

4. Improve Risk Culture through Awareness Campaigns

Resistance to change and low risk perception require:

- Awareness drives and case study dissemination showing the business value of RMFs.
- Risk management champions in SME clusters to promote a shift from reactive to proactive risk handling. (*Amoah et al., 2023*).

Suggestions for Future Studies

While this study provides valuable insights, the following recommendations are made for future research to expand on the findings:

1. Expand Geographical Scope

Future studies should include SMEs in other regions of Zambia such as Copperbelt, Southern, and Eastern Provinces to enhance generalizability and capture regional variations in RMF use and challenges.

2. Longitudinal Studies on RMF Integration

To understand how RMF adoption evolves, future studies could track SME implementation over time, analysing how training, policy changes, and financial incentives influence RMF maturity levels.

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