

# The role of enterprise risk management in achieving sustainable development goals: Insights from bibliometric and thematic analysis



Syed Muhammad Umer Saleem<sup>a</sup> | Che Azlan Taib<sup>a</sup> | Rosman Iteng<sup>a</sup>

<sup>a</sup>School of Technology Management and Logistics, College of Business, Universiti Utara Malaysia, Sintok, Malaysia.

**Abstract** This research aims to provide researchers with a comprehensive literature review while demonstrating how enterprise risk management led to the development of viable research avenues for future analysis and research. This research used the PRISMA review process and a meta-literature analysis to assess pertinent literature from the Scopus database, covering the period from 2001 to January 2025. The findings highlight valuable insights into the current state of enterprise risk management while identifying areas for future research to ensure more robust, contextually relevant frameworks for enterprise risk management globally. This study highlights the importance of aligning ERM with strategic objectives, emphasising the crucial role of top management in fostering a risk-aware culture, improving financial performance, and supporting long-term stability. This study is the first analysis and assessment of pertinent enterprise risk management research using the PRISMA review methodology and a meta-literature review approach. This is beneficial for researchers as it enables them to comprehend its development and direction readily.

**Keywords:** enterprise risk management, PRISMA, systematic literature review, meta literature review, sustainable development goals

## 1. Introduction

Enterprise risk management (ERM) is a comprehensive approach to managing organisational risks while identifying opportunities (Qazi & Simsekler, 2021). Its popularity has grown due to increasing business complexities and global economic crises (Horvey & Odei-Mensah, 2023). While ERM implementation presents challenges, it enhances decision-making, risk awareness, and organisational resilience (Alam et al., 2024). Key benefits of ERM include enhanced firm value, improved performance, and a competitive advantage (Naik & Prasad, 2021).

Enterprise risk management has witnessed a substantial increase in scholarly interest, as evidenced by the significant growth in publications over the years (Figure 1). While initial research on ERM was limited, there has been a marked rise in publications since 2001, indicating a growing recognition of its importance in organisational success. This upward trend highlights the growing importance of ERM in addressing the complex challenges and uncertainties that organisations face in today's dynamic environment. The increasing importance of enterprise risk management is evident in the growing number of publications from 2001 to 2025, as shown in Figure 1.

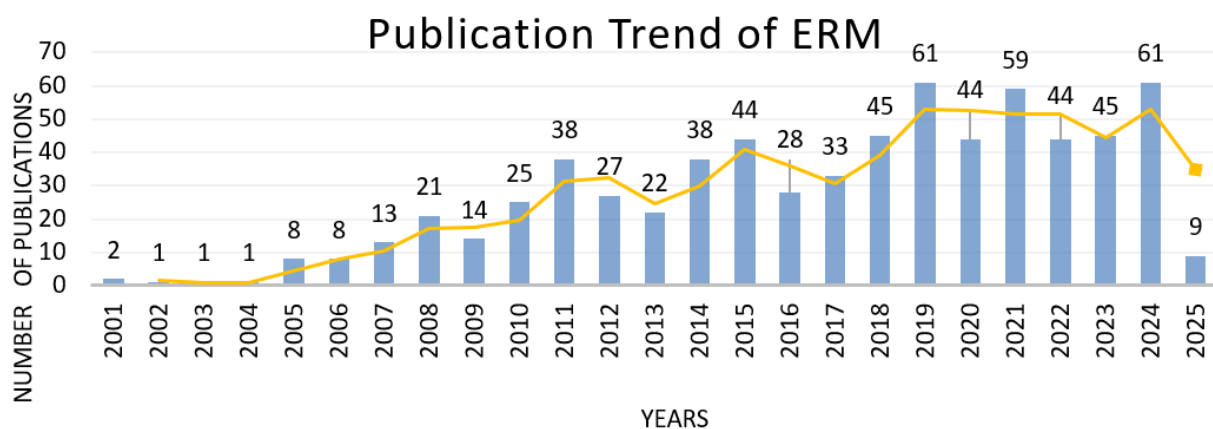


Figure 1 Growth of ERM Publications (2001-2025).



ERM is increasingly recognised as an important component of strategic management, particularly in the context of sustainability and achieving sustainable development goals. By integrating sustainability into corporate strategic frameworks, organisations can manage risks and enhance their competitive advantage. Strategic mechanisms that incorporate sustainability strengthen corporate strategic planning and profitability through innovative practices (Lazarenko et al., 2021). Furthermore, the resource-based view emphasises the importance of leveraging human resources, as strategic human resource management practices contribute positively to sustainable performance improvements, illustrating the relevance of ERM to overarching corporate strategies (Mwaura et al., 2022). Recent studies on strategic management frameworks suggest that addressing sustainability is not only an ethical consideration but also a crucial aspect of long-term business resilience and competitiveness. This highlights the importance of incorporating sustainability into companies' strategic outlooks as a means to effectively manage risks (Jaber et al., 2024; Karoney et al., 2024).

While the field of ERM has received significant attention, as evidenced by the growing number of publications shown in Figure 1, there is a lack of comprehensive reviews that synthesise the diverse range of research on this topic. Table 1 reveals that existing reviews in the ERM domain tend to focus on specific aspects, such as ERM for SMEs or its impact on firm performance, leaving a gap in understanding the broader implications of ERM across different industries and contexts. Moreover, most existing reviews are either general or focus on specific areas, limiting the development of a comprehensive understanding of ERM.

Therefore, this study aims to address this gap by conducting a combination of systematic literature review, meta-literature review, and bibliometric literature review. This approach will enable a thorough examination of the existing literature, the identification of key themes and trends and the formulation of future research directions. The goal is to provide policymakers and researchers with a comprehensive overview of ERM, enabling them to stay current with recent advancements and contribute to the ongoing development of this critical field.

**Table 1** Summary of Extant Reviews in the ERM Domain (2001–2025).

Sr	Author (Year)	Contribution	Method Applied
1	Masama et al. (2022)	Reviews existing literature on ERM for South African SMMEs, exploring the feasibility and challenges of their implementation.	Exploratory literature review with a qualitative research methodology
2	Horvey & Odei-Mensah (2023)	Reviews how ERM is measured and its impact on firm performance.	Systematic literature review
3	Crawford & Jabbour (2024)	Reviews ERM's effectiveness in managerial decision-making.	Systematic literature review
4	Gleißner & Berger (2024)	Proposing an integrated, decision-oriented ERM system to improve risk-informed strategic decision-making.	Systematic literature review
5	Elamir (2019)	Studied methodologies of managing risks in healthcare, contrasting traditional and enterprise risk management approaches and introducing the Bowtie methodology as a prospective risk assessment tool.	Critical review
6	Lewin (2006)	The study presents ERM as a holistic framework for civil engineers to improve business success.	General review
7	Olson & Dash Wu (2010)	This study reviews published approaches to supply chain risk management, categorising risk types and frameworks while addressing risk management challenges specific to China.	Systematic literature review
8	Wu & Olson (2011)	The study critiques an earlier model on ERM, extending analysis by proposing a more robust approach to evaluating vendor selection risks.	General review

### 1.1. Gaps in the Body of Extant Research

Identifying gaps in existing research is essential for advancing knowledge and understanding in any field. A systematic literature review can be a valuable tool for uncovering such gaps, allowing scholars to pinpoint critical research questions that remain unanswered and identify areas where further investigation is needed.

This study aims to address the following research questions: 1) What are the major research streams in the ERM literature? 2) What are the key elements and frameworks within ERM research? 3) What are the future research directions in the field of ERM? To answer these questions, this study will analyse the scope, quality and content of relevant articles, including the methods, theories and countries represented in the research. This analysis will involve examining the frequency distribution of articles by journals, journal impact factors, prominent theories and leading countries in ERM research. Thematic analysis will be used to identify key themes and trends in the literature.

It is important to note that simply identifying a gap in the literature does not necessarily mean it is significant. The gap must be relevant and potentially contribute meaningfully to the field. For example, if a particular phenomenon has been extensively studied in various contexts. In that case, the absence of research on that phenomenon in a specific industry or country may only be significant if there is a strong argument that existing knowledge may not apply in that new context.

## 2. Methodology

This study employs a two-part research methodology: a review protocol and a meta-literature review. The review process is divided into four stages: (1) adherence to the PRISMA review protocol, (2) development of the research question using the PICO framework, (3) implementation of systematic search strategies, and (4) integrated data abstraction and analysis.

### 2.1. The Review Protocol – PRISMA

This study employed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, as they provide a clear, transparent, and structured process for conducting systematic reviews (Ikram & Kenayathulla, 2023; Rethlefsen et al., 2021). These qualities are particularly valuable in business research, where clarity and consistency are important for making informed decisions and developing strategies (Tewari et al., 2025). PRISMA helps ensure that all steps in the review, from identifying to including studies, are well-documented and repeatable, reducing the risk of bias (De Marco et al., 2025). Additionally, it supports reviews that involve a wide range of topics and disciplines, including those focused on enterprise risk management, which is common in business, management and accounting domains (Page et al., 2021). The PRISMA statement facilitates a thorough and systematic search of relevant databases, enabling a comprehensive analysis of the literature on ERM.

### 2.2. Formulation of Research Question

The research question for this study was formulated using the PICO framework, a tool commonly used in systematic reviews to define a focused research area (Dhir & Gupta, 2021). The PICO framework comprises three components: Population, Interest, and Context. In this study, the "Population" refers to published articles, the "Interest" is enterprise risk management, and the "Context" is the business, management and accounting domain. These elements guided development of the research questions addressed in this review.

### 2.3. Systematic Search Strategies

The systematic search for relevant literature involved three key steps: identification, screening and eligibility assessment.

#### 2.3.1. Identification

A large pool of potentially relevant articles was compiled in the identification phase. This involved identifying keywords related to enterprise risk management (Ikram & Kenayathulla, 2022), searching for related terms and synonyms from various sources, and using these keywords to develop a comprehensive search query in the Scopus database. Scopus was chosen due to its extensive coverage and quality control measures, making it a reliable source for systematic literature reviews (Mehmood et al., 2022). The initial search using the keywords "enterprise risk management" in the article title yielded 693 articles (Table 2).

**Table 2** The Search String.

Database	Search String
Scopus	TITLE ("enterprise risk management")

#### 2.3.2. Screening

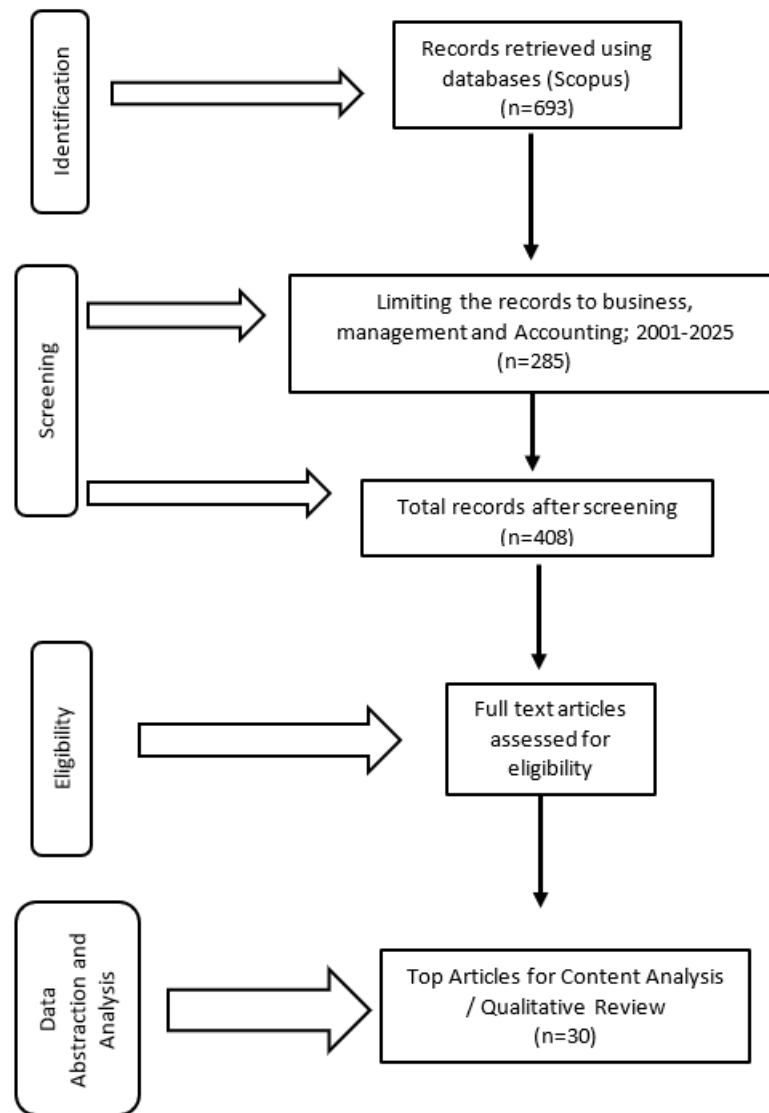
The screening stage aimed to remove irrelevant articles from the initial pool (Ikram et al., 2021; Mehmood et al., 2022). The screening criteria included subject area and year of publication. Only articles in the business, management, and accounting domains were retained, while publications prior to 2001 were excluded (Table 3). This exclusion was based on the premise that the field of ERM has undergone significant advancements in recent years, and including older studies could potentially skew the findings. This screening process resulted in the removal of 285 articles.

**Table 3** The Exclusion and Inclusion Criteria.

Criterion	Eligibility	Exclusion
Subject area	Business, Management and Accounting	Non-Business, Management and Accounting
Year	2001-2025	< 2000

#### 2.3.3. Eligibility

In the final stage of the selection process, the remaining 408 articles were rigorously evaluated to ensure they aligned with the study's objectives and research criteria. This involved a detailed examination of the titles, abstracts and main content of each article. After this eligibility screening, only 269 articles were retained for the data abstraction and analysis stage. Only top 30 highly cited articles were selected for the final data and analysis (Figure 2).



**Figure 2** Flow Chart of PRISMA.  
 Source: Ikram et al. (2021).

### 3. Results

This section summarises the key characteristics of the reviewed articles. To address the research question regarding the key elements of ERM, this study conducted a statistical assessment of various aspects, including the scope and quality of journals, predominant theories, most employed research methods and geographical distribution of the literature. Microsoft Excel was used for analysis.

#### 3.1. Scope and Quality of Journals

The distribution of articles across different journals is analysed based on their scope, SCImago Journal Rank (SJR) and Journal Impact Factor (JIF) as shown in Table 4. The articles are further categorised by publication period: before 2000, between 2001 and 2010, between 2011 and 2020, and after 2020. No articles were published before 2000 in the selected journals. Four articles were published from 2001 to 2010, reflecting an early stage of increasing academic interest in the field. The number of publications peaked between 2011 and 2020, with 22 articles appearing in high-ranking journals, indicating a significant expansion of research in enterprise risk management and related topics. After 2020, four articles have been published, showing continued but slightly reduced research activity in recent years.

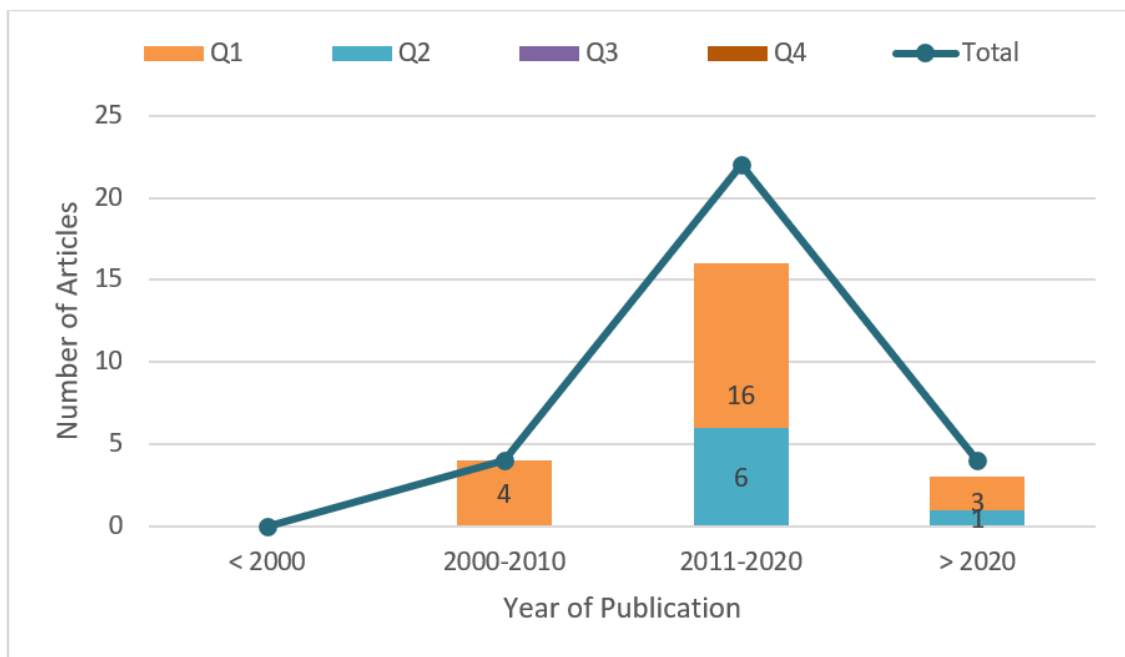
The selection of journals includes well-regarded sources such as the Journal of Risk and Insurance, Journal of Accounting and Public Policy, and Journal of Cleaner Production, which have high impact factors and strong academic reputations. The presence of Q1 and Q2 journals suggests that the research spans widely recognised and moderately ranked publications. The inclusion of journals specialising in accounting, risk management, corporate social responsibility, and operations research

highlights the multidisciplinary nature of this research area. Tracking the distribution of these publications over time helps identify shifts in research focus and highlight key contributions that have influenced the field. The high impact factors and rankings of these journals further demonstrate the quality and relevance of the studies included in this review.

**Table 4** Frequency distribution of articles by journals.

Journal	Rank	SJR	JIF	Years				Total
				≤ 2000	2001 - 2010	2011 - 2020	≥ 2020	
Journal of Risk and Insurance	Q1	1.203	2.26	0	0	3	0	3
Journal of Accounting and Public Policy	Q1	1.327	3.92	0	2	1	0	3
Accounting, Organizations and Society	Q1	2.208	4.41	0	1	1	0	2
Journal of Accounting, Auditing and Finance	Q2	0.854	2.27	0	0	2	0	2
Journal of Cleaner Production	Q1	2.058	11.08	0	0	2	0	2
Contemporary Accounting Research	Q1	3.086	4.16	0	0	2	0	2
British Accounting Review	Q1	5.79	1.366	0	0	1	0	1
European Accounting Review	Q1	1.264	4.17	0	0	1	0	1
International Small Business Journal: Researching Entrepreneurship	Q1	1.963	7.08	0	0	1	0	1
Journal of the Operational Research Society	Q1	1.045	3.96	0	1	0	0	1
Advances in Accounting	Q2	0.422	1.61	0	0	1	0	1
Corporate Social Responsibility and Environmental Management	Q1	2.201	11.53	0	0	1	0	1
International Journal of Production Economics	Q1	3.074	12	0	0	1	0	1
Journal of Contemporary Accounting and Economics	Q2	0.735	3.41	0	0	1	0	1
European Management Journal	Q1	1.785	7.95	0	0	1	0	1
Managerial and Decision Economics	Q2	0.555	2.95	0	0	1	0	1
Small Enterprise Research	Q2	0.512	2.28	0	0	1	0	1
Business Horizons	Q1	2.443	7.07	0	0	1	0	1
Management Accounting Research	Q1	1.276	5.00	0	0	0	1	1
Accounting forum	Q2	0.664	3.00	0	0	0	1	1
Risk Management	Q1	1.266	5.19	0	0	0	1	1
Management Research Review	Q1	0.778	4.69	0	0	0	1	1
<b>Total</b>				0	4	22	4	30

The analysis of the 30 reviewed articles reveals that they were published across 23 different journals, as shown in Figure 3. Among these, 24 articles (80%) were published in Scopus Q1 journals, reflecting a high standard of research quality. The remaining six articles (20%) were published in Scopus Q2 journals. Notably, no articles were found in Scopus Q3 or Q4 journals. The dominance of Q1 publications underscores the high quality of the articles included in this review.



**Figure 3** Frequency distribution of articles by ScImago and publication years.

### 3.2. Method Used by Reviewed Articles

Figure 4 presents the distribution of research methods applied in the reviewed studies. Most studies, accounting for 70% (21 articles), employed quantitative methods, indicating a strong preference for statistical and numerical analysis in enterprise risk management research. The studies employed qualitative methods in 27% (8 articles), emphasising an in-depth exploration of concepts, experiences, and frameworks related to knowledge and risk management. Only a small portion, 3% (1 article) of the studies utilised mixed methods, integrating both qualitative and quantitative approaches to provide a more comprehensive analysis.

The dominance of quantitative methods suggests that researchers primarily focus on measurable impacts of risk management strategies, such as financial performance and operational efficiency. However, the use of qualitative approaches highlights the importance of understanding contextual and organisational factors that influence ERM. The limited adoption of mixed methods may indicate challenges in integrating both research paradigms, but it also highlights opportunities for future studies to combine empirical data with in-depth insights.

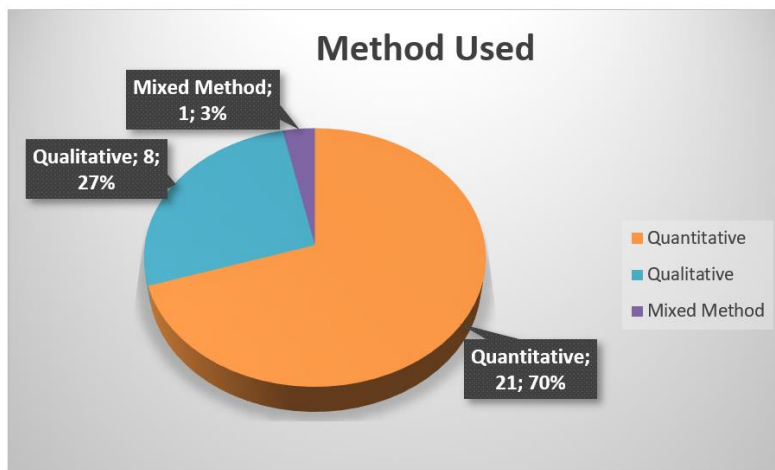


Figure 4 Articles frequency distribution by research methods.

### 3.3. Research Setting Used by Reviewed Articles

Figure 5 illustrates the distribution of reviewed articles based on their research settings across different countries. Most studies (10 publications) adopted a multinational research setting, indicating a broad, cross-border perspective on enterprise risk management. The United Kingdom accounted for eight studies, reflecting a strong research focus on ERM within this region.

Additionally, Pakistan, the Czech Republic, Australia, Netherlands, and Italy each had one publication, suggesting a limited but diverse geographic representation. The prevalence of multinational studies suggests that researchers aim to develop insights that are widely applicable rather than limiting their findings to specific national contexts. However, the relatively small number of country-specific studies highlights the need for more localised research to address unique regional challenges in risk management.

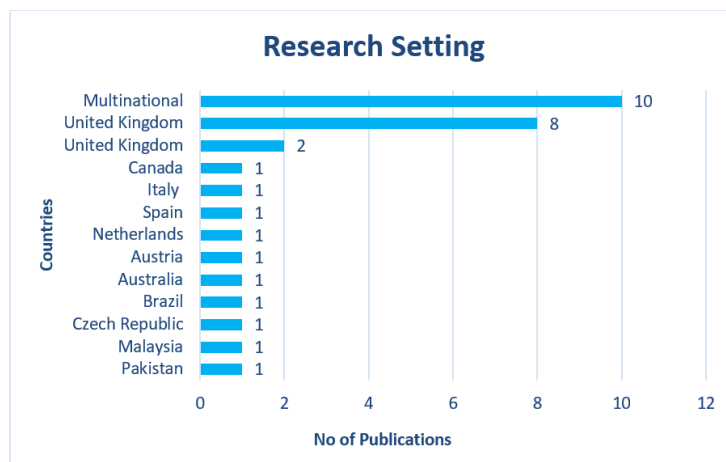


Figure 5 Articles frequency distribution by research setting.

## 4. Discussion on Research Topics in ERM

### 4.1. Enterprise Risk Management and Firm Performance

Several studies have highlighted the positive relationship between ERM implementation and firm performance, with various factors influencing its impact. Hoyt & Liebenberg (2011) identified a positive relationship between ERM implementation and firm value. Similarly, Beasley et al. (2005) emphasised that the involvement of a Chief Risk Officer and support from the CEO/CFO fosters ERM adoption, thereby enhancing firm performance. Furthermore, Gordon et al. (2009) found that ERM improves performance when aligned with contextual factors such as industry competition, firm complexity, and environmental uncertainty. When properly implemented, these studies underscore that ERM can lead to tangible benefits such as enhanced firm value and profitability (Beasley et al., 2005; Hoyt & Liebenberg, 2011; Gordon et al., 2009).

### 4.2. Factors Influencing ERM Implementation

Various internal and external factors shape ERM adoption. For instance, McShane et al. (2011) found that traditional risk management capabilities are positively related to firm value but did not show any additional benefits from ERM beyond TRM. In contrast, Baxter et al. (2013) emphasised that high-quality ERM programs lead to better market performance, particularly after financial crises, highlighting the importance of ERM quality over merely the presence of ERM systems. Moreover, Paape & Speklé (2012) pointed out that regulatory pressures and internal organisational characteristics significantly influence ERM adoption, indicating that the process is not only voluntary but can also be driven by external and internal forces (McShane et al., 2011; Baxter et al., 2013; Paape & Speklé, 2012).

### 4.3. ERM in SMEs and Strategic Management

The role of enterprise risk management in small and medium-sized enterprises (SMEs) has been a subject of particular interest. Brustbauer (2016) distinguished between passive and active ERM approaches in SMEs, suggesting that the type of approach affects the firm's strategic orientation. Passive ERM tends to lead to a defensive strategy, whereas active ERM facilitates an offensive strategy, enhancing competitiveness. Shad et al. (2019) extended this by proposing that integrating sustainability reporting with ERM in SMEs can moderate the relationship between ERM and performance, helping firms better manage risks and leverage business opportunities (Brustbauer, 2016; Shad et al., 2019). This underscores the dynamic nature of ERM in smaller organisations, where it can be both a risk mitigation tool and a driver of strategic success.

### 4.4. Role of Governance and Risk Committees in ERM Success

Governance structures play a crucial role in the effectiveness of ERM. Studies such as those by Malik et al. (2020) and Callahan & Soileau (2017) reveal that ERM effectiveness is strongly linked to governance, with Board-Level Risk Committees particularly enhancing the impact of ERM on firm performance. The relationship between ERM maturity and financial outcomes, such as return on assets and equity, has been highlighted, confirming that higher ERM maturity is positively associated with better financial performance. These findings emphasise that strong governance structures and dedicated risk committees are essential for maximising ERM's effectiveness (Malik et al., 2020; Callahan & Soileau, 2017).

### 4.5. Challenges and Institutionalisation of ERM

Despite its recognised benefits, ERM implementation presents challenges, especially when transitioning from traditional risk management. Fraser & Simkins (2016) discussed the difficulties organisations face in embedding ERM effectively, despite its being considered vital for corporate governance. The studies by Jabbour et al. (2025) and Syrová & Špička (2023) explore how organisational restructuring and the engagement of diverse professionals are crucial for institutionalising ERM within organisations. In particular, Syrová & Špička (2023) emphasised that organisational culture and strategic risk management performance are mediators between ERM and financial performance in SMEs, indicating that a cultural shift is often required to make ERM a core organisational function (Fraser & Simkins, 2016; Jabbour et al., 2025; Syrová & Špička, 2023). These insights underscore the complexities of embedding ERM deeply within organisational processes and governance structures.

## 5. Future direction of ERM research

### 5.1. Refining ERM Measurement and Data Collection Techniques

Several studies suggest improved methods for measuring the effectiveness of ERM and understanding its impact on firm performance. Hoyt & Liebenberg (2011) emphasised the importance of refining ERM firm identification and data collection techniques, proposing that future research should focus on measuring ERM usage intensity and conducting longitudinal studies. Similarly, Beasley et al. (2005) suggested examining the effectiveness of ERM in protecting or enhancing shareholder value, as well as measuring qualitative risks and correlations between various risk events. These future directions highlight the

need to refine the measurement and understanding of ERM across various contexts and industries (Hoyt & Liebenberg, 2011; Beasley et al., 2005).

### *5.2. Industry and Geographical Expansion of ERM Research*

Future research on ERM is expected to expand beyond current industry and geographical boundaries. Gordon et al. (2009) called for exploring the longitudinal effects and generalizability of ERM across different industries and countries. Shad et al. (2019) also proposed validating their conceptual framework in various sectors and regions to better understand how ERM functions in diverse contexts. This direction is crucial for broadening the applicability of ERM findings and assessing its impact on firm performance in diverse global environments (Gordon et al., 2009; Shad et al., 2019).

### *5.3. Integrating Social and Behavioural Aspects into ERM Research*

Understanding ERM's social and behavioural dimensions is increasingly recognised as an important area for future research. Arena et al. (2010) suggested exploring how rare, dramatic events influence managerial behaviour and the conceptualisation of uncertainty. Furthermore, the role of social networks and the competencies of chief risk officers in the ERM process were highlighted as areas warranting further exploration. This line of research seeks to move beyond technical ERM frameworks and investigate the human and social factors that influence risk management practices (Arena et al., 2010).

### *5.4. Deepening Understanding of ERM in SMEs*

The implementation of ERM in SMEs is another area that warrants further investigation. Brustbauer (2016) suggested that future research should focus on developing more detailed conceptualisations of ERM in SMEs, considering the unique challenges these smaller firms face. Syrová & Špička (2023) also highlighted research opportunities in understanding how organisational culture influences ERM adoption in SMEs, particularly in family businesses and those with low ERM adoption rates. This focus on SMEs is crucial given their significant role in global economies and their distinct operational dynamics (Brustbauer, 2016; Syrová & Špička, 2023).

### *5.5. Investigating the Integration of ERM with Other Management Systems*

Several studies propose further exploration of how ERM can be integrated with other management systems, such as corporate governance and performance evaluation frameworks. Huber et al. (2025) highlighted the integration of ERM with the balanced scorecard as an important area for future research, particularly in contexts where ERM is the anchor practice in decision-making. This could lead to a more holistic approach to risk management, improving decision-making processes by combining performance and risk data. Similarly, Cohen et al. (2017) recommended examining how ERM can aid auditors in risk assessments for financial reporting and internal control evaluations. This research direction aims to enhance the effectiveness and visibility of ERM by integrating it into broader organisational frameworks (Huber et al., 2025; Cohen et al., 2017).

### *5.6. Focusing on Long-Term Benefits and Sustainability of ERM*

Understanding the long-term sustainability and benefits of ERM adoption is another key area for future research. Callahan & Soileau (2017) emphasised the importance of examining the long-term benefits associated with ERM adoption, particularly as firms mature in their ERM processes. Similarly, McShane et al. (2011) suggested investigating whether a strong ERM culture constrains growth or leads to long-term stability. Research on the sustainability of ERM would help organisations better plan for the future and assess the lasting value of their risk management practices (Callahan & Soileau, 2017; McShane et al., 2011).

### *5.7. Exploring the Role of Trust, Training and Institutionalisation in ERM*

Jabbour et al. (2025) proposed further longitudinal studies on the institutionalisation of ERM, particularly in insurance companies. Their future research suggestions include exploring the role of trust in embedding ERM practices and how training can serve as a catalyst for change in this process. Similarly, Hayne & Free (2014) suggested focusing on hybridised professional groups and how institutional work can facilitate the broader adoption of ERM. These studies would provide valuable insights into the processes that facilitate or hinder the successful institutionalisation of ERM across different industries and contexts (Jabbour et al., 2025; Hayne & Free, 2014).

## **6. Conclusions**

This study has analysed the scope and quality of journals publishing enterprise risk management research, the methods employed in reviewed articles, and the research settings used. The findings highlight key trends in ERM research and its evolution over time. The distribution of articles across high-ranking journals, particularly in the Q1 and Q2 categories, demonstrates the strong academic credibility and impact of ERM related studies. The period from 2011 to 2020 witnessed the

highest volume of publications, indicating a peak in scholarly interest and research output in this field. Although there has been a slight decline in publications after 2020, the presence of ERM research in reputable journals underscores its continued relevance.

The analysis of research methodologies reveals a predominant reliance on quantitative approaches, with 70% of studies using statistical and numerical analyses to evaluate ERM effectiveness. While less common, qualitative methods contribute valuable insights into organisational and contextual factors influencing risk management practices. The limited use of mixed methods suggests an opportunity for future research to integrate qualitative and quantitative approaches, offering a more comprehensive understanding of ERM's impact across different industries and organisational settings.

Geographically, the research setting of reviewed studies reflects a strong multinational focus, with many studies analysing ERM in a cross-border context. The United Kingdom emerged as a significant contributor to ERM research, while studies from other countries were relatively limited. This suggests the need for more localised research to address country-specific challenges in risk management, particularly in emerging economies where ERM adoption may differ due to regulatory, cultural, or economic factors.

The reviewed studies demonstrate that ERM is vital in enhancing firm performance, with substantial evidence supporting its positive impact on financial outcomes and strategic decision-making. However, ERM adoption is influenced by multiple internal and external factors, including governance structures, regulatory pressures, and organisational culture. The roles of risk committees, board-level oversight, and the strategic alignment of ERM with business objectives were identified as key determinants of ERM success. Additionally, while ERM is widely recognised in large corporations, its application in SMEs remains a developing area that requires further exploration.

Despite its benefits, ERM implementation faces challenges, particularly in transitioning from traditional risk management approaches. Studies indicate that institutionalising ERM requires strong leadership support, organisational restructuring, and an adaptive corporate culture. Addressing these challenges will ensure ERM becomes integral to risk-aware decision-making and long-term business sustainability.

This study provides valuable insights into ERM research trends, highlighting its academic significance and practical implications. Future research should focus on bridging methodological gaps, expanding geographical coverage, and exploring the integration of ERM with emerging business trends, such as digital transformation and sustainability.

### 6.1. Implications

For managers and corporate decision-makers, the study's findings offer several actionable insights. First, organisations should prioritise the alignment of ERM with their strategic objectives to maximise its benefits. The active involvement of top management, including the Chief Risk Officer and Board-Level Risk Committees, is critical in fostering a risk-aware culture and ensuring ERM effectiveness. Second, firms should focus on the quality rather than just the presence of ERM systems, as robust ERM programs contribute to better financial and market performance. Additionally, for SMEs, adopting a proactive ERM approach can enhance competitiveness and resilience, particularly when integrated with sustainability practices. Moreover, companies facing regulatory pressures should view ERM not merely as a compliance requirement but as a strategic tool for value creation. Lastly, organisations should recognise that embedding ERM requires a cultural shift, emphasising continuous learning, employee engagement, and structural support. By addressing these managerial considerations, firms can fully leverage ERM to improve decision-making, enhance operational efficiency, and sustain long-term growth in an increasingly uncertain business landscape. This study also contributes to theory by highlighting the strategic role of ERM in supporting long-term business resilience and sustainability. Based on literature, it shows how integrating ERM into corporate strategy can enhance organisational adaptability, strengthen decision-making, and promote a proactive approach to managing complex risks.

### Ethical considerations

Not applicable.

### Conflict of Interest

The authors declare no conflicts of interest.

### Funding

This research did not receive any financial support.

### References

- Alam, M. R. U., Shohel, A., & Alam, M. (2024). Integrating Enterprise Risk Management (ERM): Strategies, Challenges, and Organizational Success. *Global Mainstream Journal*, 1(2), 10–19. <https://doi.org/10.62304/ijbm.v1i2.130>
- Arena, M., Arnaboldi, M., & Azzone, G. (2010). The organisational dynamics of enterprise risk management. *Accounting, Organizations and Society*, 35(7), 659–675. <https://doi.org/10.1016/j.aos.2010.07.003>



- Baxter, R., Bedard, J. C., Hoytash, R., & Yezegel, A. (2013). Enterprise risk management program quality: Determinants, value relevance, and the financial crisis. *Contemporary Accounting Research*, 30(4), 1264–1295. <https://doi.org/10.1111/j.1911-3846.2012.01194.x>
- Beasley, M. S., Clune, R., & Hermanson, D. R. (2005). Enterprise risk management: An empirical analysis of factors associated with the extent of implementation. *Journal of Accounting and Public Policy*, 24(6), 521–531. <https://doi.org/10.1016/j.jaccpubpol.2005.10.001>
- Brustbauer, J. (2016). Enterprise risk management in SMEs: Towards a structural model. *International Small Business Journal: Researching Entrepreneurship*, 34(1), 70–85. <https://doi.org/10.1177/0266242614542853>
- Callahan, C., & Soileau, J. (2017). Does Enterprise risk management enhance operating performance? *Advances in Accounting*, 37, 122–139. <https://doi.org/10.1016/j.adiac.2017.01.001>
- Cohen, J., Krishnamoorthy, G., & Wright, A. (2017). Enterprise Risk Management and the Financial Reporting Process: The Experiences of Audit Committee Members, CFOs, and External Auditors. *Contemporary Accounting Research*, 34(2), 1178–1209. <https://doi.org/10.1111/1911-3846.12294>
- Crawford, J., & Jabbour, M. (2024). The relationship between enterprise risk management and managerial judgement in decision-making: A systematic literature review. *International Journal of Management Reviews*, 26(1), 110–136. <https://doi.org/10.1111/ijmr.12337>
- De Marco, A., Berardi, D., Galuppi, M., & Lombardi, M. (2025). Quantitative Resilience Assessment on Critical Infrastructures – A systematic literature review of the last decade (2014-2024). *Journal of Safety Science and Resilience*. <https://doi.org/10.1016/j.jnlssr.2025.02.002>
- Dhir, S. K., & Gupta, P. (2021). Formulation of research question and composing study outcomes and objectives. *Indian Pediatrics*, 58(6), 584–588. <https://doi.org/10.1007/s13312-021-2246-y>
- Elamir, H. (2020). Enterprise risk management and bow ties: going beyond patient safety. *Business Process Management Journal*, 26(3), 770–785. <https://doi.org/10.1108/BPMJ-03-2019-0102>
- Farrell, M., & Gallagher, R. (2015). The valuation implications of enterprise risk management maturity. *Journal of Risk and Insurance*, 82(3), 625–657. <https://doi.org/10.1111/jori.12035>
- Florio, C., & Leoni, G. (2017). Enterprise risk management and firm performance: The Italian case. *British Accounting Review*, 49(1), 56–74. <https://doi.org/10.1016/j.bar.2016.08.003>
- Fraser, J. R. S. S., & Simkins, B. J. (2016). The challenges of and solutions for implementing enterprise risk management. *Business Horizons*, 59(6), 689–698. <https://doi.org/10.1016/j.bushor.2016.06.007>
- Gleißner, W., & Berger, T. B. (2024). Enterprise Risk Management: Improving Embedded Risk Management and Risk Governance. *Risks*, 12(12), 196. <https://doi.org/10.3390/risks12120196>
- Gordon, L. A., Loeb, M. P., & Tseng, C.-Y. C. Y. C. Y. C. Y. (2009). Enterprise risk management and firm performance: A contingency perspective. *Journal of Accounting and Public Policy*, 28(4), 301–327. <https://doi.org/10.1016/j.jaccpubpol.2009.06.006>
- Grace, M. F., Leverty, J. T., Phillips, R. D., & Shimp, P. (2014). The value of investing in enterprise risk management. *Journal of Risk and Insurance*, 82(2), 289–316. <https://doi.org/10.1111/jori.12022>
- Hayne, C., & Free, C. (2014). Hybridized professional groups and institutional work: COSO and the rise of enterprise risk management. *Accounting, Organizations and Society*, 39(5), 309–330. <https://doi.org/10.1016/j.aos.2014.05.002>
- Horvey, S. S., & Odei-Mensah, J. (2023). The measurements and performance of enterprise risk management: a comprehensive literature review. *Journal of Risk Research*, 26(7), 778–800. <https://doi.org/10.1080/13669877.2023.2208138>
- Hoyt, R. E., & Liebenberg, A. P. (2011). The value of enterprise risk management. *Journal of Risk and Insurance*, 78(4), 795–822. <https://doi.org/10.1111/j.1539-6975.2011.01413.x>
- Huber, C., Kraus, K., & Meidell, A. (2025). Integrating the balanced scorecard and enterprise risk management: Exploring the dynamics between management control anchor practices and subsidiary practices. *Management Accounting Research*, 66. <https://doi.org/10.1016/j.mar.2024.100924>
- Ikram, M., & Kenayathulla, H. B. (2022). A systematic literature review of student satisfaction: What is next? *International Journal of Advanced Research in Education and Society*, 4(4), 50–75. <https://doi.org/10.55057/ijares.2022.4.4.5>
- Ikram, M., & Kenayathulla, H. B. (2023). Unlocking the potential of education quality: A systematic literature review. *International Journal of Business and Technology Management (IJBTM)*, 5(1), 146–174. <https://doi.org/https://doi.org/10.55057/ijbtm.2023.5.1.15>
- Ikram, M., Ghavifekr, S., & Kenayathulla, H. B. (2021). Instructional leadership practices among school principals in Asian countries: a systematic review. *International Online Journal of Educational Leadership*, 5(1), 4–24.
- Jabbour, M., Cullen, J., & Crawford, J. (2025). Enterprise risk management: an institutional work perspective. *Accounting Forum*. <https://doi.org/10.1080/01559982.2024.2439640>
- Jaber, M., Sharabati, A., Nasereddin, A., & Masa'deh, R. (2024). The impact of globalization on the strategic management sustainability of the venture capital industry. <https://doi.org/10.20944/preprints202404.0873.v1>
- Karoney, F., Awino, Z., Aosa, E., & Wainaina, G. (2024). Strategic agility and sustainable competitive advantage: How to leverage top management team characteristics. *European Journal of Business and Strategic Management*, 9(4), 1-15. <https://doi.org/10.47604/ejbsm.3040>
- Lazarenko, Y., Garafonova, O., Marhasova, V., & Grigashkina, S. (2021). Gaining a competitive advantage through sustainability strategy: managerial applications for the mining sector. *E3s Web of Conferences*, 278, 03036. <https://doi.org/10.1051/e3sconf/202127803036>
- Lewin, C. (2006). Enterprise risk management and civil engineering. *Proceedings of the Institution of Civil Engineers - Civil Engineering*, 159(6), 4–9. <https://doi.org/10.1680/cien.2006.159.6.4>
- Lundqvist, S. A. (2014). An exploratory study of enterprise risk management: Pillars of ERM. *Journal of Accounting, Auditing and Finance*, 29(3), 393–429. <https://doi.org/10.1177/0148558X14535780>
- Lundqvist, S. A. (2015). Why firms implement risk governance - stepping beyond traditional risk management to enterprise risk management. *Journal of Accounting and Public Policy*, 34(5), 441–466. <https://doi.org/10.1016/j.jaccpubpol.2015.05.002>
- Malik, M. F., Zaman, M., & Buckby, S. (2020). Enterprise risk management and firm performance: Role of the risk committee. *Journal of Contemporary Accounting and Economics*, 16(1), 100178. <https://doi.org/10.1016/j.jcae.2019.100178>
- Masama, B., Bruwer, J. P., & Gwaka, L. (2022). The feasibility of implementing the Committee of Sponsoring Organizations of the Treadway Commission enterprise risk management framework in South African small, medium and micro enterprises: a literature review. *International Journal of Business Continuity*

- and *Risk Management*, 12(3), 208. <https://doi.org/10.1504/IJBCRM.2022.125288>
- McShane, M. K., Nair, A., & Rustambekov, E. (2011). Does enterprise risk management increase firm value? *Journal of Accounting, Auditing and Finance*, 26(4), 641–658. <https://doi.org/10.1177/0148558X11409160>
- Mehmood, W., Ahmad, A., Aman-Ullah, A., & Mohd-Rashid, R. (2022). Modern slavery: A literature review using bibliometric analysis and the nexus of governance. *Journal of Public Affairs*, 23(1), e2832. <https://doi.org/10.1002/pa.2832>
- Mehmood, W., Mohd-Rashid, R., Abdullah, Y., Patwary, A. K., & Aman-Ullah, A. (2022). Inclusive mapping of initial public offerings: a bibliometric and literature review study. In *Quality and Quantity*. Springer Netherlands. <https://doi.org/10.1007/s11135-022-01387-9>
- Mwaura, S., Kiruja, E., & Sagwa, E. (2022). Influence of strategic human resource management practices on performance of public universities in Kenya. *Journal of Human Resource and Leadership*, 7(2), 1–19. <https://doi.org/10.47604/jhrl.1679>
- Naik, S., & Prasad, C. V. V. S. N. V. (2021). Benefits of Enterprise Risk Management: A Systematic Review of Literature. *GATR Journal of Finance and Banking Review*, 5(4), 28–35. [https://doi.org/10.35609/jfbr.2021.5.4\(3\)](https://doi.org/10.35609/jfbr.2021.5.4(3))
- Nair, A., Rustambekov, E., Mcshane, M., & Fainshmidt, S. (2014). Enterprise Risk Management as a Dynamic Capability: A test of its effectiveness during a crisis. *Managerial and Decision Economics*, 35(8), 555–566. <https://doi.org/10.1002/mde.2641>
- Naseem, T., Shahzad, F., Asim, G. A., Rehman, I. U., & Nawaz, F. (2020). Corporate social responsibility engagement and firm performance in Asia Pacific: The role of enterprise risk management. *Corporate Social Responsibility and Environmental Management*, 27(2), 501–513. <https://doi.org/10.1002/csr.1815>
- Oliva, F. L. (2016). A maturity model for enterprise risk management. *International Journal of Production Economics*, 173, 66–79. <https://doi.org/10.1016/j.ijpe.2015.12.007>
- Olson, D. L., & Dash Wu, D. (2010). A review of enterprise risk management in supply chain. *Kybernetes*, 39(5), 694–706. <https://doi.org/10.1108/03684921011043198>
- Paape, L., & Speklé, R. F. (2012). The Adoption and Design of Enterprise Risk Management Practices: An Empirical Study. *European Accounting Review*, 21(3), 533–564. <https://doi.org/10.1080/09638180.2012.661937>
- Page, M. J., Moher, D., & McKenzie, J. E. (2021). Introduction to PRISMA 2020 and implications for research synthesis methodologists. *Research Synthesis Methods*, 13(2), 156–163. <https://doi.org/10.1002/jrsm.1535>
- Pérez-Cornejo, C., de Quevedo-Puente, E., & Delgado-García, J. B. (2019). How to manage corporate reputation? The effect of enterprise risk management systems and audit committees on corporate reputation. *European Management Journal*, 37(4), 505–515. <https://doi.org/10.1016/j.emj.2019.01.005>
- Qazi, A., & Simsekler, M. C. E. (2021). Quality assessment of enterprise risk management programs. *Journal of Risk Research*, 25(1), 92–112. <https://doi.org/10.1080/13669877.2021.1913633>
- Rehman, A. U., & Anwar, M. (2019). Mediating role of enterprise risk management practices between business strategy and SME performance. *Small Enterprise Research*, 26(2), 207–227. <https://doi.org/10.1080/13215906.2019.1624385>
- Rethlefsen, M. L., Kirtley, S., Waffenschmidt, S., Ayala, A. P., Moher, D., Page, M. J., & Koffel, J. B. (2021). PRISMA-S: An extension to the PRISMA statement for reporting literature searches in systematic reviews. *Systematic Reviews*, 10(39), 1–19. <https://doi.org/10.1186/s13643-020-01542-z>
- Romanosky, S., & Petrun Sayers, E. L. (2024). Enterprise risk management: How do firms integrate cyber risk? *Management Research Review*, 47(1), 1–17. <https://doi.org/10.1108/MRR-10-2021-0774>
- Shad, M. K., Lai, F.-W. F. W., Fatt, C. L., Klemeš, J. J., & Bokhari, A. (2019). Integrating sustainability reporting into enterprise risk management and its relationship with business performance: A conceptual framework. *Journal of Cleaner Production*, 208, 415–425. <https://doi.org/10.1016/j.jclepro.2018.10.120>
- Subramaniam, N., Wahyuni, D., Cooper, B. J., Leung, P., & Wines, G. (2015). Integration of carbon risks and opportunities in enterprise risk management systems: Evidence from Australian firms. *Journal of Cleaner Production*, 96, 407–417. <https://doi.org/10.1016/j.jclepro.2014.02.013>
- Syrová, L., & Špička, J. (2023). Exploring the indirect links between enterprise risk management and the financial performance of SMEs. *Risk Management*, 25(1), 1–27. <https://doi.org/10.1057/s41283-022-00107-9>
- Tewari, S. P., Kumari, V., & Misra, R. (2025). Synergizing flexible work arrangements with learning organizations: A bibliometric analysis and strategic research agenda. *Business Process Management Journal*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/BPMJ-09-2024-0842>
- Wu, D. D., & Olson, D. (2010). Enterprise risk management: A DEA VaR approach in vendor selection. *International Journal of Production Research*, 48(16), 4919–4932. <https://doi.org/10.1080/00207540903051684>
- Wu, D. D., & Olson, D. (2011). A note to “Enterprise risk management: A DEA VaR approach in vendor selection”: A response to Wei and Wang and model extension. *International Journal of Production Research*, 49(23), 7195–7203. <https://doi.org/10.1080/00207543.2011.564672>
- Wu, D., & Olson, D. L. (2010). Enterprise risk management: Coping with model risk in a large bank. *Journal of the Operational Research Society*, 61(2), 179–190. <https://doi.org/10.1057/jors.2008.144>