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Examining the Effectiveness of Risk Management Practices on Tax Base Expansion Projects: A Case Study of the Zambia Revenue Authority

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Abstract

Tax base expansion is an important strategy for improving domestic revenue mobilisation by increasing taxpayer registration, improving compliance, and integrating previously untaxed economic activities into the formal tax system. However, tax base expansion projects operate within complex environments characterised by operational, technological, economic, and stakeholder-related risks that can affect their successful implementation, and the effectiveness of the risk management practices applied to them remains insufficiently documented in the Zambian context. This study therefore examined the effectiveness of risk management practices on tax base expansion projects at the Zambia Revenue Authority (ZRA), guided by three objectives: to identify the common risks encountered, to assess the effectiveness of risk management practices in mitigating these risks, and to analyse the challenges faced by project teams in implementing them. An exploratory case study design with a mixed-methods approach was employed, using a cross-sectional survey. A semi-structured questionnaire containing closed-ended and open-ended questions was administered to ZRA employees selected through convenience sampling, with a sample size of 92 participants and 91 valid responses analysed. Quantitative data were analysed using STATA, with descriptive statistics presented in Microsoft Excel 365 and Chi-square tests used to examine associations between categorical variables, while qualitative responses were analysed thematically. Respondents were mainly experienced and educated employees, with 58.3% holding Bachelor's Degrees. Compliance risk (33.0%) and operational risk (31.9%) were the most frequently encountered risks, the economic environment (30.8%) and technological failures (27.5%) were the leading sources of risk, and monitoring and enforcement was the most exposed project stage (34.1%). Risk mitigation was the most commonly applied strategy (49.5%), supported by process standardisation, cybersecurity protocols, stakeholder engagement, specialised staffing, routine audits, and risk assessment training. However, limited staff capacity (33.0%), inadequate training, insufficient budget, taxpayer non-cooperation, and bureaucratic delays constrained implementation. Chi-square tests indicated significant associations between risk types and project stages, risk management strategies and operational risk control, and training programmes and skills gaps. The study concludes that effective risk management improves tax base expansion project performance, but requires stronger staff capacity, institutional support, and stakeholder collaboration.

Keywords: Risk Management Practices, Tax Base Expansion, Project Implementation, Tax Compliance, Zambia Revenue Authority, Zambia

1. Introduction

1.1 Background of the Study

Tax revenue is a critical source of funding for governments globally, enabling the provision of public services, infrastructure development, and social programmes (Arimoro and Musa, 2025) [7]. Effective tax administration is essential for mobilising resources, yet many countries struggle to expand their tax bases because of informal economic activity, tax evasion, limited institutional capacity, and operational risks in project implementation (Cahyadi, 2024) [11]. Globally, organisations such as the Organisation for Economic Co-operation and Development and the International Monetary Fund have emphasised tax base expansion initiatives as a strategy to increase compliance and improve revenue collection. These initiatives often rely on projects designed to identify unregistered taxpayers, enforce compliance, and improve the efficiency of tax administration

systems, but despite widespread adoption they are exposed to technological failures, operational inefficiencies, and human resource limitations that can compromise their effectiveness (Damiyano, 2024) [15].

In Sub-Saharan Africa, expanding the tax base remains a significant challenge because of high levels of informal economic activity, limited technological infrastructure, and weak institutional capacity (Gwaindepi, 2025) [20], and only a small proportion of eligible taxpayers in the region are formally registered, which constrains domestic revenue mobilisation (Ackom *et al*., 2025) [3]. Governments have responded with Tax Base Expansion (TBE) projects that involve digital taxpayer registration systems, outreach programmes, and enforcement mechanisms (Mpofu, 2022) [31]. However, these projects often encounter operational, compliance, and technological risks that can delay implementation or reduce effectiveness, and resource constraints, limited training in risk management, and bureaucratic bottlenecks exacerbate these risks (Nguimkeu and Okou, 2021) [37].

Locally, the Zambia Revenue Authority has implemented several initiatives to expand the tax base and strengthen revenue collection, including automated taxpayer registration, mobile tax registration campaigns, and compliance monitoring projects that aim to identify unregistered taxpayers and promote voluntary compliance (Chila and Nyambe, 2025) [12]. Historically, Zambia's tax administration has faced limited coverage of the informal sector, manual processing systems, and operational inefficiencies (Pumulo and Yohane, 2025) [46]. These challenges make risk management critical, because ineffective management of operational, technological, and compliance risks can result in project delays, under-registration of taxpayers, and reduced revenue collection (Mwiinde, 2024) [35]. This study therefore situates itself within the broader discourse on improving tax administration through risk management, and seeks to provide empirical evidence on how effective risk management practices contribute to the successful implementation of tax projects and the expansion of Zambia's tax base.

1.2 Statement of the Problem

Governments depend on tax systems to finance public services and support economic growth, yet many countries struggle to expand their tax bases because of tax evasion, informal economic activity, and weak administrative systems (Mpofu, 2021) [30]. Developed economies are more effective in tax collection than developing countries, which limits public financing capacity in the latter (Rumasukun and Noch, 2023) [49]. In Sub-Saharan Africa, domestic revenue mobilisation remains low and a large share of economic activity occurs in the informal sector, making taxpayer identification difficult (Mpofu, 2022) [31]. Countries in the region have introduced digital registration and compliance monitoring projects to expand their tax bases, but these initiatives often face risks related to limited resources, technology constraints, and weak institutional capacity (Arewa and Davenport, 2022) [6]. In Zambia, the Zambia Revenue Authority has introduced programmes to identify unregistered businesses and strengthen tax administration systems. However, tax base expansion projects still face operational, technological, and compliance-related risks, and there is limited empirical evidence on how effective risk management practices are in supporting these initiatives (Chila and Nyambe, 2025) [12]. This study therefore examines the effectiveness of risk management practices in tax base expansion projects to provide evidence that may support improved project implementation within the institution.

1.3 General Objective

To examine the effectiveness of risk management practices in enhancing the successful implementation of tax base expansion projects at the Zambia Revenue Authority.

1.3.1 Specific Objectives

1. To identify the common risks encountered in tax base expansion projects at the Zambia Revenue Authority.
2. To assess the effectiveness of risk management practices in mitigating these risks during project implementation.
3. To analyse the challenges faced by project teams in implementing risk management practices in tax base expansion projects.

1.4 Research Questions

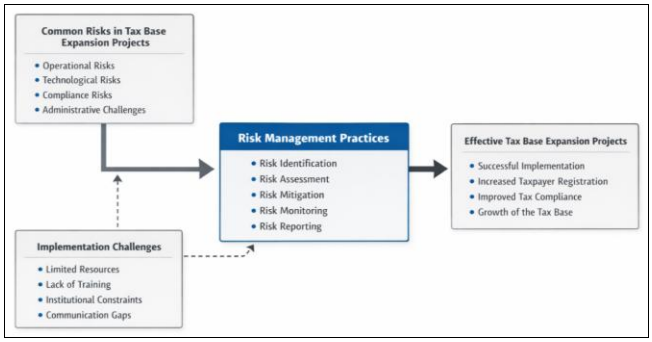
1. What are the common risks encountered in tax base expansion projects at the Zambia Revenue Authority?
2. How effective are the risk management practices used to mitigate risks during the implementation of tax base expansion projects at the Zambia Revenue Authority?
3. What challenges do project teams face when implementing risk management practices in tax base expansion projects at the Zambia Revenue Authority?

1.5 Conceptual Framework

This study examines the relationship between risk management practices and the performance of tax base expansion projects at the Zambia Revenue Authority. Tax base expansion projects aim to increase the number of registered taxpayers, improve tax compliance, and strengthen revenue collection (Larzen *et al*., 2020) [24], and they involve operational activities, information systems, and stakeholder engagement, each of which presents risks that can affect project outcomes (Taher and Lafta, 2021) [53]. Risk management practices are the main independent variable and refer to the systematic process used to identify, analyse, and control risks that may affect project objectives (Boateng *et al*., 2022) [10]. In this study they comprise risk identification, risk assessment, risk mitigation, risk monitoring, and risk reporting, whose effective application helps project teams manage uncertainty and maintain project progress (Pomaza-Ponomarenko *et al*., 2023) [45].

The dependent variable is the effectiveness of tax base expansion projects, measured through outcomes such as successful implementation of project activities, increased taxpayer registration, improved tax compliance, and growth in the number of individuals and businesses included in the tax system. When risks are properly managed, project teams are more likely to achieve these outcomes, since effective risk management prevents delays, reduces operational disruptions, and supports better decision-making (Koya, 2025) [23]. The framework therefore proposes that project effectiveness depends on how well risk management practices are applied during implementation, while implementation challenges may influence the level of effectiveness achieved. As Fig 1 shows, the common risks encountered in these projects (operational risks,

technological risks, compliance risks, and administrative challenges) feed into the risk management practices, which in turn lead to effective tax base expansion projects (successful implementation, increased taxpayer registration, improved tax compliance, and growth of the tax base). Implementation challenges (limited resources, lack of training, institutional constraints, and communication gaps) act as an intervening factor that may weaken both the handling of risks and the application of the practices. These relationships correspond to the study's three objectives.



Source: Author's Construct

Fig 1: Conceptual Framework of the Study

2. Literature Review

2.1 Common Risks Encountered in Tax Base Expansion Projects

Tax base expansion projects depend on reliable taxpayer data, which allows revenue authorities to identify individuals and businesses that should be registered and to monitor compliance (Abdu and Adem, 2023; Arewa and Davenport, 2022) [1, 6]. In many developing economies, however, taxpayer data is incomplete, outdated, or inconsistent across institutions, creating a major implementation risk (Achibo and Wanjohi, 2024; Adebiyi, 2023) [2, 4]. Fragmented databases, inconsistent formats, record duplication, manual record keeping, and weak data-sharing frameworks make it difficult to build a complete picture of economic activity, so many businesses remain outside the tax system (Baseka, 2022; Ali *et al*., 2020; Banda and Silwimba, 2025) [9, 5, 8]. Poor data also weakens risk-based compliance strategies, because analysis models become unreliable when the underlying data is inaccurate (Chila and Nyambe, 2025) [12], and remedies include integrated databases, data standardisation, regular verification, and formal data-sharing agreements (Dhaliwal *et al*., 2023; Isijola *et al*., 2025) [16, 21].

The dominance of the informal sector is another major risk. Informal businesses often operate without registration, keep limited financial records, and transact mainly in cash, which makes them hard to identify and monitor (Dom *et al*., 2022; Larzen *et al*., 2020) [17, 24]. Owners may avoid registration because they perceive it as complex or costly, or because they lack awareness of legal requirements (Chisala, 2022; Kafusha, 2022; Gandia *et al*., 2024) [13, 22, 18], and the absence of documentation complicates the estimation of taxable income (Chooi, 2020; Lateefat and Bankole, 2023) [14, 25]. Strategies that encourage voluntary formalisation, such as simplified regimes for small businesses, digital payments, and collaboration with local authorities and business associations, are widely used to integrate informal activity into the tax system (Moore and Prichard, 2020; Mundia, 2021; Ogunbela *et al*., 2021) [29, 33, 38].

Institutional coordination and technology introduce further risks. Weak collaboration among registration agencies, regulators, and local authorities, together with legal barriers to data exchange, slows taxpayer identification and reduces the effectiveness of enforcement (Okunogbe and Santoro, 2023; Mayega *et al*., 2021; Lumba *et al*., 2025; Mutungwa, 2024) [39, 28, 26, 34]. Digital systems improve efficiency but can be poorly designed or fail (Lwanga, 2021; Mtonga, 2023) [27, 32], are exposed to cyber security threats (Okunogbe and Tourek, 2024; Rahman *et al*., 2024; Pamisetty, 2020) [40, 47, 44], depend on infrastructure that is often inadequate (Oreku, 2021) [43], and are difficult to integrate across institutions (Onyeanuforo and Onohwakpo, 2025; Sampa, 2023) [41, 51]. Taxpayers with limited digital literacy may also struggle to comply with online procedures (Oo, 2023) [42].

Policy, behavioural, human resource, and political factors complete the risk picture. Frequent policy changes and complex regulations create uncertainty and raise compliance costs (Okunogbe and Tourek, 2024; Oo, 2023; Pumulo and Yohane, 2025; Simuchile, 2023) [40, 42, 46, 52], and policy instability can discourage formal investment (Rosario and Chavali, 2020) [48]. Taxpayer resistance is shaped by trust in government, perceptions of fairness, awareness of obligations, and social norms (Youde and Lim, 2023; Younus *et al*., 2025) [55, 56]. Shortages of skilled staff, limited training, heavy workloads, and staff turnover constrain implementation (Okunogbe and Santoro, 2023; Mayega *et al*., 2021; Lwanga, 2021) [39, 28, 27], while political interference and economic instability can disrupt enforcement and the continuity of projects (Dom *et al*., 2022; Gandia *et al*., 2024; Abdu and Adem, 2023; Achibo and Wanjohi, 2024) [17, 18, 1, 2]. Inadequate planning and budget constraints add project management risks (Chila and Nyambe, 2025; Banda and Silwimba, 2025) [12, 8].

2.2 Effectiveness of Risk Management Practices in Mitigating Risks During Project Implementation

The effectiveness of risk management depends on how well project teams identify, assess, and respond to threats that may affect project objectives, and consistent application reduces uncertainty and improves the likelihood of project success (Ackom *et al*., 2025; Arimoro and Musa, 2025) [3, 7]. Risk identification in the early stages, informed by technical experts, project managers, and institutional partners, allows mitigation strategies to be developed before risks disrupt activities (Boateng *et al*., 2022; Pomaza-Ponomarenko *et al*., 2023) [10, 45]. Risk assessment tools such as risk matrices help prioritise which risks need immediate attention (Cahyadi, 2024; Gwaindepi, 2025) [11, 20], and mitigation planning, which in tax administration may include enhanced digital security, stronger data verification, staff training, and alternative procedures for system failures, allows teams to respond quickly when risks materialise (Chila and Nyambe, 2025; Koya, 2025) [12, 23].

Because risks evolve throughout the project lifecycle, continuous monitoring through review meetings, progress reports, and performance indicators is essential (Larzen *et al*., 2020; Mpofu, 2022) [24, 31]. Communication and stakeholder engagement build trust and align project activities with objectives (Nguimkeu and Okou, 2021; Taher and Lafta, 2021) [37, 53], while capacity building and leadership support strengthen consistent application of risk management practices (Pomaza-Ponomarenko *et al*., 2023; Koya, 2025) [45, 23]. Effectiveness can nevertheless be

constrained when risk management is treated as a procedural formality, when financial or staffing limits prevent full implementation, or when political and economic shocks introduce risks that were not anticipated during planning (Cahyadi, 2024; Gwaindepi, 2025; Damiyano, 2024) [11, 20, 15].

2.3 Challenges Faced by Project Teams in Implementing Risk Management Practices

Tax base expansion projects introduce new administrative procedures, digital platforms, and enforcement approaches that create uncertainty within tax administration systems (Abdu and Adem, 2023; Adebiyi, 2023; Ali *et al*., 2020) [1, 4, 5]. In such unstable environments, where information is often incomplete, applying structured risk management is difficult and teams may respond to problems only after they have disrupted planned activities (Banda and Silwimba, 2025; Baseka, 2022) [8, 9]. Limited technical capacity is a major challenge, since staff are often trained for routine tax administration rather than risk assessment, which makes responses reactive instead of preventive (Achibo and Wanjohi, 2024; Arewa and Davenport, 2022; Chila and Nyambe, 2025) [2, 6, 12]. Inadequate data systems and poor data quality further reduce the accuracy of risk assessments and may lead teams to direct compliance efforts to areas that do not represent the highest risk (Ali *et al*., 2020; Abdu and Adem, 2023) [5, 1].

Resource constraints, including tight budgets and staff shortages, force teams to prioritise immediate operational targets such as registering taxpayers over structured risk management (Abdu and Adem, 2023; Achibo and Wanjohi, 2024; Baseka, 2022) [1, 2, 9]. Resistance from taxpayers who perceive registration as a financial burden adds operational risk (Arewa and Davenport, 2022; Ali *et al*., 2020) [6, 5]. Weak coordination between departments, limited management support focused on short-term revenue targets, and political and economic pressures further complicate the consistent application of risk management practices (Achibo and Wanjohi, 2024; Banda and Silwimba, 2025; Adebiyi, 2023; Chila and Nyambe, 2025) [2, 8, 4, 12].

2.4 Establishment of Research Gap

Although the literature provides useful insight into the risks and challenges affecting tax base expansion projects, several gaps remain. First, most studies identify issues such as poor data quality, the dominance of the informal sector, weak institutional coordination, technological limitations, and resource constraints, but describe them at a general or policy level rather than examining how risk management practices are applied during the actual implementation of projects. Second, several studies rely on conceptual discussion or secondary data and therefore provide limited empirical evidence on how risks influence project outcomes in practice, and they treat taxpayer behaviour, political pressure, and technological change from economic, governance, or systems perspectives rather than from a project management perspective. Third, relatively few empirical studies focus on the operational experiences of tax authorities in Zambia, particularly the Zambia Revenue Authority, since most Zambian studies concentrate on tax policy, revenue performance, or compliance behaviour. This study addresses these gaps by providing context-specific empirical evidence on the risks encountered, the effectiveness of risk management practices, and the challenges faced by project teams.

3. Research Methodology

3.1 Research Design

The study used an exploratory case study design and adopted a mixed-methods approach to collect primary data. A cross-sectional approach was used to collect data at a single point in time. Quantitative methods provided numerical data that were analysed statistically to examine relationships among variables, while qualitative methods provided detailed information that helped to develop a deeper understanding of the study variables (Nagpal *et al*., 2021) [36].

3.2 Target Population

A population is a collection of objects, events, or individuals sharing common characteristics that the researcher is interested in studying (Willie, 2024) [54]. The target population for this study consisted of employees at the Zambia Revenue Authority.

3.3 Sampling Design and Sample Size

A sample is a subset of a population that is used to represent the entire group (Willie, 2024) [54]. The study employed convenience sampling, a form of non-probability sampling in which participants are selected on the basis of their availability and willingness to take part. It was chosen for its practicality in accessing participants within the limitations of the study's timeframe and budget (Golzar *et al*., 2022) [19]. The study involved 92 participants, of whom 91 provided valid responses.

3.4 Data Collection Methods

The primary research tool was a semi-structured questionnaire containing both closed-ended and open-ended questions, a design well suited to mixed-methods research because it allows the collection of both quantitative and qualitative data. The questionnaires were administered mainly through electronic platforms, with some face-to-face interviews conducted as needed (Saglam, 2024) [50].

3.5 Data Analysis

STATA was used for data entry and statistical analysis, while Microsoft Excel 365 was employed to present descriptive statistics through graphical representations. For inferential analysis, the Chi-square test was used to examine associations between categorical variables. Qualitative data were analysed using thematic analysis, which systematically identified, organised, and interpreted recurring patterns or themes in the responses. Triangulation was achieved by collecting both quantitative and qualitative data through the survey, which minimised the risk of bias and strengthened the credibility and dependability of the findings.

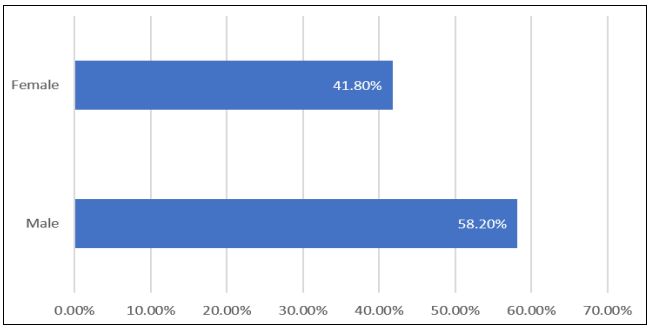
3.6 Limitations and Ethical Considerations

The study was limited to tax base expansion projects undertaken by the Zambia Revenue Authority, which may limit the generalisability of the findings to other organisations. The cross-sectional design restricted the study to data collected at a single point in time, the convenience sampling technique may have affected the representativeness of the sample, and the findings depended on the accuracy and honesty of respondents' answers, which may have introduced response bias. On ethics, informed

consent was obtained from all participants, who were briefed on the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time. Confidentiality and anonymity were maintained by securely storing data and removing personally identifying information from reports.

4. Findings and Results

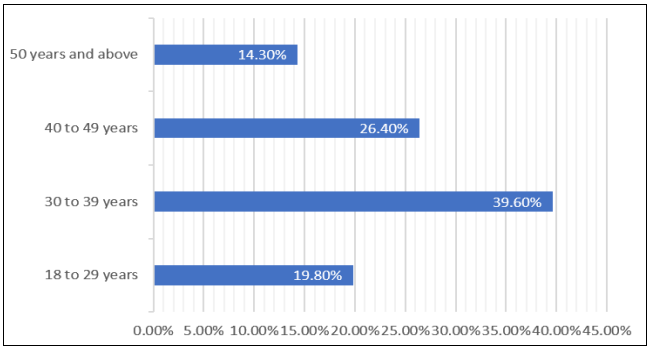
4.1 Background Characteristics of Respondents



Source: Primary Data

Fig 2: Distribution of Respondents by Sex

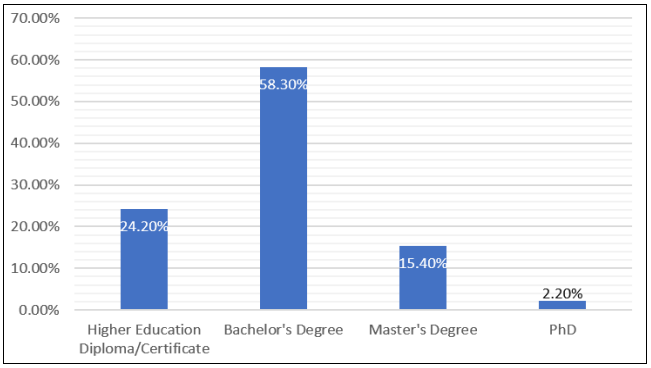
This section presents the background profile of the 91 respondents whose questionnaires were valid. Male respondents constituted the majority (58.2%, n = 53), while female respondents accounted for 41.8% (n = 38).



Source: Primary Data

Fig 3: Distribution of Respondents by Age Group

Respondents aged 30–39 years formed the largest group (39.6%, n = 36), followed by those aged 40–49 years (26.4%, n = 24), 18–29 years (19.8%, n = 18), and 50 years and above (14.3%, n = 13). Most participants were therefore within the economically active and professionally experienced age groups.

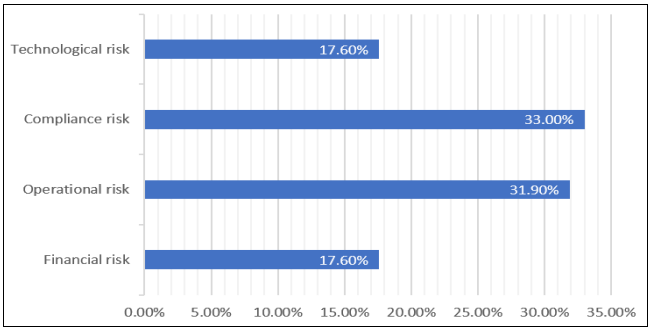


Source: Primary Data

Fig 4: Highest Level of Education of Respondents

Respondents with a Bachelor's Degree formed the largest group (58.3%, n = 53), followed by those holding Higher Education Diploma or Certificate qualifications (24.2%, n = 22), Master's Degrees (15.4%, n = 14), and PhDs (2.2%, n = 2), indicating a well-educated respondent base.

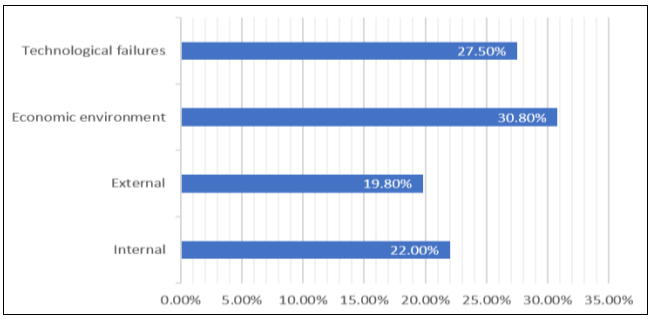
4.2 Common Risks Encountered in Tax Base Expansion Projects



Source: Primary Data

Fig 5: Types of Risks Most Frequently Encountered in Tax Base Expansion Projects

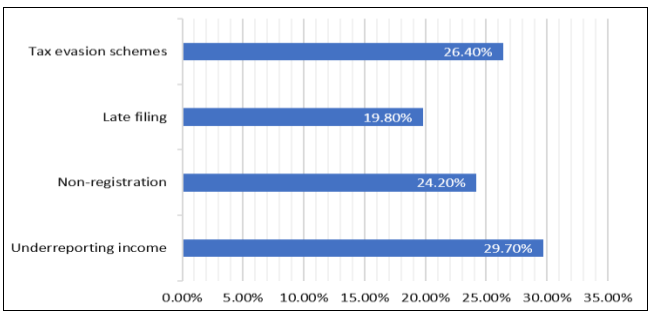
Compliance risk (33.0%, n = 30) was the most frequently encountered risk, followed by operational risk (31.9%, n = 29), while financial risk and technological risk were each selected by 17.6% (n = 16) of respondents. Compliance-related issues therefore remain the predominant concern during project implementation.



Source: Primary Data

Fig 6: Major Sources of Risk Affecting Tax Base Expansion Projects

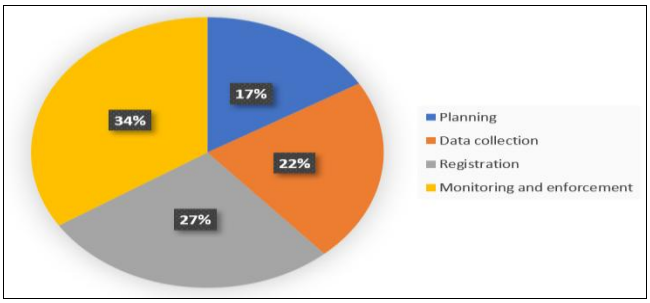
The economic environment (30.8%, n = 28) was considered the greatest source of risk, followed closely by technological failures (27.5%, n = 25). Internal risks accounted for 22.0% (n = 20) and external risks for 19.8% (n = 18), implying that economic factors have the greatest influence on project risks.



Source: Primary Data

Fig 7: Common Taxpayer Non-Compliance Risks Encountered

Underreporting of income (29.7%, n = 27) was the most common non-compliance risk, followed by tax evasion schemes (26.4%, n = 24), non-registration (24.2%, n = 22), and late filing (19.8%, n = 18), indicating that inaccurate income declaration remains a major challenge.



Source: Primary Data

Fig 8: Project Stages Most Exposed to Risks

Monitoring and enforcement (34.1%, n = 31) was the project stage with the highest risk exposure, followed by registration (27.5%, n = 25), data collection (22.0%, n = 20), and planning (16.5%, n = 15), suggesting that risks become more pronounced during implementation and enforcement activities.

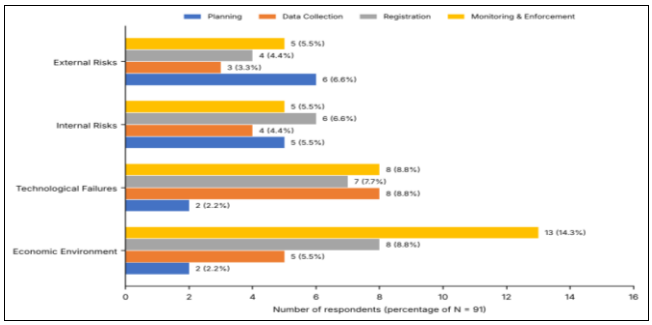
Table 1: Chi-Square Test of Association Between Types of Risks Encountered and Project Stages Most Exposed to Risks

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	96.667	6	.003
Likelihood Ratio	112.288	6	.000
Linear-by-Linear Association	1.820	1	.003
N of Valid Cases	**91**		

Source: Primary Data

A statistically significant association was found between the types of risks encountered and the project stages most exposed to risks, $\chi^2(6, N = 91) = 96.667$, $p = .003$, and the null hypothesis was therefore rejected. Different risks occur at different stages of implementation, which highlights the need for stage-specific risk management strategies.

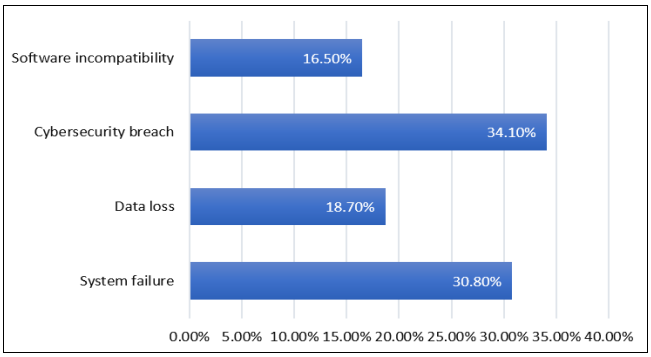
The cross-tabulation in Fig 9 shows how the sources of risk are distributed across the project stages. The economic environment was most strongly associated with monitoring and enforcement (n = 13, 14.3%), while technological failures were concentrated in data collection and monitoring and enforcement (n = 8 each, 8.8%) and internal risks were spread fairly evenly across stages. External risks were most frequently linked to planning (n = 6, 6.6%).



Source: Primary Data

Note: Percentages are shares of all valid responses (N = 91).

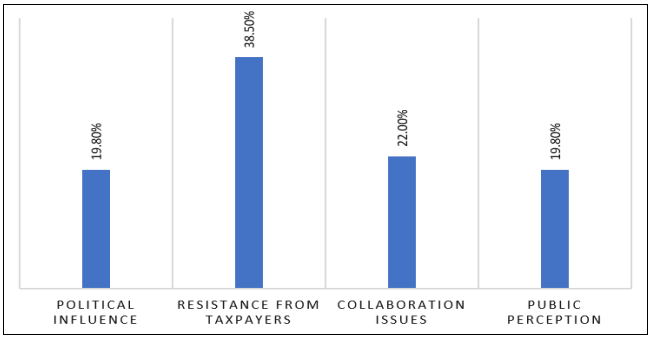
Fig 9: Cross-tabulation Between Major Sources of Risk and Project Stages Most Exposed to Risks



Source: Primary Data

Fig 10: Information Technology Risks Affecting Tax Base Expansion Projects

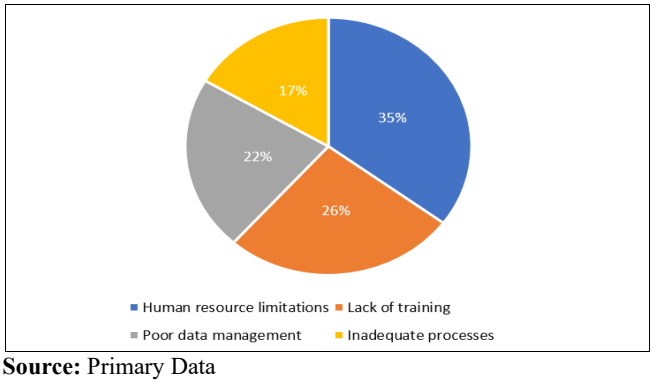
Cybersecurity breaches (34.1%, n = 31) were the most common IT-related risk, followed by system failures (30.8%, n = 28), data loss (18.7%, n = 17), and software incompatibility (16.5%, n = 15), demonstrating the growing importance of information security in tax administration projects.



Source: Primary Data

Fig 11: Stakeholder-Related Risks in Tax Base Expansion Projects

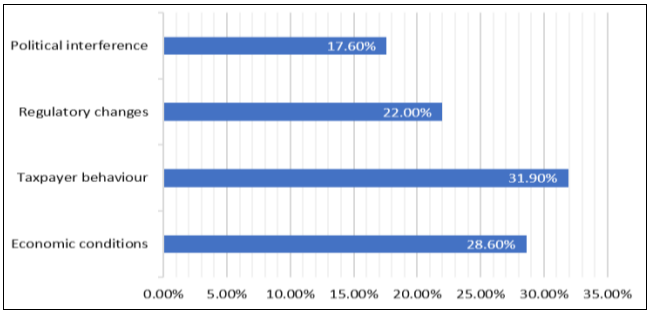
Resistance from taxpayers (38.5%, n = 35) was the most significant stakeholder-related risk, followed by collaboration issues (22.0%, n = 20), while political influence and public perception each accounted for 19.8% (n = 18). Taxpayer cooperation therefore remains essential for successful implementation.



Source: Primary Data

Fig 12: Internal Factors Contributing to Project Risks

Human resource limitations (35.2%, n = 32) were the leading internal factor contributing to project risks, followed by lack of training (26.4%, n = 24), poor data management (22.0%, n = 20), and inadequate processes (16.5%, n = 15), which highlights the importance of adequate staffing and staff competencies.

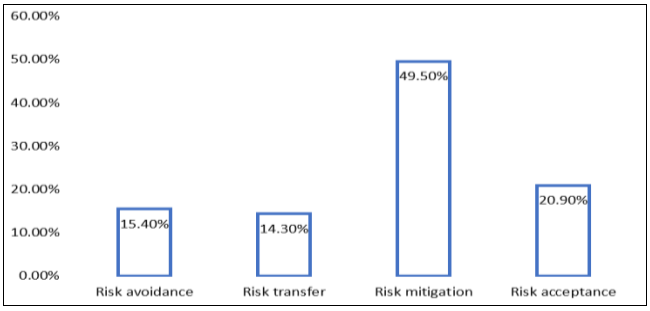


Source: Primary Data

Fig 13: External Factors Contributing to Project Risks

Taxpayer behaviour (31.9%, n = 29) was the most significant external factor, followed by economic conditions (28.6%, n = 26), regulatory changes (22.0%, n = 20), and political interference (17.6%, n = 16), suggesting that taxpayer responses significantly influence project outcomes. In response to the open-ended items, respondents reported additional risks including changing tax policies, inadequate taxpayer awareness, inaccurate taxpayer records, limited financial resources, and delays in accessing reliable data. They also described incidents in which system downtime, delayed taxpayer registration, inaccurate taxpayer information, and insufficient coordination among project teams disrupted implementation, showing that unmanaged risks can negatively affect project timelines and performance.

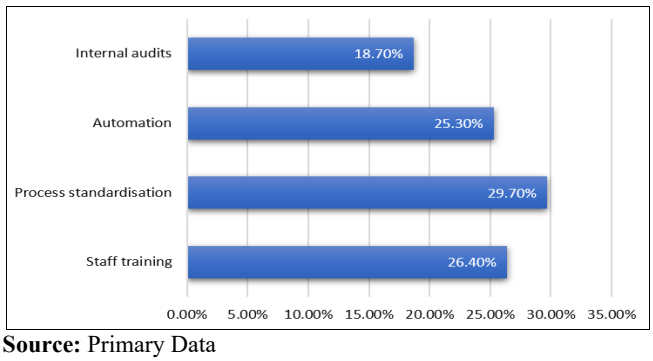
4.3 Effectiveness of Risk Management Practices



Source: Primary Data

Fig 14: Risk Management Strategies Applied in Tax Base Expansion Projects

Risk mitigation (49.5%, n = 45) was the most commonly applied strategy, followed by risk acceptance (20.9%, n = 19), risk avoidance (15.4%, n = 14), and risk transfer (14.3%, n = 13), suggesting that reducing the impact of identified risks is the preferred management approach.



Source: Primary Data

Fig 15: Effectiveness of Operational Risk Control Measures

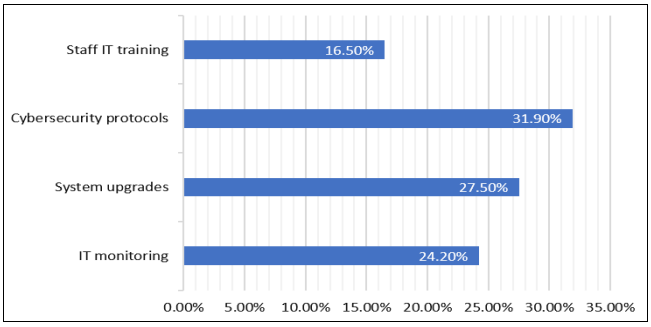
Process standardisation (29.7%, n = 27) was considered the most effective method for controlling operational risks, followed by staff training (26.4%, n = 24), automation (25.3%, n = 23), and internal audits (18.7%, n = 17), indicating that consistent operational procedures contribute to improved risk control.

Table 2: Association Between Risk Management Strategies and Effectiveness of Operational Risk Control

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	96.667	6	.021
Likelihood Ratio	112.288	6	.020
Linear-by-Linear Association	1.820	1	.021
N of Valid Cases	**91**		

Source: Primary Data

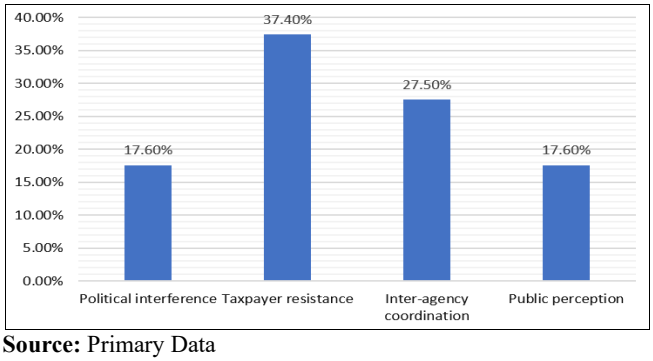
The association between the risk management strategies applied and the effectiveness of operational risk control measures was statistically significant, $\chi^2(6, N = 91) = 96.667$, $p = .021$, so the null hypothesis was rejected. The choice of strategy therefore significantly influences how effectively project teams control operational risks.



Source: Primary Data

Fig 16: Effectiveness of Technological Risk Control Measures

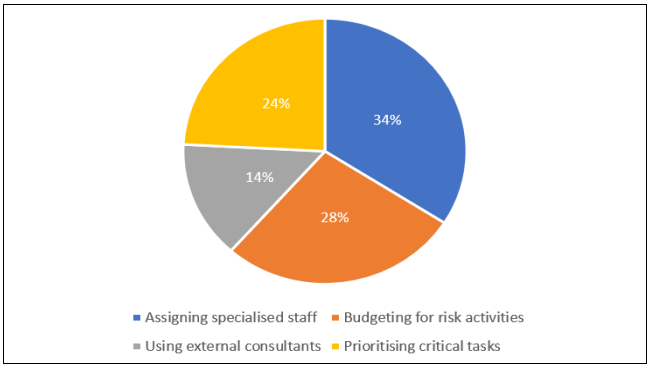
Cybersecurity protocols (31.9%, n = 29) were regarded as the most effective method for controlling technological risks, followed by system upgrades (27.5%, n = 25), IT monitoring (24.2%, n = 22), and staff IT training (16.5%, n = 15), highlighting the importance of cybersecurity measures in safeguarding project systems.



Source: Primary Data

Fig 17: Effectiveness of Stakeholder Engagement in Mitigating Project Risks

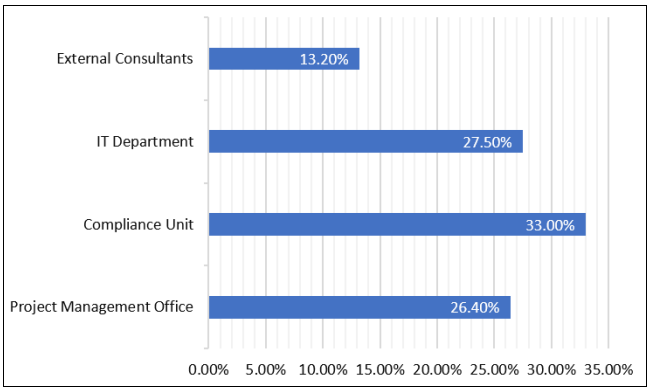
Taxpayer resistance (37.4%, n = 34) was the type of risk best mitigated through stakeholder engagement, followed by inter-agency coordination (27.5%, n = 25), while political interference and public perception each accounted for 17.6% (n = 16), showing that engagement plays a key role in improving taxpayer cooperation.



Source: Primary Data

Fig 18: Effectiveness of Resource Allocation Approaches in Reducing Project Risks

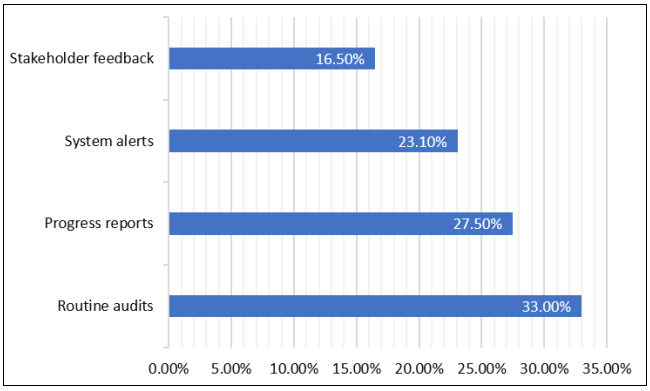
Assigning specialised staff (34.1%, n = 31) was the most effective resource allocation approach, followed by budgeting for risk activities (27.5%, n = 25), prioritising critical tasks (24.2%, n = 22), and using external consultants (14.3%, n = 13).



Source: Primary Data

Fig 19: Departments Playing the Largest Role in Implementing Risk Controls

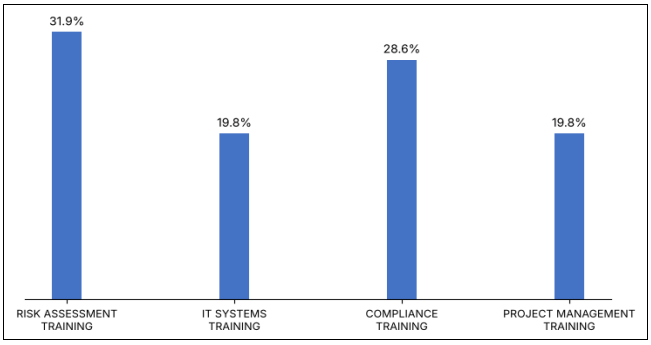
The Compliance Unit (33.0%, n = 30) played the largest role in implementing risk controls, followed by the IT Department (27.5%, n = 25), the Project Management Office (26.4%, n = 24), and external consultants (13.2%, n = 12).



Source: Primary Data

Fig 20: Effectiveness of Risk Monitoring Activities

Routine audits (33.0%, n = 30) were the most effective monitoring activity, followed by progress reports (27.5%, n = 25), system alerts (23.1%, n = 21), and stakeholder feedback (16.5%, n = 15), suggesting that continuous auditing strengthens risk oversight.

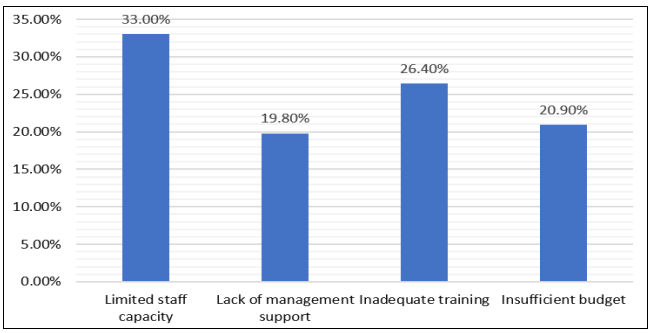


Source: Primary Data

Fig 21: Training Programmes Supporting Risk Management

Risk assessment training (31.9%, n = 29) was viewed as the most useful form of training for risk mitigation, followed by compliance training (28.6%, n = 26), IT systems training (19.8%, n = 18), and project management training (19.8%, n = 18), indicating that strengthening employees' risk identification skills supports effective project implementation.

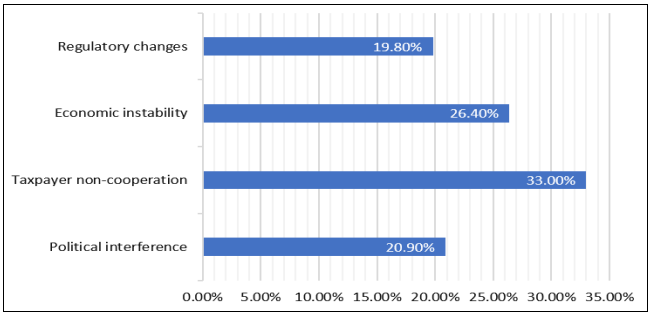
4.4 Challenges Faced by Project Teams in Implementing Risk Management Practices



Source: Primary Data

Fig 22: Challenges Affecting the Implementation of Risk Management Practices

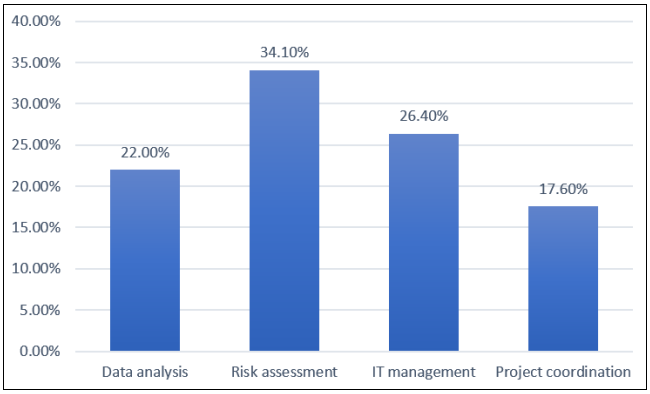
Limited staff capacity (33.0%, n = 30) was the greatest challenge, followed by inadequate training (26.4%, n = 24), insufficient budget (20.9%, n = 19), and lack of management support (19.8%, n = 18), suggesting that human resource constraints limit effective risk management.



Source: Primary Data

Fig 23: External Factors Affecting the Implementation of Risk Management Practices

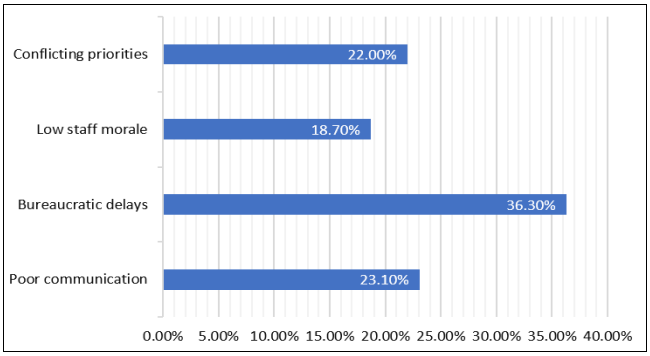
Taxpayer non-cooperation (33.0%, n = 30) was the external factor with the greatest impact, followed by economic instability (26.4%, n = 24), political interference (20.9%, n = 19), and regulatory changes (19.8%, n = 18).



Source: Primary Data

Fig 24: Skills Gaps Affecting Risk Management Implementation

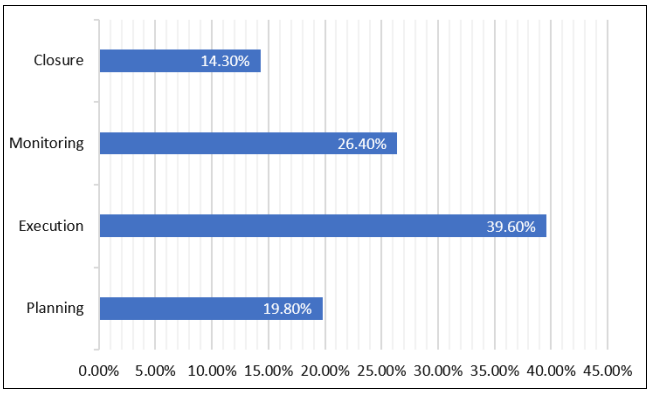
Risk assessment skills (34.1%, n = 31) represented the largest skills gap among project teams, followed by IT management (26.4%, n = 24), data analysis (22.0%, n = 20), and project coordination (17.6%, n = 16).



Source: Primary Data

Fig 25: Organisational Challenges Affecting Risk Mitigation

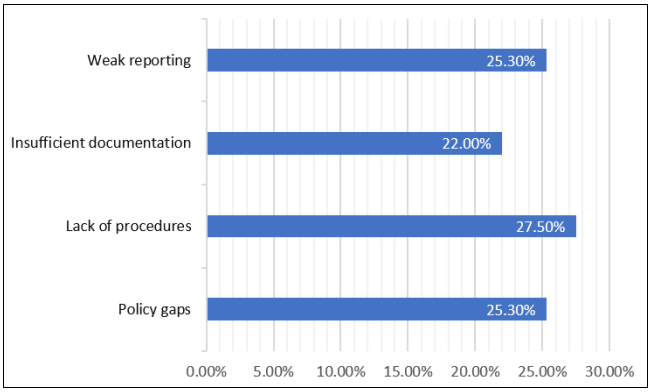
Bureaucratic delays (36.3%, n = 33) were the organisational challenge that most affected risk mitigation, followed by poor communication (23.1%, n = 21), conflicting priorities (22.0%, n = 20), and low staff morale (18.7%, n = 17), implying that organisational procedures can delay timely responses to project risks.



Source: Primary Data

Fig 26: Project Phases Experiencing the Greatest Risk Management Challenges

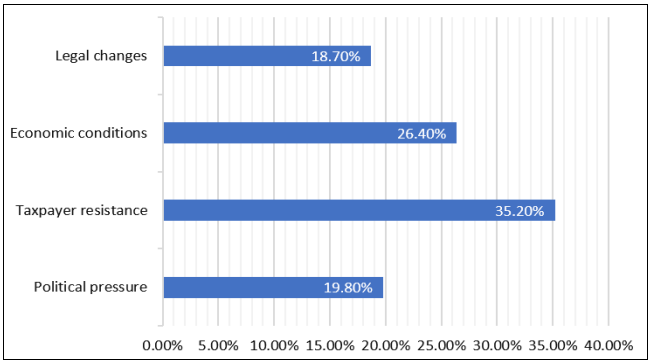
The execution phase (39.6%, n = 36) experienced the greatest challenges, followed by monitoring (26.4%, n = 24), planning (19.8%, n = 18), and project closure (14.3%, n = 13), so risk management demands are highest during execution.



Source: Primary Data

Fig 27: Internal Process Limitations Affecting Risk Management

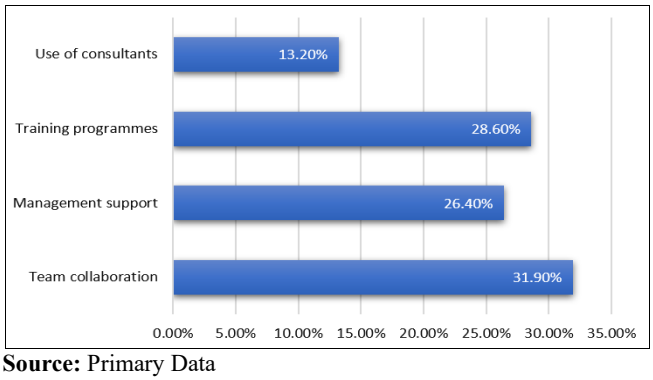
Lack of procedures (27.5%, n = 25) was the most significant internal process limitation, followed by policy gaps (25.3%, n = 23), weak reporting (25.3%, n = 23), and insufficient documentation (22.0%, n = 20).



Source: Primary Data

Fig 28: External Stakeholder Challenges Affecting Risk Management

Taxpayer resistance (35.2%, n = 32) was the external factor that most hindered risk management, followed by economic conditions (26.4%, n = 24), political pressure (19.8%, n = 18), and legal changes (18.7%, n = 17), demonstrating that external stakeholder behaviour remains a major obstacle to project success.



Source: Primary Data

Fig 29: Measures for Overcoming Risk Management Implementation Challenges

Team collaboration (31.9%, n = 29) was considered the most effective method for overcoming implementation challenges, followed by training programmes (28.6%, n = 26), management support (26.4%, n = 24), and the use of consultants (13.2%, n = 12).

Table 3: Association Between Training Programmes Supporting Risk Management and Skills Gaps Affecting Implementation

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	96.667	6	.019
Likelihood Ratio	112.288	6	.017
Linear-by-Linear Association	1.820	1	.019
N of Valid Cases	**91**		

Source: Primary Data

A statistically significant association was found between training programmes supporting risk management and the skills gaps affecting implementation, $\chi^2(6, N = 91) = 96.667$, $p = .019$, so the null hypothesis was rejected. Appropriate and targeted training can help address competency gaps in risk assessment, information technology management, data analysis, and project coordination.

4.5 Discussion of Results

4.5.1 Common Risks Encountered in Tax Base Expansion Projects

The finding that compliance risk (33.0%) and operational risk (31.9%) were the most common risks supports Abdu and Adem (2023) [1] and Arewa and Davenport (2022) [6], who highlighted that expanding the tax base in developing economies is often affected by difficulties in identifying taxable individuals, ensuring registration, and promoting voluntary compliance. The dominance of compliance risk also suggests that increasing the number of registered taxpayers does not automatically translate into improved revenue, consistent with Achibo and Wanjohi (2024) [2], who noted that some taxpayers deliberately avoid compliance while others lack knowledge of tax requirements. The identification of the economic environment (30.8%) as the leading source of risk agrees with Gwaindepi (2025) [20] and Dom *et al*. (2022) [17], who linked economic conditions to the persistence of informality and to uncertainty for revenue authorities.

The prominence of technological failures, particularly cybersecurity breaches (34.1%) and system failures (30.8%), supports Baseka (2022) [9] and Chila and Nyambe (2025) [12], who argued that digital transformation creates dependency on reliable information systems, and Ackom *et al*. (2025) [3], who emphasised that secure data management is necessary for modern revenue authorities. Underreporting of income (29.7%) as the main non-compliance risk agrees with Ali *et al*. (2020) [5], who noted that poor-quality taxpayer information weakens risk-based compliance, and with Larzen *et al*. (2020) [24] and Gandia *et al*. (2024) [18] on the difficulty of assessing income in cash-based informal activity. The significant association between risk types and project stages ($p = .003$) supports Cahyadi (2024) [11], who emphasised that risk management should consider project phases because the nature of risks changes across the lifecycle. Taxpayer resistance (38.5%) as the main stakeholder risk agrees with Nguimkeu and Okou (2021) [37], and the importance of human resource limitations (35.2%) supports Pomaza-Ponomarenko *et al*. (2023) [45] on institutional capacity and employee competence.

4.5.2 Effectiveness of Risk Management Practices in Tax Base Expansion Projects

The dominance of risk mitigation (49.5%) is consistent with Chila and Nyambe (2025) [12], who argued that mitigation is preferred in public sector projects because it balances risk control with project objectives, and with Ackom *et al*. (2025) [3] and Arimoro and Musa (2025) [7] on proactive identification and control of threats. Process standardisation (29.7%) as the most effective operational control supports Boateng *et al*. (2022) [10], who noted that structured processes improve project control, and the significant association between strategy and operational risk control ($p = .021$) agrees with Cahyadi (2024) [11] and Gwaindepi (2025) [20] on the value of risk prioritisation and response strategies. The effectiveness of cybersecurity protocols (31.9%) supports Ackom *et al*. (2025) [3] on secure data management, and the role of stakeholder engagement in addressing taxpayer resistance (37.4%) agrees with Nguimkeu and Okou (2021) [37] and Taher and Lafta (2021) [53], who emphasised that communication reduces uncertainty and builds trust.

The finding that assigning specialised staff (34.1%) was the most effective resource allocation approach supports Koya (2025) [23] on institutional capacity and leadership support, while the role of the Compliance Unit (33.0%) alongside the IT Department and Project Management Office reflects the need for clear responsibilities among stakeholders noted by Pomaza-Ponomarenko *et al*. (2023) [45]. The effectiveness of routine audits (33.0%) supports Larzen *et al*. (2020) [24] and Mpofu (2022) [31] on continuous monitoring, and the value placed on risk assessment training (31.9%) is consistent with Pomaza-Ponomarenko *et al*. (2023) [45] on employee competence.

4.5.3 Challenges Faced by Project Teams in Implementing Risk Management Practices

Limited staff capacity (33.0%) and inadequate training (26.4%) agree with Achibo and Wanjohi (2024) [2] and Arewa and Davenport (2022) [6], who noted that effective risk management requires teams with the knowledge to identify, evaluate, and respond to emerging risks, and with Baseka (2022) [9] and Banda and Silwimba (2025) [8] on the need for continuous capacity development. The significant association between training programmes and skills gaps ($p = .019$) suggests that targeted training in risk assessment, data analysis, and IT management can reduce competency gaps. Taxpayer non-cooperation (33.0%) is consistent with Abdu and Adem (2023) [1] and Ali *et al*. (2020) [5], who observed that individuals outside the formal system may perceive registration as a burden, and bureaucratic delays (36.3%) support Chila and Nyambe (2025) [12] on weak coordination between departments.

That the execution phase (39.6%) experienced the greatest challenges supports Adebiyi (2023) [4], who noted that execution is exposed to uncertainty because plans are converted into practical operations, which underlines the need for continuous risk monitoring rather than risk identification during planning alone. The lack of procedures (27.5%) agrees with Baseka (2022) [9] on the need for established frameworks, reporting mechanisms, and documentation, while the effectiveness of team collaboration (31.9%) as a remedy supports Banda and Silwimba (2025) [8], who emphasised collaboration and shared responsibility.

5. Conclusion

It is evident that risk management is a critical component in improving the implementation of tax base expansion projects at the Zambia Revenue Authority. The objective of this study was to examine the effectiveness of risk management practices in tax base expansion projects. Thus,

the study concludes that these projects are affected by various risks, with compliance and operational risk the most common, while economic conditions, technological failures, and internal organisational limitations represent major sources of uncertainty, and that risks are more prominent during monitoring and enforcement. Risk management practices, particularly risk mitigation, process standardisation, cybersecurity measures, stakeholder engagement, specialised staffing, routine audits, and employee training, contribute to improved risk control and project performance. However, their effectiveness is constrained by limited staff capacity, inadequate training, insufficient resources, bureaucratic delays, weak procedures, and limited management support. Lastly, this study was confined to a single institution and relied on convenience sampling. For further research, studies across other institutions and with probability sampling would be valuable to test whether similar outcomes would be obtained elsewhere.

5.1 Recommendations

The study recommends that the Zambia Revenue Authority invest in continuous training to improve project teams' skills in risk assessment, data analysis, information technology management, and project coordination, and develop a structured risk management framework with clear procedures for risk reporting, ownership, escalation, and monitoring indicators. Management should provide stronger support by allocating adequate financial and human resources to risk management activities, and project teams should adopt phase-specific risk management approaches, with regular risk assessments across the planning, registration, data collection, implementation, monitoring, and closure stages.

Furthermore, the Authority should strengthen taxpayer engagement and awareness programmes, enhance digital systems and cybersecurity controls, and improve coordination among departments and with external institutions, including through integrated databases and formal data-sharing agreements. Routine audits, progress reporting, and performance monitoring should be strengthened to identify risks early, and project teams should establish platforms for sharing experiences, lessons learned, and successful risk management practices to improve institutional learning.

6. Acknowledgement

I express sincere gratitude to the Divine Creator, the source of life, knowledge, and insight, for guidance throughout this research journey. I also extend sincere appreciation to my research supervisor, Ms. Lynn Kazembe, for her support, guidance, and patience during the study. It was a privilege to work under her supervision, and I value the knowledge and insight she shared with me.

Lastly, I thank my family, whose constant support and encouragement motivated my academic journey. This achievement reflects their belief in my abilities.

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