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Research Article

ISO 31000 Risk Management in Practice: Adoption Challenges and Benefits in Qatar's Leading Construction Firm

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ABSTRACT

The construction industry frequently faces a range of risks, including safety concerns, financial uncertainty, and operational interruptions that can result in substantial costs. Given these ongoing challenges, adopting a structured approach to risk management has become increasingly important. This study examines the application of the ISO 31000 risk management framework in practice at XYZ Construction in Qatar, with a particular focus on the challenges encountered during implementation and the benefits observed by employees. Data were collected through a structured survey using a convenience sampling method, involving 56 employees from different levels of the organization, to evaluate the effectiveness of the applied risk management practices. The top five benefits identified were enterprise-wide risk perspective, alignment with organizational goals, proactive approach to risk, cost reductions, and increased stakeholder confidence. Nonetheless, implementation faced several barriers, such as knowledge and skills gaps, cultural and operational integration difficulties, limited training and leadership involvement, resistance to change, and inadequate resource allocation. This study utilized multiple regression analysis to investigate the simultaneous influence of various factors on the adoption of ISO 31000. Despite the comprehensive assessment of multiple variables, the findings indicated no statistically significant effect, implying that additional determinants may affect the adoption process. The findings highlight leadership support, clear communication, and strategic planning as vital for embedding risk management. Recommendations focus on targeted training, stronger leadership involvement, tailored risk tools, and improved cross-departmental collaboration to enhance resource allocation, cultural integration, and overall risk management effectiveness.

Keywords: *ISO 31000, Risk management, Construction industry, Capacity-building, Qatar, Challenges, Enterprise risk management*

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Introduction

The Project Management Body of Knowledge (PMBOK) defines risk as an uncertain event or condition that, if it happens, could affect one or more project objectives, either positively or negatively. It further distinguishes between negative risks, known as threats, and positive risks, referred to as opportunities (PMI, 2021, p. 117). Similarly, ISO 31000 defines risk as the effect of uncertainty on objectives, where "effect" refers to any deviation from the expected outcome (ISO, 2018, p. 1). Supporting this view, Kendrick (2015) noted that two key factors determine the nature of risk: the potential outcomes of an event and the probability of its occurrence (p. 5). Building on these foundational definitions, it is clear that in today's rapidly evolving business environment, managing risks is no longer optional; it is essential. Organizations must take the initiative to identify potential issues early and be adaptable enough to respond effectively when unexpected situations arise. As Putri and Wijaya (2023) explain, risk management involves establishing guidelines to detect, monitor, and mitigate operational hazards. When applied effectively, it ensures that business operations remain aligned with strategic goals and prevents losses that could overwhelm managerial capacity (Hardjomidjojo et al., 2022). Conversely, as Sharma and Gupta (2019, as cited in Dela Cruz & Polinar, 2023) warn, neglecting risk management may lead to severe setbacks in cost, schedule, and quality.

The increasing urgency to manage risks is driven by the realities of a VUCA environment, marked by volatility, uncertainty, complexity, and ambiguity. Such conditions require organizations not only to manage risks but to integrate risk management as a fundamental capability (Hutchins, 2018). Within this framework, ISO 31000 (2018) emphasizes that effective risk management is essential for safeguarding and enhancing value, boosting organizational performance, fostering innovation, and achieving strategic goals. To help organizations navigate such complexity, ISO 31000 offers a globally recognized, structured approach to risk management. The standard presents a set of principles, a supporting framework, and a clear process grounded in AS/NZS 4360—an earlier standard developed in Australia and New Zealand that was adopted by over 60 countries as a national benchmark. Although ISO 31000 offers thorough guidance, it is not designed as a certifiable management system (Hutchins, 2018). Consequently, most organizations adopt the standard's fundamental concepts rather than seek formal certification, often describing their risk management approach as "inspired by" or "aligned with" ISO 31000 (Leitch, 2010).

Before the introduction of ISO 31000 in 2009, most risk management standards primarily focused on procedural aspects of managing risk. These earlier frameworks often overlooked the importance of establishing a comprehensive structure that would ensure the consistent and sustained application of risk management practices over time (Sousa et al., 2012). In Qatar, this limitation was reflected in fragmented approaches to risk, with organizations lacking a unified and strategic system to guide long-term implementation.

In response to these shortcomings, the adoption of ISO 31000 has gained significant momentum across the Gulf region—particularly in Qatar—as organizations increasingly prioritize resilience, accountability, and stakeholder confidence. Prominent institutions such as Qatar Project Management (QPM, 2019), Msheireb Properties (BSI Group, 2013), Gulf Warehousing Company (Peninsula, 2025), and Qatar Charity (Qatar Charity, 2024) have adopted ISO 31000:2018 to strengthen their risk governance structures, signaling a broader shift toward more systematic and proactive risk management practices.

Despite this regional progress, many construction firms in Qatar continue to focus on adopting discipline-specific ISO standards such as ISO 9001 for quality, ISO 45001 for occupational health and safety, and ISO 14001 for environmental management. However, full-scale integration of ISO 31000's enterprise risk management (ERM) principles remains limited. This reflects a gap between sector-specific compliance and a more holistic, organization-wide risk approach.

In this context, existing research on ISO 31000 often centers on theoretical models, best-practice guidelines, or industry-wide analyses, providing limited understanding of how

individual firms approach adoption challenges. To fill this gap, this study explores the implementation journey of XYZ Construction, offering detailed insights into the practical difficulties and benefits experienced. This case study aims to deliver actionable knowledge for construction companies striving to improve their risk management capabilities.

Objectives of the Study

This study seeks to achieve the following goals: first, to explore the challenges faced by a leading construction company, referred to as "XYZ Construction," in adopting ISO 31000 risk management standard; second, to identify the perceived benefits of ISO 31000 as reported by employees of XYZ Construction; third, to assess the extent to which these challenges influence the success of ISO 31000 adoption; Finally, the authors will offer insights and practical recommendations drawn from the study's results, encouraging XYZ Construction to apply them to enhance its risk management practices. These recommendations are intended to support the consistent application of ISO 31000 principles and to help build a company culture that values ongoing learning and continuous improvement. The study's insights will also benefit managers, employees, investors, and insurers who want to make more informed decisions when dealing with uncertainty. On top of that, this study adds to existing research and can be a helpful resource for anyone studying risk management in the construction industry.

Literature Review

Risks in Construction Projects

Risk and uncertainty are part of any construction project, and if not handled properly, they can seriously throw things off track. That is why risk analysis and management play such a crucial role in keeping projects on course. These tools help teams anticipate potential issues and stay aligned with key goals like sticking to the schedule, keeping costs in check, ensuring high quality, maintaining safety standards, and minimizing environmental impact (Banaitiene & Banaitis, 2012). Construction projects are exposed to various physical, operational, environmental, design, financial, political, legal, social, contractual, market, and logistical risks. These risks may include safety hazards, control challenges, and sometimes hidden opportunities (Elbashbishy et al., 2022; Hopkin, 2018). When not effectively managed, risks in large-scale projects can lead to serious consequences such as project delays, budget overruns, safety incidents, compromised quality, reputational harm, and prolonged timelines—ultimately threatening the project's success and sustainability (Berends et al., 2011).

Risk management is fundamentally about developing a solid game plan that aligns with a project's objectives while minimizing the likelihood and impact of things going wrong (Kendrick, 2015). As described by Okmen et al. (2024), implementing risk responses may involve a variety of strategies, such as accepting, avoiding, mitigating, transferring, sharing, retaining, or even financing specific risks. Research shows that construction firms frequently concentrate on operational risks, including cost overruns, supply chain issues, safety hazards, and scheduling delays (Gleißner & Berger, 2024; Soubra et al., 2025; Yousri et al., 2023; Okika et al., 2025). However, there tends to be less focus on strategic and enterprise-level risks, which, although less immediate, can have a far-reaching impact on long-term organizational sustainability and competitiveness (Sousa et al., 2012).

Theoretical Framework

Implementing ISO 31000 is not simply a technical adjustment; it represents a fundamental shift in how organizations perceive, manage, and embed risk within their decision-making processes and daily operations. To explore the enablers and barriers to such implementation, this study draws upon five key theoretical frameworks: Lewin's Change Management Model (1951), Kotter's 8-Step Change Model (1996), Human Capital Theory (Becker, 1993), Schein's Organizational Culture Theory (2010), and the Resource-Based View (RBV) Theory (Barney, 1991). Together, these frameworks provide a multi-faceted perspective for analyzing the dynamics of enterprise risk management (ERM) adoption.

Lewin's Change Management Model presents a foundational three-step process for organizational change: unfreeze, change, and

refreeze. In the context of ISO 31000, the unfreeze stage involves raising awareness about the importance of structured risk management, addressing knowledge and skills gaps, and securing leadership commitment. The change phase refers to the active implementation of ISO 31000 through training, cross-functional collaboration, and integration of risk assessment tools. Finally, refreezing involves embedding these practices into organizational routines to ensure long-term sustainability. Many organizations struggle with either insufficient readiness during the unfreezing phase or failure to institutionalize changes during refreezing, common reasons why ISO 31000 efforts stall or fade over time.

To expand on this foundation, Kotter's 8-Step Change Model provides a more detailed and action-oriented roadmap for managing change. It includes steps such as creating a sense of urgency, building a guiding coalition, forming a strategic vision, removing obstacles, generating short-term wins, and institutionalizing new approaches. When applied to ISO 31000 implementation, Kotter's model underscores the importance of active leadership, transparent communication, and early achievements that demonstrate the framework's value. For example, showcasing early improvements in compliance or stakeholder trust can build momentum and reduce resistance, while a visible guiding coalition can sustain commitment across departments.

While Lewin and Kotter focus on how change unfolds, Human Capital Theory explains why investing in people is essential to support that change. According to Becker (1993), an organization's success is largely shaped by the capabilities of its workforce. This theory reinforces the idea that ISO 31000 adoption depends heavily on targeted employee training, professional development, and knowledge transfer. When employees lack the necessary skills or understanding, they are less likely to apply the framework effectively, which in turn diminishes its intended value.

Schein's Organizational Culture Theory further highlights the deep-rooted influence of cultural values, beliefs, and behavioral norms on change initiatives. As Schein (2010) explains, if a new system such as ISO 31000 clashes with the existing organizational culture—particularly in sectors like construction that emphasize speed, informality, and project autonomy—it is likely to encounter resistance. Cultural misalignment can cause employees to perceive the framework as burdensome or irrelevant. Thus, successful adoption requires aligning ISO 31000's structured processes with the organization's day-to-day practices and shared assumptions.

Finally, the Resource-Based View (RBV) Theory adds a strategic dimension by asserting that sustainable competitive advantage stems from valuable, rare, and well-organized internal resources (Barney, 1991). From this perspective, successful ISO 31000 implementation requires sufficient allocation of key resources—financial, human, and technological. Even a well-designed risk framework will falter if the organization cannot support it. Thus, ISO 31000 adoption is not only a change initiative but also a strategic investment in building internal capabilities that contribute to long-term value creation.

Together, these five theories form the conceptual foundation of this study. Lewin and Kotter offer process-oriented models for guiding change, while Human Capital Theory and Schein's Cultural Theory provide insight into people and context. The RBV Theory connects these ideas to organizational strategy, highlighting the importance of leveraging internal resources to sustain risk management practices.

Pre-ISO 31000 Risk Management Practices

In the past, organizations commonly managed risks in isolated "silos," with areas such as insurance, foreign exchange, operations, credit, and commodities handled separately and lacking coordination (Fraser, Quail, & Simkins, 2021). Over the years, risk patterns in building projects have started to change with the digitalization revolution in sectors including artificial intelligence and big data; thus, the demand for new expansions in conventional risk management has developed (Chenya et al., 2022).

Significant events like the 2008 global financial downturn underscored the need for stronger risk management practices, prompting many organizations to move away from

isolated, department-specific methods toward enterprise risk management, which provides a more holistic and comprehensive approach to identifying and handling risks across the organization. Unlike the siloed approach, where departments manage risks independently and often lack coordination, Enterprise Risk Management (ERM) promotes collaboration and views risks from an organization-wide perspective, enabling more informed and unified decision-making. ERM is a system that helps organizations identify and manage different types of risks in a structured way. It aims to reduce financial losses and uncertainty. ERM also encourages seeing risks as chances to improve and gain an advantage over competitors. The COSO ERM Cube and the Governance, Risk, and Compliance (GRC) model are two well-established frameworks commonly used to guide Enterprise Risk Management (ERM) practices. The COSO Cube, developed by the Committee of Sponsoring Organizations, provides a structured approach to identifying, assessing, and managing risk. Meanwhile, the GRC model offers an integrated strategy to help organizations align governance and compliance efforts with risk management, ultimately promoting sustainable growth (COSO, 2004; Moeller, 2011; Connair, 2013, as cited in Kerstin et al., 2014).

Many firms have adopted ERM in response to compliance and corporate governance requirements. However, beyond regulatory drivers, organizations across various industries also implement ERM to achieve strategic and operational benefits (Pagach & Warr, 2011, as cited in Renault et al., 2016). These benefits include cost and loss reduction, more stable earnings, improved decision-making, increased profitability, clearer risk reporting, and more effective allocation of resources. ERM also strengthens management accountability, fosters leadership alignment, provides a competitive edge, enhances stakeholder satisfaction, and improves control over enterprise-wide projects. To ensure ERM is effective, it must be aligned with management teams across various business units. This helps ensure that each department understands its risk responsibilities. A major factor in ERM's success is its alignment with the organization's strategic goals. Embedding ERM into core business processes ensures that risks are addressed as close to their source as possible, enabling more effective responses (Smiechewicz, 2001; Truslow, 2003, as cited in Renault et al., 2016).

While enterprise risk management (ERM) offers significant strategic benefits, its implementation is often challenged by several internal and organizational barriers. Renault et al. (2016) identified key obstacles such as weak leadership support, shifting organizational priorities, and reluctance to address sensitive risks. Additional challenges include difficulties in risk quantification, inconsistent terminology, poor data quality, and limited resources. The study also noted factors like undervaluing ERM, inadequate training, a shortage of skilled professionals, and insufficient engagement from senior management. These issues—exacerbated by gaps in internal knowledge and expertise—can severely hinder the successful adoption of ERM. To address these challenges, ISO 31000 offers a globally recognized framework that reinforces and extends ERM principles. Developed by the International Organization for Standardization, ISO 31000 provides structured guidance applicable across industries, promoting consistent risk practices that support better decision-making and long-term value creation (ISO, 2018; Fraser & Simkins, 2016). The release of ISO 31000:2009 represented a major step toward establishing a unified and comprehensive framework for managing risk. Organizations began to adopt this international standard to establish consistent risk management frameworks across various sectors.

Overview of ISO 31000 Risk Management System

The initial version of ISO 31000 was introduced in 2007 and became effective in 2009. The most recent revision, ISO 31000:2018, was released in 2018 and has been effective since mid-2019. The guidelines offer a more comprehensive and detailed explanation of the risk management process within the framework (Leyronnas, 2022) and a clear and practical approach for identifying, analyzing, evaluating, managing, tracking, and communicating organizational risks (TopCertifier, 2025). The

ISO 31000:2018 risk management guidelines offer a universal method for addressing all types of risks, regardless of the industry or sector. They are designed to be applied across an organization's entire lifespan and can support decision-making at every level and in any activity. This flexibility allows organizations to adapt and integrate parts of the framework as required to suit their unique context. Managing risks is based on the principles, framework, and process.

Principles

The principles serve as the core basis for effective risk management and should be considered when developing the organization's risk management structure and procedures. They highlight what makes risk management truly effective and how it should be woven into every part of an organization. When the guidelines were updated in 2018, the goal was to make the framework clearer and more practical and simplify the structure to better reflect modern organizations' needs (Leyronnas, 2022).

Integrated: Risk management should be part of everything the organization does, not a separate task. It should be considered in all activities and decisions across the business.

Structured and Comprehensive: The process should be organized and thorough, covering all possible risks. It ensures that no risks are missed and that they are handled clearly and consistently.

Customized: Risk management should be customized to suit the specific needs, objectives, and challenges of each organization. Since risks vary across organizations, the approach must be adapted accordingly.

Inclusive: Everyone affected by or involved in the risks should be included in the process. It ensures that different perspectives and ideas are considered when managing risks.

Dynamic: Risk management should be flexible and continuously updated. The risk management process should adapt and respond to new risks as the business environment changes.

Best Available Information: Decisions should be based on the best and most accurate information available, but also recognize that some information may be incomplete or uncertain.

Human and Cultural Factors: The attitudes and behaviors of the organization's people and the company's culture impact risk management. These factors must be considered at every stage of risk management.

Framework

The ISO 31000 framework aligns with the Plan-Do-Check-Act (PDCA) cycle, a common model in management system designs. The framework is the backbone that helps an organization integrate risk management into its everyday operations and decision-making systems. It is not just about having a plan—it is about ensuring risk management becomes part of the organization. For this to truly work, support from everyone involved is important, especially from top management, whose commitment sets the tone for the rest of the team. Putting the framework into action means designing and applying the right systems, regularly checking how well they work, and making improvements along the way.

Leadership and Commitment: Top management is accountable for risk management, while oversight entities are responsible for supervising the risk management process and ensuring that possible risks are properly addressed in the organization's strategic planning and goal formulation.

Integration: Integrating risk management should be tailored to align with the organization's unique needs and culture. It must be embedded within the organization's core functions, such as its purpose, governance, leadership, strategic planning, objectives, and day-to-day operations, rather than treated as a standalone process.

Design: The design aspect focuses on establishing a strong foundation for integrated risk management, structured around five main areas: (1) understanding the organization and its environment, (2) defining the organization's commitment to risk management, (3) assigning appropriate roles and responsibilities, (4) allocating necessary resources, and (5) setting up effective communication and consultation mechanisms. According to the British

Standards Institution (2011), the framework must also ensure that individuals involved in risk management are competent and qualified through relevant education, training, or experience (p. 30).

Implementation: The framework's effective implementation relies on proactive stakeholder involvement and awareness. When involved, organizations can better manage uncertainty in their decision-making processes and quickly adjust when new risks or uncertainties arise.

Evaluation: Organizations should routinely evaluate the success of the risk management framework by measuring its performance against its stated objectives, implementation strategies, key performance indicators, and anticipated behaviors. This assesses the framework's ongoing appropriateness and efficacy in facilitating the attainment of organizational objectives.

Improvement: Organizations are expected to continually monitor and improve the risk management framework's suitability, adequacy, and effectiveness, including the extent to which risk management processes are systematically integrated into governance, strategy, and operational activities. This ongoing evaluation ensures the framework remains aligned with organizational objectives and responsive to emerging risks.

Process

The risk management process is a structured approach that applies policies, procedures, and practices to tasks such as communication and consultation, defining the context, and identifying, evaluating, addressing, monitoring, reviewing, documenting, and reporting risks. It lays out the steps an organization should follow to handle risks effectively, starting with clear communication among all stakeholders so that everyone understands the potential risks and how to address them. To begin with, the organization sets the boundaries for its risk management efforts by looking at what is happening inside the company, like its culture, structure, and resources, as well as outside influences, such as market trends or legal requirements. Once that is clear, the next step is to assess risks by spotting what could go wrong, figuring out how likely each risk is, and understanding its impact. After identifying the risks, the organization chooses how to respond—whether to completely avoid the risk, find ways to minimize it, transfer it to someone else (like through insurance), or accept it if it is manageable. Finally, monitor and review progress regularly with key team members to ensure transparency.

Communication and Consultation: This stage is crucial for fostering a clear and open dialogue between stakeholders and ensuring they fully understand the organization's risks. It emphasizes the importance of sharing clear and detailed information about potential risks, their possible impacts, and the strategies in place to manage or reduce them.

Scope, Context, and Criteria: This stage focuses on setting the foundation for an effective risk management process by defining the scope and understanding the internal and external contexts in which risks occur. Understanding the internal context involves evaluating factors such as the organization's culture, structure, capabilities, and resources, while the external context includes market conditions, regulatory environment, and socio-political influences.

Risk Assessment: Includes identifying, analyzing, and evaluating potential risks. The process begins by recognizing various risks, such as financial, operational, environmental, technological, or regulatory risks. After identifying them, the next step is to assess how likely they are to occur and the potential consequences if they do. Finally, the risks are reviewed based on specific criteria, such as the organization's ability to tolerate or manage those risks.

Risk Treatment: This stage is the next step after evaluating risks, where organizations decide the best approach to managing each one. They can avoid the risk entirely, reduce its probability or impact, transfer it to another party (such as through insurance), or accept it, especially when it is a low-priority risk or managing it would not be cost-effective.

Monitoring and Review: This stage involves tracking the effectiveness of risk management strategies over time. It entails routinely assessing whether risks are being managed well and whether any new ones are discovered.

Organizations must evaluate their risk management strategy to ensure it remains relevant and efficient, modifying it to consider evolving conditions.

Recording and Reporting: This stage involves keeping records of identified risks, actions taken, and results. It ensures that important information is well-kept and can be accessed when needed. "The risk register provides the list of risks, along with the results of risk analysis and risk response planning" (PMI, 2013, p.168). Reporting keeps stakeholders informed about managing risks, helps track progress, and enables informed decisions.

Recent research further supports the strategic value of ISO 31000 when effectively implemented. Purwanti et al. (2025) found that adopting ISO 31000's principles, framework, and processes significantly improved financial stability, operational efficiency, and regulatory compliance in Indonesian banking firms. Their findings suggest that ISO 31000 serves not only as a compliance mechanism but also as a catalyst for better strategic decision-making and enhanced stakeholder trust. Similarly, Al-Khazaleh et al. (2025) analyzed ISO 31000-related disclosures in insurance firms across Jordan and Palestine, revealing that larger firms were more likely to report comprehensive risk information, underscoring how organizational context influences adoption outcomes. Complementing these insights, Hussein and Jawad (2024) assessed ISO 31000 implementation within Iraq's Ministry of Interior, identifying partial compliance and gaps in communication, integration, and leadership engagement, highlighting the need for stronger organizational commitment. Contributing to this discussion, Albasyouni et al. (2025) examined how risk assessments are conducted in Egypt's construction sector. Their findings revealed that many local firms depend on personal experience and informal practices instead of systematic, formal risk procedures. This reliance often results in weak documentation and unstructured processes, limiting the effectiveness of risk management. Nonetheless, the study pointed to several improvement opportunities, such as establishing standardized protocols, enhancing record-keeping to support organizational learning, and tailoring risk management approaches to fit the specific cultural and operational context of each firm. Collectively, these studies reinforce the importance of internal capabilities, cultural alignment, and leadership support in maximizing the benefits of ISO 31000, aligning with the present study's focus on the challenges faced by construction firms in embedding the framework into their operations.

The existing literature on ISO 31000 highlights its potential to improve organizational resilience, enhance decision-making, and align risk practices with strategic objectives. However, recurring challenges such as limited awareness, cultural resistance, inadequate training, and weak leadership continue to hinder implementation. While frameworks and case studies guide technical compliance, few explore the human and organizational dynamics behind successful adoption. This gap calls for deeper insight into real-world obstacles and enablers. Therefore, this study aims to examine the challenges and perceived benefits of ISO 31000 implementation, using XYZ Construction as a case study, to understand the factors that influence adoption and develop practical recommendations grounded in change management theory.

Adoption of the ISO 31000 Risk Management Standard in XYZ Construction

XYZ Construction is a top-tier construction company in Qatar, recognized for completing numerous large-scale infrastructure and development projects. It remains a key contributor to advancing the goals outlined in Qatar National Vision 2030. Because of its scale, influence, and experience with major projects, the company is an ideal subject for this research into adopting the ISO 31000 risk management standard in Qatar's construction sector.

In Qatar, each building project is approached as a unique and temporary endeavor, aligning with the PMBOK definition of a project as "a temporary endeavor undertaken to create a unique product, service, or result" (PMI, 2013, p. 3). Every project is led by a project manager who is tasked with overseeing clear and attainable objectives and ensuring the pro-

ject is completed successfully within the approved scope, schedule, and budget. They supervise the complete lifecycle—from planning and design to procurement, construction, handover, and closeout. A specialized team usually oversees particular elements, including budgeting, scheduling, contract management, quality assurance, health and safety, and adherence to local rules and international standards. Projects also involve various external stakeholders who contribute valuable input and support at different stages. Their active involvement is essential to ensure that project outcomes align with the organization's broader goals and to maintain clear communication and engagement throughout the project lifecycle.

A large organization handling many capital projects, such as XYZ Construction, integrates risk management into its core activities rather than treating it as a separate task. Instead, it is fully integrated into project management practices and funding approval processes. Risk guidance is part of the overall project framework, not a standalone document. Project managers include risk information in a standardized format from the risk database when they make project funding decisions, ensuring it aligns with the financial data in the accounting system (British Standard International, 2011). Before implementing ISO 31000, the risk management approach at XYZ Construction was generally fragmented and inconsistent across industries without a unified national framework. It was often viewed narrowly as a health, safety, and environmental (HSE) responsibility or simply a contractual formality, rather than as a key strategic planning and decision-making component. Risk management practices were typically shaped by a combination of local norms, British standards such as BS 31100, and ad hoc methods developed to meet the needs of individual projects. In many cases, they relied on guidance from sources such as the PMI's PMBOK, contractual risk provisions embedded in FIDIC (International Federation of Consulting Engineers)-based contracts, Qatar Construction Specifications (QCS), and requirements set by major local authorities, including Public Works Authority (ASHGHAL) and KAHRAMAA (Qatar General Electricity and Water Corporation). These tools primarily focused on project-level risks and lacked a comprehensive, enterprise-wide perspective. They were often customized to meet each client's specific needs, making it difficult to maintain consistency and standardization across projects. XYZ Construction embraced ISO 31000 in 2019 to create a more streamlined and unified risk management system across its projects. This move has encouraged consistent practices, stronger leadership involvement, and better communication. Most importantly, it has helped embed a proactive mindset around risk, enabling the company to handle uncertainties more effectively and maintain stability in the face of challenges.

This study aims to investigate the challenges XYZ Construction faced in transitioning to ISO 31000, focusing on the difficulties of aligning its existing risk management practices with the new standardized framework. Additionally, the study seeks to identify the benefits of adopting ISO 31000, the factors that contributed to its successful implementation, and the key lessons learned, which can be applied to other organizations. By understanding these challenges and successes, the study provides valuable insights into how companies can effectively navigate the process of adopting international standards to enhance long-term risk management success.

Methodology

Research Design

The study used a quantitative and exploratory design with a survey questionnaire to gather data. This approach allowed for the systematic measurement of challenges, benefits, and lessons learned during XYZ Construction's adoption of ISO 31000. The quantitative design ensures the data is measurable, while the exploratory approach helps uncover new insights into the adoption process.

Research Environment

The research was carried out in Qatar, a Gulf nation in West Asia bordered by Saudi Arabia and the United Arab Emirates. As construction plays a central role in driving Qatar's economy and providing significant employment opportunities, this study

investigates how risk management standards—particularly ISO 31000—are being adopted within the country's construction sector amid rapid infrastructure growth.

Respondents

This study gathered responses from employees of XYZ Construction who were actively engaged in implementing and managing the risk management system across multiple projects. Participants represented various levels within the organization, including senior executives, middle managers, supervisors, and frontline staff. This mix of perspectives enhances the reliability and depth of the findings, supporting the study's overall goals. Using a convenience sampling technique, eighty (80) individuals were initially approached based on their accessibility and relevance to ISO 31000-related practices. However, only fifty-six (56) participants responded and completed the survey. This non-probability sampling method was considered suitable due to the exploratory nature of the study and its emphasis on practitioners directly involved in risk management implementation.

Instrumentation

The researchers utilized a structured survey instrument composed of closed-ended and open-ended questions to collect essential data regarding the challenges, perceived benefits of adopting ISO 31000, and lessons learned following its implementation. A 4-point Likert scale was used to quantify respondents' perceptions and experiences, allowing for statistical analysis of the correlation between organizational commitment and the successful adoption of the risk management standard.

Reliability Test

To ensure the quality and credibility of the survey instrument used in this study, tests for both reliability and validity were conducted. The instrument's reliability was evaluated using Cronbach's Alpha, a widely used statistical measure that checks the internal consistency or reliability of a survey (Cronbach, 1951). Cronbach's Alpha tells us how closely related a set of questions is as a group. A higher Cronbach's Alpha value means the survey items are more consistent and reliable in measuring the same idea or concept. The pilot test with a small group of eleven respondents produced a Cronbach's Alpha value of 0.98, indicating excellent reliability and placing it well above the acceptable threshold commonly used in social science research.

Validity Test

Validity was evaluated through content and face validity methods. Content validity was ensured by consulting risk management experts and academic professionals who reviewed the survey items to verify their relevance, clarity, and coverage of the key dimensions of ISO 31000 adoption. Minor revisions were made based on expert feedback to strengthen the instrument's accuracy. Face validity was established by conducting a pilot test with a small group of employees from XYZ Construction, confirming that the questions were understandable and interpreted as intended.

Data Collection and Treatment

Data were collected through a survey questionnaire that included closed-ended and open-ended items with predetermined response options. The questionnaire was created using Google Forms and distributed to eighty potential respondents via email, Facebook Messenger, and WhatsApp. A total of fifty-six respondents completed the survey. Upon collection, the responses were analyzed using mean scores for each item based on a 4-point Likert scale, with each option assigned a numerical value from 1 to 4. These scores, as outlined in Table 1, were used to interpret the level of agreement or disagreement with each statement. This approach allowed the researchers to quantify perceptions, identify trends, and draw meaningful conclusions regarding the adoption of ISO 31000.

Table 1: The Scale of the Level of Agreement or Disagreement on the Adoption Challenges & Perceived Benefits

Rating Scale	Scale Range	Response Category
4	3.26 - 4.00	Strongly Agree
3	2.51 - 3.25	Agree
2	1.76 - 2.50	Disagree
1	1.00 - 1.75	Strongly Disagree

Ethical Consideration

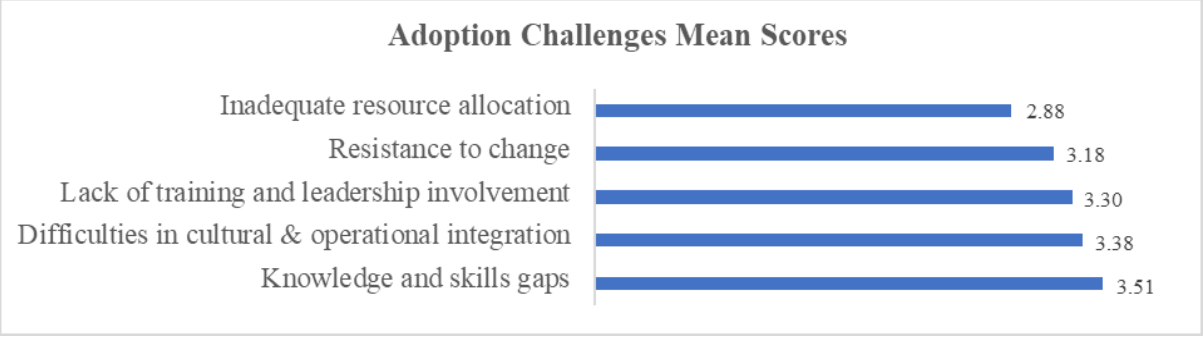
The ethical standards for research involving human beings were adhered to in this study. The study's goals were explained to participants before any data was collected, and they were reassured that their participation was completely voluntary and that they could leave at any moment without facing any repercussions. To make sure participants consented knowingly and voluntarily, informed consent was sought at the beginning of the questionnaire. Confidentiality and anonymity were strictly maintained throughout the research process. Responses were securely stored and used solely for academic analysis, without collecting any information that could identify individual participants. The study's results were presented in aggregate form to prevent the identification of any individual respondent. Additionally, the research did not involve any vulnerable populations or sensitive topics that could pose a risk or harm to participants. Academic experts reviewed and validated the study instrument to ensure that it was respectful, unbiased, and appropriate for the context.

Result and Discussion

Challenges faced by XYZ Construction

The first research objective is to explore the challenges faced by XYZ Construction in adopting the ISO 31000 risk management standard. Table 2 presents the survey results, which offer meaningful insights into the key challenges organizations faced during the adoption of new systems, technologies, or practices.

Table 2: Survey Outcomes Related to Adoption Challenges



Knowledge and skills gaps (Mean=3.51): This was identified as the most significant challenge, indicating that many employees lack familiarity with ISO 31000 and struggle to apply its concepts to real construction scenarios, such as safety risks or contract issues. Becker (1993), in his human capital theory, argues that an organization's effectiveness depends on the capabilities of its workforce. Without targeted training, teams remain reactive rather than proactive in managing risks. Bridging this gap requires aligning ISO 31000 principles with the practical demands of construction operations.

Difficulties in cultural & operational integration (Mean=3.38): Respondents agreed that XYZ's existing workflows and culture pose a

barrier to ISO 31000 adoption. In a construction environment focused on speed, cost, and informal problem-solving, formal risk procedures may be seen as unnecessary or disruptive. Subcontractors and rotating teams may also resist standardized practices that limit flexibility. This misalignment creates friction, as ISO 31000 requires a structured, collaborative approach. According to Schein's organizational culture theory (Schein, 2010), when new systems clash with existing values and norms, they are likely to face resistance, slowing down or even blocking implementation.

Lack of Training and Leadership Involvement (Mean = 3.30): Participants strongly agreed that ISO 31000 adoption is hindered by limited training and weak leadership support. Training, if provided, is often too generic and fails to address construction-specific risks. At the same time, passive leadership signals that risk management is not a strategic priority. This results in low employee engagement and reinforces the perception of ISO 31000 as a checklist rather than a value-adding process. According to Kotter's change management model (Kotter, 1996), successful change requires strong leadership, clear communication, and a committed guiding coalition—elements currently missing in XYZ's approach.

Resistance to Change (Mean = 3.18): Respondents noted moderate resistance to ISO 31000 adoption, often due to a preference for familiar routines and skepticism toward formal systems. Site supervisors and experienced workers may view new processes as inefficient or unnecessary. Poor communication about the benefits of proactive risk management further deepens this resistance. According to Lewin's change theory (Lewin, 1947), change requires "unfreezing" existing behaviors—something that hasn't fully occurred within XYZ. While not the most severe barrier, resistance remains a real obstacle, especially in teams with long-standing practices.

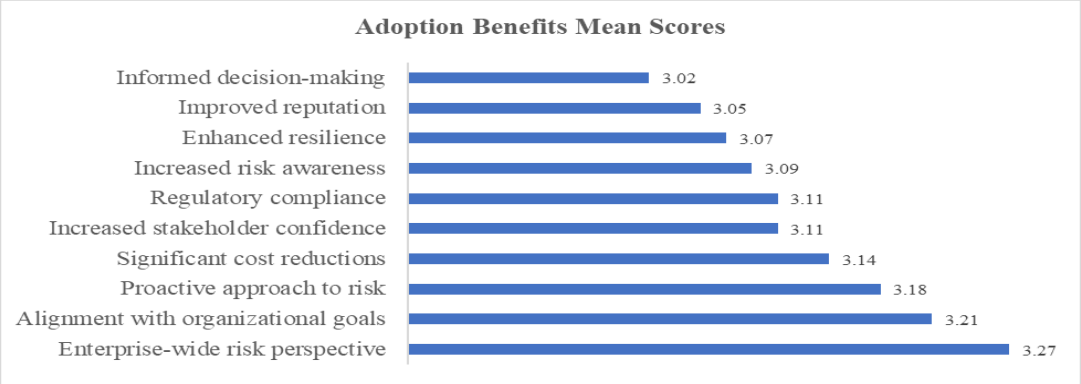
Inadequate Resource Allocation (Mean = 2.88): Although it ranked as the least significant challenge, insufficient resource allocation remains a concern. The Resource-Based View (RBV) Theory (Barney, 1991) emphasizes that the effective execution of strategic efforts depends on the availability of adequate financial, human, and technical resources. Without these, even robust frameworks such as ISO 31000 may struggle to achieve long-term success.

The survey reveals that XYZ Construction's adoption of ISO 31000 is most severely hindered by knowledge gaps, cultural misalignment, and leadership disengagement—all rated as "strongly agree" challenges. These issues are compounded by moderate resistance to change and resource constraints. To succeed, XYZ must prioritize context-specific training, align ISO 31000 with its operational culture through incremental integration, and secure leadership buy-in to drive accountability. By addressing these interconnected challenges comprehensively, XYZ can move from fragmented risk management practices to a robust, ISO 31000-compliant framework, strengthening long-term project success and promoting organizational sustainability.

Perceived Benefits by XYZ Construction Employees

A clear understanding of the expected outcomes is essential for effective risk management, as recognizing the potential advantages of a risk management initiative is a key factor in its success (Hopkin, 2018). The second objective of this research is to examine how employees at XYZ Construction perceive the benefits of the ISO 31000 standard. Table 3 presents the responses of participants regarding the key benefits observed following the implementation of ISO 31000 at XYZ Construction. It highlights how the standard has contributed to improved risk awareness, decision-making, and alignment with organizational goals.

Table 3: Survey Outcomes Related to Adoption Benefits



Enterprise-wide Risk Perspective (Mean=3.27): The adoption of ISO 31000 has enabled XYZ Construction to develop a unified, organization-wide understanding of risk, which respondents strongly agree is a significant benefit. In the construction industry, risks such as supply chain disruptions, safety incidents, and contractual disputes often span multiple departments and projects. ISO 31000's framework encourages cross-functional collaboration, ensuring that risks identified on-site are linked to strategic financial and reputational risks at the corporate level. For example, a delay caused by a subcontractor could now trigger proactive communication between project managers, procurement teams, and executives, fostering alignment and mitigating cascading impacts. This holistic perspective is particularly valuable in an industry where fragmented communication and siloed operations often amplify vulnerabilities.

Alignment with Organizational Goals (Mean=3.21): Respondents agree that ISO 31000 helps align risk management with XYZ's strategic objectives, such as timely project delivery, cost efficiency, and safety compliance. Construction firms frequently prioritize short-term operational goals, but ISO 31000 bridges this gap by embedding risk considerations into long-term planning. For instance, integrating risk assessments during the project bidding phase ensures that proposals account for potential delays or cost overruns, aligning with XYZ's goal of maintaining profitability. However, the moderate score suggests room for improvement, such as explicitly linking risk metrics to performance evaluations or corporate KPIs to strengthen this alignment further.

Proactive Approach to Risk (Mean=3.18): The adoption of ISO 31000 has shifted XYZ's risk management culture from reactive firefighting to proactive mitigation, though respondents view this as a moderate benefit. In construction, reactive practices—such as addressing safety violations only after incidents occur—are standard due to tight deadlines. ISO 31000 encourages preemptive actions, such as conducting risk assessments before breaking ground on a project to identify potential hazards. For example, anticipating seasonal rainfall could lead to revised timelines or resource allocations, reducing downtime. While the score reflects progress, deeper integration of predictive tools could enhance proactive capabilities.

Significant Cost Reductions (Mean=3.14): Respondents agree that ISO 31000 contributes to cost savings, though the impact is not yet transformative. In construction, unmanaged risks—such as rework due to safety failures or penalties for missed deadlines—often inflate budgets. By systematically identifying risks early, XYZ can avoid costly surprises. For instance, assessing supplier reliability during procurement might prevent delays that lead to overtime labor costs. However, the score suggests savings are incremental rather than groundbreaking, likely due to the upfront investments required for training and process changes. Over time, as ISO 31000 becomes ingrained, these savings could compound.

Increased Stakeholder Confidence (Mean=3.11) and Regulatory Compliance

(Mean=3.11): Both stakeholder confidence and regulatory compliance are perceived as moderate benefits. In construction, clients, investors, and regulators demand transparency and accountability. ISO 31000's structured risk reporting demonstrates XYZ's commitment to due diligence, which can enhance trust during bids or audits. For example, documenting compliance with safety standards reduces legal liabilities and reassures clients. However, the scores indicate that stakeholders may not yet fully recognize XYZ's efforts, highlighting a need for better communication of ISO 31000's role in safeguarding their interests.

Increased Risk Awareness (Mean=3.09) and Enhanced Resilience (Mean=3.07): Employees moderately agree that ISO 31000 has heightened risk awareness and organizational resilience. Construction projects are inherently volatile, but training teams to recognize and escalate risks, such as identifying unstable soil conditions early, builds a culture of vigilance. Enhanced resilience is evident in XYZ's improved ability to recover from setbacks, such as rerouting resources during a supply chain crisis. However, the scores suggest awareness is still evolving; targeted workshops or scenario-based drills could deepen engagement and preparedness.

Improved Reputation (Mean=3.05) and Informed Decision-Making (Mean=3.02): ISO 31000 has modestly bolstered XYZ's reputation and decision-making processes. A reputation for robust risk management can differentiate XYZ in competitive bids, particularly for high-stakes projects like infrastructure development. Meanwhile, data-driven risk assessments provide leaders with actionable insights, such as prioritizing investments in safety training over less critical upgrades. However, these benefits are still emerging; consistently publicizing ISO 31000 adherence in marketing materials and refining risk data collection tools could amplify their impact.

Multiple Regression Analysis

Multiple regression analysis was used in this study to explore how different factors—such as knowledge and skills gaps, difficulties in cultural & operational integration, lack of training and leadership involvement, resistance to change, and inadequate resource allocation—affect the perceived effectiveness of ISO 31000 implementation. This method is suitable because it allows the researcher to examine the impact of several variables at once and see which ones have the strongest influence. It also helps to control for the effects of other variables, providing a clearer picture of the relationships. Since ISO 31000 implementation involves many interconnected factors, multiple regression is an effective tool for understanding which areas matter most.

However, the analysis revealed that none of the independent variables had a statistically significant impact on the dependent variable. The p-values for all predictors exceeded the commonly accepted significance level of 0.05, with values ranging from 0.329 to 0.954, as shown in Table 4. This suggests that, within the scope of this study, the challenges identified—although acknowledged by participants—did not significantly influence perceptions of ISO 31000 adoption success.

Table 4: Regression Results Summary

No	Independent Variables	Coefficient	p-Value	Significance	Interpretation
	Intercept	*2.780*	*<0.0001*	Yes	Baseline level of the outcome variable when predictors are zero.
1	Knowledge and Skills Gaps	0.129	0.329	No	Positive but not significant effect.
2	Difficulties in Cultural & Operational Integration	0.047	0.649	No	Minimal impact; not statistically significant.
3	Lack of Training and Leadership Involvement	0.008	0.954	No	No measurable effect.
4	Resistance to Change	-0.036	0.774	No	Negative but insignificant effect.
5	Inadequate Resource Allocation	-0.061	0.563	No	Slight negative impact; not statistically significant.

This outcome presents several implications. First, it suggests that while employees recognize these barriers, they may not perceive them as directly undermining the implementation's effectiveness. This could be due to a variety of factors, including organizational efforts to comply with formal requirements, the presence of parallel systems that support risk management informally, or differences in how "success" is interpreted across roles. For instance, some respondents may equate success with documentation and certification, while others may evaluate it based on tangible improvements in risk handling on-site. Therefore, success may be perceived as being achieved despite persistent challenges.

Another explanation could be that ISO 31000 adoption success is driven by variables not included in the model. These may include factors such as change readiness, communication effectiveness, leadership commitment beyond policy, or the degree of employee involvement in the implementation process. Additionally, personal motivation, perceived organizational support, or even external pressures from clients or regulators could play mediating roles in shaping employees' views on success.

The non-significant findings also reflect the possible complexity and interplay among the variables studied. For example, lack of training and knowledge gaps often coexist and may jointly influence outcomes in a way that a linear regression model cannot fully isolate. This interconnectedness may dilute individual predictor effects, especially in smaller sample sizes. Moreover, the study's sample size (n = 56) may have limited the statistical power necessary to detect significant relationships.

Multicollinearity could also be a contributing factor. Given the conceptual overlap between variables such as leadership involvement, training, and resource allocation, their independent effects on ISO 31000 implementation success may have been suppressed in the regression model. Additionally, the use of self-reported survey data introduces the potential for response bias, particularly if participants feel pressure to report successful outcomes or lack sufficient information to evaluate organization-wide practices accurately.

These limitations suggest opportunities for future research. More comprehensive models that include possible mediators—such as employee engagement, risk culture maturity, or perceived management support—may provide deeper insight into the mechanisms influencing ISO 31000 adoption. Employing larger sample sizes and methods such as structural equation modeling could help address multicollinearity and better capture the complexity of interactions among variables. Longitudinal studies may also be valuable in tracking how perceptions and actual implementation outcomes evolve.

In conclusion, while the challenges identified through descriptive analysis were recognized by participants, their lack of significant predictive value in the regression model highlights the multifaceted nature of risk management adoption. Understanding ISO 31000 implementation requires not only identifying visible barriers but also exploring the underlying cultural, psychological, and organizational dynamics that influence how change is perceived and sustained.

Conclusion

This research offers both theoretical and practical insights into the application of ISO 31000 in the construction sector, focusing on XYZ Construction as a representative case. By exploring the perceived benefits and challenges of implementation, the study adds to the growing discourse on risk management practices in project-driven and high-risk environments. Although the use of convenience sampling and a modest sample size (n = 56) may limit the broader applicability of the results, the findings reveal useful trends and observations that can guide future research. It is suggested that further studies broaden the participant base to encompass diverse industries, organizational structures, and geographical regions to enhance understanding of risk management in varying contexts.

Despite these limitations, the study's findings offer concrete, evidence-based recommendations. Addressing the key challenges identified—such as knowledge and skills gaps, lack of leadership support, limited training, resistance

to change, inadequate resource allocation, and cultural misalignment—requires deliberate organizational investment in education, communication, and strategic alignment. The benefits reported by participants reinforce the importance of ISO 31000 as a tool not just for compliance but for enhancing resilience, operational efficiency, and stakeholder confidence. These findings support a shift from reactive risk practices to a more structured, forward-looking approach grounded in strategic management theory.

From a broader perspective, this study contributes to the academic discourse by incorporating five key theoretical frameworks—Human Capital Theory, Organizational Culture Theory, Lewin's Change Management Model, Kotter's 8-Step Change Model, and the Resource-Based View (RBV) Theory—to examine the barriers and enablers of ISO 31000 implementation. These perspectives offer a comprehensive lens for analyzing both the human and organizational factors that are often overlooked in technically focused risk management research. On a practical level, the findings can assist construction firms, project managers, and safety professionals in developing more effective and sustainable risk management strategies that align with their workforce capabilities, cultural environment, change readiness, and available resources.

Policy Implications

Given Qatar's ongoing development initiatives and increasing emphasis on national risk governance standards, this study also holds relevance for regulators and policymakers. The challenges observed in ISO 31000 implementation—particularly related to workforce readiness, leadership involvement, and cultural resistance—suggest a need for stronger policy support and industry-specific guidelines. Regulatory bodies in Qatar could consider embedding ISO 31000 principles into public-sector procurement standards, mandating minimum training requirements, or providing incentives for companies that demonstrate proactive risk management practices. Aligning national policy with international standards can further institutionalize risk awareness across sectors and contribute to Qatar's long-term resilience and sustainability goals.

Limitations

This study has some notable limitations that should be kept in mind when evaluating its findings. The use of convenience sampling means that not all employees had an equal chance to participate, which could result in sampling bias and limit how broadly the results can be applied beyond this group. Additionally, the exploratory design and modest sample size may reduce the robustness and generalizability of the conclusions. Furthermore, since the data were collected through self-reporting, there is a risk of bias or inaccuracies in participants' responses. Despite these constraints, the study still contributes valuable knowledge on ISO 31000 implementation that can inform both future studies and practical efforts.

Recommendation

Based on the challenges, benefits, and lessons learned, the following recommendations are made to ensure continued success and improvement in risk management at XYZ Construction:

Training and Development

Address knowledge and skills gaps: Invest in targeted training programs to address the prominent knowledge and skills gaps, ensuring that all employees—especially leaders—possess the expertise necessary to effectively support and manage risk.

Foster continuous training and development: Regularly update training programs and ensure ongoing development for employees involved in risk management. It will help maintain competence and ensure all team members are prepared to handle evolving risks.

Leadership and Culture

Enhance leadership involvement and support: Leadership commitment addresses the challenge of insufficient involvement and resource allocation, promoting alignment with organizational goals and proactive risk management.

Facilitate change management: Managing resistance supports smoother integration of risk processes, fostering an enterprise-wide risk perspective.

Integrate risk management into organizational culture: Ensure that risk management is fully integrated into day-to-day operations by involving all departments early and embedding risk principles into strategic decision-making. A strong risk-aware culture enhances organizational resilience, builds stakeholder confidence, and strengthens reputation.

Technology and Tools

Invest in risk management tools and systems: Prioritize investment in risk management systems and tools that enhance monitoring, reporting, and decision-making. These tools enable proactive responses to emerging risks and support effective risk management across projects, while also addressing resource gaps to improve cost efficiency and ensure regulatory compliance.

Customize risk strategies: Tailor risk management strategies to the organization's specific needs and challenges rather than relying on generic approaches. A more customized strategy will ensure better alignment with organizational goals and enhance overall effectiveness.

Collaboration & Communication

Promote cross-departmental collaboration: Align departments under a unified risk framework to promote efficiency, accountability, and stronger risk management outcomes. Encouraging cross-functional collaboration fosters a more integrated and practical approach, breaking down silos to enhance enterprise-wide risk perspective, boost stakeholder confidence, and support informed decision-making.

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