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MAPPING THE INTELLECTUAL STRUCTURE OF RISK MANAGEMENT AND FIRM VALUE RESEARCH: A SYSTEMATIC LITERATURE REVIEW AND BIBLIOMETRIC SYNTHESIS

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ABSTRACT

This study aims to map the intellectual structure and development of global research on the relationship between risk management and firm value through a Systematic Literature Review approach combined with bibliometric analysis. The study analyzed 25 high-quality journal articles selected from 809 Scopus-indexed publications using PRISMA guidelines and VOSviewer visualization techniques. The results show that firm value is a central axis of academic discourse, with enterprise risk management (ERM) evolving from a risk control function to a strategic value-creating capability. Bibliometric findings reveal a shift in research focus from corporate governance, CSR, and ESG approaches to digital transformation, artificial intelligence, and strategic risk management. The literature synthesis also confirms that ERM enhances firm value through financial performance, ESG performance, organizational resilience, and competitive advantage. This study contributes to the financial management literature by clarifying the strategic role of risk management in firm value creation

KEYWORDS: Risk Management; Enterprise Risk Management; Company Value; Bibliometric Analysis; Strategic Financial Management

INTRODUCTION

In recent decades, the concept of risk management has become a key pillar in maintaining the sustainability and stability of company value amidst global economic uncertainty. Market dynamics, financial volatility, and environmental and social crises are driving companies to manage risk more systematically and strategically. According to Li et al. (2024), ecological and carbon risks significantly influence corporate innovation investments, making risk management not only related to finance but also to long-term sustainability. With increasing awareness of environmental, social, and governance (ESG), research on the relationship between risk management and company value has experienced rapid development in an effort to understand how risk mitigation policies can improve corporate performance and reputation.

Research trends over the past decade have shown a shift in focus from traditional financial risk management to a more holistic and integrative approach. Several studies, such as Zhang and Zhao (2023), highlight the importance of a company's risk-bearing capacity through efficient supply chain and financing support. Furthermore, contemporary research also emphasizes the role of non-financial risks, such as reputational risk, technological risk, and environmental risk, which increasingly influence market value and investor perceptions of a company. This demonstrates a paradigm shift from risk management as a protective function to a strategic value creation tool.

The increasing complexity of the business environment is driving companies to develop adaptive, data-driven risk management systems. Companies are required not only to identify risks but also to anticipate their impact on company value. According to Horvey & Mensah (2023), a proactive approach to risk management can improve operational efficiency and strengthen investor confidence. This demonstrates that the relationship between risk management and firm value is dynamic and contextual, depending on industry characteristics, government policies, and the company's level of innovation.

Furthermore, globalization and digitalization have expanded the scope of risks faced by modern corporations. Cyber risks, supply chain disruptions, and geopolitical volatility have become new factors significantly impacting company value. A study by Dahmen (2023) shows that companies with robust risk management systems are able to maintain market value stability even amidst global crises. These findings reinforce the argument that risk management is no longer simply a control mechanism, but rather a value-added strategy oriented toward resilience and long-term competitiveness.

Despite the growing literature on the relationship between risk management and firm value, inconsistent results and methodological differences remain across studies. Some studies find a strong positive relationship between the two, while others show a weak or even negative effect. This raises the need for a systematic synthesis of existing research findings to gain a more comprehensive understanding. According to a preliminary bibliometric analysis of ScienceDirect data, publications on this topic have increased significantly since 2015, with peak growth occurring in the 2020–2024 period, particularly in economics and finance journals.

The Systematic Literature Review (SLR) approach with bibliometric synthesis is important because it allows researchers to map developments, trends, and collaboration patterns in research on risk management and firm value. Bibliometric analysis can identify the most productive authors, institutions, and countries, as well as emerging research topics. For example, recent research trends highlight the integration of enterprise risk management (ERM), sustainable innovation, and capital market performance. This indicates a conceptual evolution toward a multidisciplinary approach to the study of firm value.

Bibliometric methods also enable researchers to identify underexplored research gaps. For example, most research still focuses on large corporations, while studies on small and medium-sized enterprises (SMEs) are still limited. Furthermore, non-financial risk aspects such as social and environmental risks still require greater attention in the context of value creation. Therefore, bibliometric synthesis can help guide future research to be more relevant to contemporary business challenges.

Using the SLR and bibliometric approaches, this study seeks to present a comprehensive knowledge map of the relationship between risk management and firm value. This analysis will provide a theoretical contribution by strengthening the conceptual understanding of how risk management plays a role in determining firm value. Furthermore, the results also have practical implications for corporate decision-makers in designing risk mitigation strategies that can sustainably enhance firm value.

Methodologically, this study also makes an important contribution to the development of a literature-based evaluative framework, where each finding is systematically reviewed to ensure the validity and consistency of the results. The bibliometric synthesis approach allows for the integration of quantitative analysis (e.g., through citation mapping and co-occurrence analysis) and qualitative analysis of key themes. Thus, this study not only depicts a publication map but also provides an in-depth interpretation of the direction and trends of global research in this field.

This study aims to identify patterns in the relationship between risk management and firm value within a broader context, encompassing financial, sustainability, and innovation dimensions. With a deeper understanding of these dynamics, it is hoped that this research can form the basis for developing more strategic risk management policies oriented toward increasing shareholder value. The results of this study are expected to make a significant contribution to strengthening the academic literature and fostering evidence-based business decision-making.

METHODOLOGY

This study uses a Systematic Literature Review (SLR) approach combined with bibliometric analysis to map the intellectual structure and development of research on the relationship between risk management and firm value. This approach was chosen because it provides an objective and replicable synthesis of global literature developments, while also quantitatively identifying thematic patterns, temporal trends, and research gaps.

Research Questions (QS)

QS1.How has the intellectual structure of research on risk management and firm value developed in the global academic literature, and what key themes form the core of the discourse?

QS2.How does the shift in research focus occur from a corporate governance and sustainability approach to digital transformation and strategic risk management in the study of the relationship between risk management and firm value?

QS3.In the context of contemporary literature, to what extent does enterprise risk management play a role as a strategic determinant of corporate value through performance mechanisms, organizational resilience, and competitive advantage?

QS4.What are the main research gaps that still exist in the study of risk management and firm value, and how can future research directions be developed to address the complexity of global risk and firm value dynamics?

Data Sources and Search Strategy

Bibliographic data was collected from the Scopus database, selected for its reputation as a highly reputable international database with a wide range of reputable journals (Elsevier, Taylor & Francis, Emerald, Wiley). The search process was conducted over the period 2023–2025 to capture the latest research dynamics post-global disruption and the acceleration of digital transformation. Search keywords were systematically designed using the following Boolean combinations:

“risk management” AND “firm value”

“enterprise risk management” AND “firm performance”

“risk management” AND “corporate value”

The search was limited to English-language journal articles, of the article and review type, and published in the fields of economics, finance, management, and business.

Inclusion and Exclusion Criteria

To ensure data quality and relevance, this study applied strict selection criteria. Articles were included if:

- 1) Explicitly discusses risk management in the context of corporate value or performance,
- 2) Published in reputable journals and indexed by Scopus, and
- 3) Has complete metadata (title, abstract, keywords).

Conversely, articles were excluded if they were conference proceedings, editorials, non-academic documents, or had no direct relevance to the research topic. The selection process followed the PRISMA principles, including identification, screening, and eligibility stages.

Literature Selection Procedure (PRISMA)

The literature selection process in this study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and replicability. Initially, a literature search was conducted through reputable international databases, particularly Scopus (ScienceDirect), using keywords related to risk management, enterprise risk management, and firm value. The initial search process yielded 809 thematically relevant articles based on title, abstract, and keywords.

During the screening stage, duplicate articles were removed and an initial screening was conducted based on document type and language. Non-journal articles (such as conference proceedings, editorials, book chapters, and notes) and articles not in English were eliminated. After this process,

several articles were excluded for not meeting the basic inclusion criteria, significantly reducing the number of articles remaining for further evaluation.

The eligibility stage was conducted by reviewing the abstracts and full text of the articles to assess their relevance to the research focus, namely the relationship between risk management and firm value. Articles that only discussed risk management descriptively, focused on compliance without implications for firm value, or lacked a direct link to the context of firm performance and value were excluded. Through this rigorous selection process, only 25 articles were deemed to meet all inclusion criteria and were deemed relevant for further analysis in a systematic synthesis and bibliometric analysis.

Table 1. PRISMA

Identification	Records identified through database searching (Scopus/ScienceDirect): n = 809
Screening	Records excluded after title & abstract screening: n = 784
Eligibility	Full-text articles assessed for eligibility: n = 25
Included	Studies included in qualitative synthesis and bibliometric analysis: n = 25

Bibliometric Analysis Techniques

Bibliometric analysis was performed using the latest version of VOSviewer software to visualize the structure and dynamics of the literature. Data were analyzed using three main techniques:

1. **Network Visualization**
Used to map conceptual relationships between keywords (co-occurrence analysis), so that the main thematic clusters in risk management and firm value research can be identified.
2. **Overlay Visualization**
Used to analyze the temporal evolution of research topics based on publication year, it allows identification of shifts in research focus from conventional themes to contemporary issues such as digital transformation and artificial intelligence.
3. **Density Visualization**
Used to identify the level of research density and intensity on each theme, while also showing mature research areas and areas that still have potential for development.

Analysis and Synthesis Procedures

The analysis was conducted in stages, starting with metadata extraction, keyword processing, and bibliometric visualization. The visualization results were then interpreted qualitatively to build a conceptual understanding of the direction, patterns, and transformations of global research. This

approach enabled the integration of data-driven quantitative analysis and literature-based theoretical interpretation.

With this methodology, the research not only maps the publication landscape, but also presents a systematic and evidence-based scientific synthesis of how risk management has evolved as a strategic determinant of firm value in the context of the modern economy.

RESULTS AND DISCUSSION

RESULTS

The network visualization generated through VOSviewer demonstrates the intellectual structure of research on the relationship between risk management and firm value. This map plots the conceptual linkages between key topics in the academic literature, with each node representing a frequently occurring keyword, while the node size reflects its frequency. Different colors within each cluster indicate interconnected thematic communities within this field of study. Overall, this visualization confirms that the study of risk management and firm value is developing multidisciplinary, incorporating dimensions of finance, corporate governance, sustainability, and digital transformation as crucial elements in creating sustainable corporate value. The following are the results of the network visualization in this study:

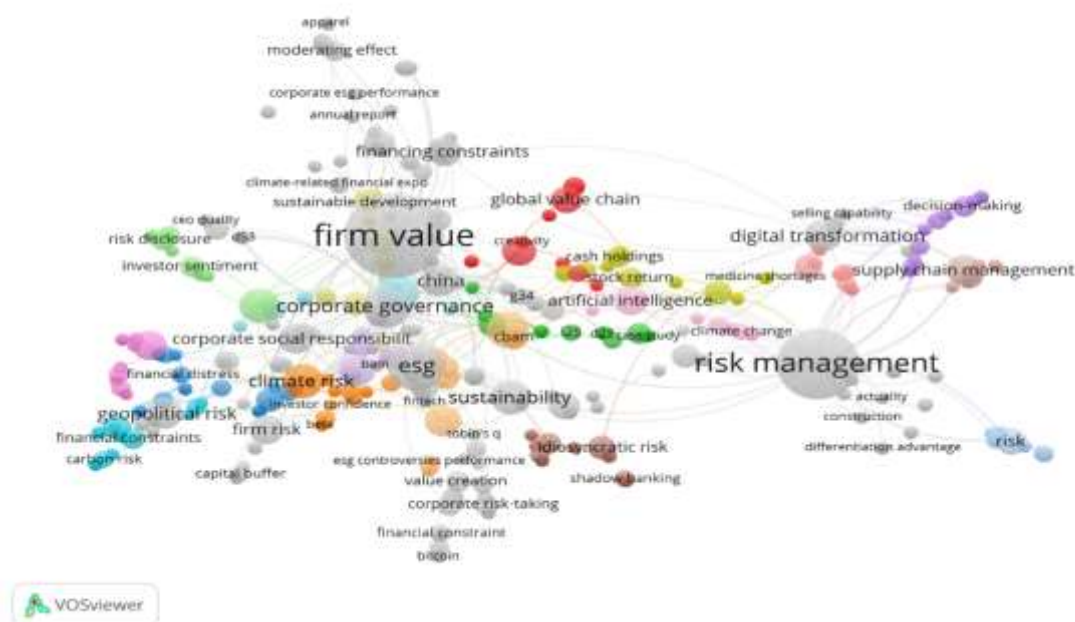


Figure 1 Network Visualization

The visualization overlay map generated through bibliometric analysis using VOSviewer provides a dynamic view of the temporal evolution of research related to risk management and firm value between 2023 and 2025. The color scheme on the map, ranging from purple (2023), green (2024), to yellow (2025), marks the emergence of research topics based on publication chronology and the direction of

development of global scientific discourse. This analysis is important because it reveals the shifting focus of the scientific community from classic themes such as corporate governance and ESG to new issues such as digital transformation, artificial intelligence, and supply chain resilience.

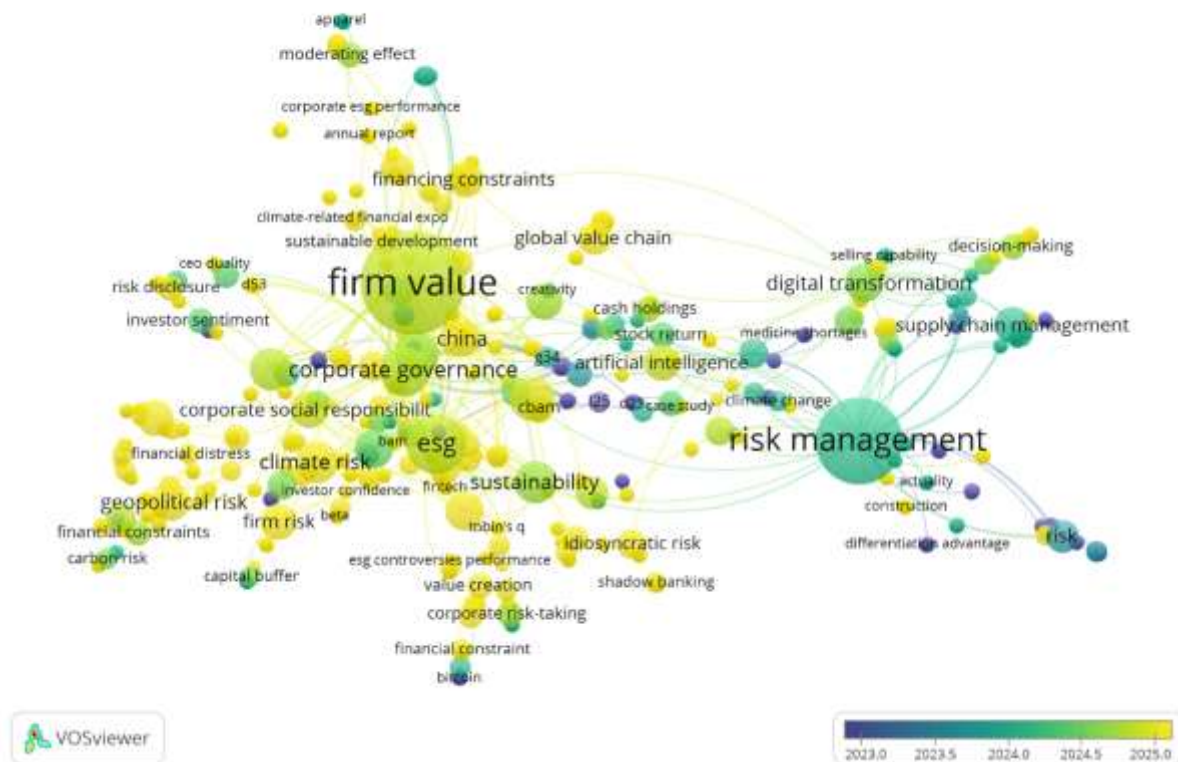


Figure 2. Overlay Visualization

In the initial phase (purple, circa 2023), the research focus remained on the fundamental themes of corporate governance and value, as reflected in the large clusters marked firm value, corporate governance, and ESG. Articles during this period generally examined how Environmental, Social, and Governance (ESG) impacts financial performance, climate risk, and a company's long-term value. Topics such as financial constraints, corporate social responsibility, and climate risk formed the basis of academic discussions, indicating that research remained firmly rooted in the perspective of sustainability-driven corporate value creation.

Entering 2024 (green), the research direction began to shift toward digital adaptation and strategic risk management. Terms such as digital transformation, artificial intelligence, and global value chain began to be closely linked to risk management and sustainability. This reflects a new awareness among academics that digital transformation is not simply technological innovation, but a crucial instrument

in risk mitigation and value creation. This multidisciplinary approach also demonstrates the emerging integration of fintech, AI analytics, and ESG reporting in modern enterprise risk management. In the latest phase (yellow, 2025), a more focused research focus on organizational resilience and agility emerged. Terms such as supply chain management, decision-making, and differentiation advantage demonstrate that recent research emphasizes the importance of strategic adaptability in addressing global risks, including geopolitical and climate crises. Thus, risk management is now understood not merely as a protective process but as a source of competitive advantage and long-term sustainability (risk-based strategic advantage).

The density visualization map provides an in-depth look at the intensity and density of research in the fields of risk management and firm value. In this visualization, areas with brighter shades of yellow to light green indicate topics with high frequency of occurrence and strong conceptual links in the literature. Conversely, areas with darker green to blue shades indicate topics that are relatively new or have received less attention in the scientific ecosystem. The color scheme on this map provides a clear representation of the intellectual concentration of the academic community, reflecting the main directions and potential for future research development.

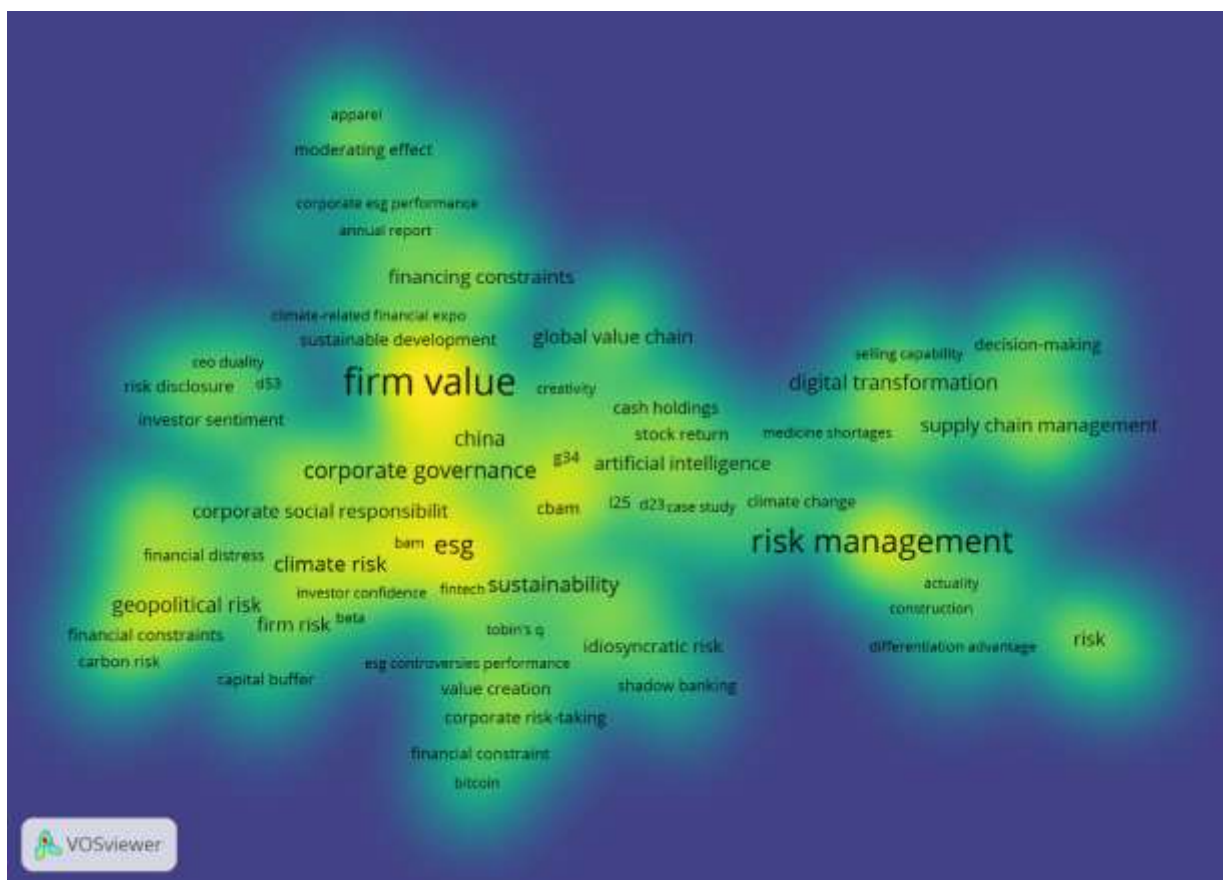


Figure 3. Density visualization

The analysis reveals that the two highest density centers are located around firm value and risk management. These two concepts form the core of scholarly discourse, connecting various dimensions such as corporate governance, ESG, sustainability, and digital transformation. The bright yellow area surrounding firm value indicates that this theme serves as the theoretical foundation most frequently referenced in research on firm performance and value. Literature in this area generally examines how corporate governance, risk management, and environmental sustainability influence long-term value creation. Thus, firm value serves as a conceptual axis that integrates the financial, social, and environmental dimensions in modern management studies.

Meanwhile, the brightly colored cluster surrounding risk management indicates the high relevance and dynamism of research in this field. In recent years, risk management is no longer viewed solely as a mechanism for managing uncertainty but has evolved into a strategic tool for creating competitive advantage and organizational sustainability. Themes such as supply chain management, decision-making, and digital transformation demonstrate that current research is moving toward a more adaptive and technology-driven approach. The integration of digital technology and artificial intelligence into risk mitigation processes demonstrates an epistemic transition in the approach to global enterprise risk management.

On the other hand, the green and blue areas surrounding themes such as climate risk, geopolitical risk, financial constraints, and sustainability indicate research areas with high potential for exploration. While these topics have not yet reached the same conceptual density as firm value and risk management, the consistent emergence of these terms demonstrates a trend toward more inclusive and interdisciplinary research. This indicates that researchers are beginning to highlight the importance of external factors such as climate change and geopolitical instability in influencing the dynamics of firm value and strategic decision-making.

The presence of themes such as digital transformation, artificial intelligence, and supply chain management in this relatively crowded area underscores the shift in scientific focus toward the era of economic digitalization and industrial sustainability. In this context, the collaboration between risk management and digital transformation is a promising research area. Academics and practitioners are expected to develop new theoretical frameworks that incorporate the dimensions of sustainability, operational efficiency, and system resilience to global disruption.

DISCUSSION

1. Intellectual Structure of Risk Management and Firm Value Research

The intellectual structure of research on risk management and firm value places firm value at the center of the discourse, with risk management playing a strategic role in corporate decision-making. The literature shows that risk management is no longer limited to uncertainty mitigation but has become integrated with innovation and sustainability strategies. Li et al. (2024) show that ecological risk management, particularly carbon risk, significantly impacts corporate innovation investment, thus

strengthening the argument that non-financial risks are an inherent part of long-term value creation mechanisms.

The operational and supply chain risk dimensions also form a crucial element in the intellectual fabric of this field. Zhang and Zhao (2025) assert that a firm's ability to bear risk through supply chain financing contributes to the stability of firm performance and value, reflecting a shift from an internal to an inter-organizational approach to risk management. Similarly, Guo et al. (2025) demonstrate that R&D subsidy policies and digital transformation play a significant role in managing supply chain risk and improving firm performance, highlighting the importance of institutional context and technological capabilities in shaping risk management effectiveness.

In addition to internal factors, the intellectual structure of research is also influenced by external risks and global uncertainty. Abbasi et al. (2025) found that climate risk increases the vulnerability of energy companies, but the development of fintech can serve as a mitigating mechanism that strengthens the resilience of corporate value. Meanwhile, Mitra et al. (2025) showed that geopolitical risk and economic policy uncertainty have a significant impact on corporate performance, expanding the scope of risk management to the macro level. Overall, the literature reflects the conceptual evolution of risk management as a strategic instrument that integrates innovation, digital transformation, and resilience to global uncertainty in corporate value creation efforts.

2. Shifting Research Focus: From Governance to Digital and Strategic Risk

Early literature consistently positions corporate governance, CSR, and ESG as key foundations for risk management and corporate value creation. Borghesi, Chang, and Li (2019) demonstrate that under conditions of high uncertainty, corporate governance and CSR have distinct effects on firm value, confirming that governance mechanisms serve as crucial risk mitigation instruments. This finding is reinforced by Farooq et al. (2025), who assert that the relationship between CSR and firm value is mediated by enterprise risk management and governance quality. Furthermore, Liu and Song (2025) expand on this perspective by demonstrating that ESG performance is closely related to a firm's risk level under environmental uncertainty, while He, Hao, and Lucey (2024) highlight that climate risk directly impacts a firm's green innovation cycle. Overall, this phase confirms the dominance of the governance-sustainability approach in the early discourse on risk management and firm value.

Entering the transition phase, the research focus has shifted to the role of digital transformation and risk analytics in improving risk management effectiveness and corporate performance. Xu, Lv, and Wang (2024) demonstrated that digital transformation improves corporate performance by strengthening enterprise risk management capabilities, marking a shift from a structural approach to a technology-based one. In the context of developing countries, Abdurrahman, Gustomo, and Prasetyo (2024) found that dynamic digital transformation capabilities, when integrated with governance, risk management, and compliance, contribute significantly to banking performance. These findings reflect

a shift in academic focus from static governance to adaptive mechanisms supported by digital technology.

In the latest phase, the literature increasingly emphasizes the use of advanced technologies and strategic approaches to address complex risks and global uncertainty. Nguyen et al. (2025) demonstrate that the use of artificial intelligence and blockchain in accounting can improve ESG performance, with risk management and environmental uncertainty playing a key role. Meanwhile, Nkobane (2025) emphasizes that the integration of artificial intelligence into enterprise risk management not only improves the accuracy of risk identification but also transforms risk management into a strategic function in decision-making. This shift marks a conceptual evolution from compliance-based risk management to strategic risk management oriented toward resilience, competitive advantage, and long-term corporate value creation.

3. Risk Management as a Strategic Determinant of Company Value

Contemporary literature consistently asserts that enterprise risk management (ERM) has evolved into a strategic determinant of firm value, rather than simply a risk control mechanism. Oreshile, Mahdzan, and Zainudin (2025) demonstrated that ERM quality significantly influences firm value through the perspective of corporate reputation risk theory, asserting that effective risk management strengthens stakeholder perceptions and market value. This strategic relationship is also reflected in the ESG context, where Ding, Cui, and Li (2024) found that risk management enhances ESG performance with financial performance as a mediator, thus creating firm value through the simultaneous integration of risk, sustainability, and financial performance. These findings confirm that ERM functions as a value-creating mechanism that operates through reputation, financial, and sustainability channels.

The strategic role of risk management is also evident in improving organizational performance and resilience across various corporate contexts. Navales and Badoy (2025) demonstrated that ERM implementation improved perceived organizational performance in small and medium-sized enterprises, indicating that ERM's strategic value is not limited to large corporations. In the context of the economic crisis, Raimi et al. (2024) demonstrated that ERM implementation supported by a deep learning model was able to more accurately predict risk exposure and firm value in a commercial bank in the United States during an economic downturn. This strengthens the argument that ERM serves as a data-driven strategic capability that helps companies maintain value under the pressure of high uncertainty.

Furthermore, the literature highlights that the strategic value of risk management is strengthened when linked to resilience and competitive advantage. Jegan Joseph Jerome et al. (2024) demonstrated that proactive, technology-based supply chain risk management directly contributes to achieving competitive advantage. Similarly, Monazzam and Crawford (2024) emphasized the critical role of ERM in building organizational resilience, while Eichholz, Hoffmann, and Schwering (2024) found that a risk management orientation and budget planning function strengthen organizational resilience

and competitive advantage during times of crisis. In the context of digital transformation, Xu, Lv, and Wang (2024) demonstrated that digitalization improves firm performance by strengthening ERM capabilities. Overall, this literature confirms that risk management has transformed into a strategic determinant of firm value, operating through resilience mechanisms, technological innovation, and long-term competitive advantage.

4. Research Gaps and Future Research Directions

Although the literature indicates that risk management has evolved into a strategic determinant of firm value, conceptual gaps remain in integrating various risk dimensions into a coherent value creation framework. Most studies still analyze risks separately, such as environmental, operational, or financial risks, without explaining how the interactions between these risks simultaneously impact firm value. Studies on carbon and climate risks (Li et al., 2024; Abbasi et al., 2025) and geopolitical risks and economic policy uncertainty (Mitra et al., 2025) emphasize the importance of external factors, but few studies integrate macro and micro risks into a comprehensive ERM model. Therefore, future research needs to develop an integrative framework capable of explaining the role of cross-level risk management in long-term firm value creation.

Empirical gaps are also evident in the limited research context. The current literature is still dominated by large companies and specific sectors, such as finance, energy, and high-tech manufacturing, while empirical evidence on small and medium-sized enterprises and across developing countries remains relatively limited (Navales & Badoy, 2025). Furthermore, although digital transformation and risk analytics have been recognized as important factors in enhancing ERM effectiveness (Xu et al., 2024; Horvey and Moloi, 2024; Guo et al., 2025; Ma et al, 2025), research examining how digital capabilities moderate or mediate the relationship between risk management and firm value remains underdeveloped. This opens up opportunities for further research that combines quantitative and contextual approaches to capture institutional variations and levels of digitalization across firms and countries.

Recent literature has highlighted the role of artificial intelligence, fintech, and data-driven technologies in strengthening risk management and organizational resilience (Raimi et al., 2024; Tyagi., 2024; Nguyen et al., 2025; Nkobane, 2025). However, most studies still focus on technical and operational benefits, without in-depth examination of the long-term strategic implications for firm value and competitive advantage. Therefore, future research should focus on developing a strategic risk management model that integrates ERM, digital capabilities, and organizational resilience as the primary foundation for corporate value creation amidst increasingly complex global uncertainties.

CONCLUSION

This study maps the intellectual structure and development of global research on the relationship between risk management and firm value through a Systematic Literature Review approach combined with bibliometric analysis. Based on an analysis of 25 selected articles from 809 identified

publications, the results show that firm value is the main axis of academic discourse, with risk management playing a strategic role in corporate decision-making. Recent literature confirms that risk management has evolved from an uncertainty mitigation function to a value creation instrument integrated with innovation, sustainability, and organizational resilience.

The results of the bibliometric mapping show a clear shift in research focus from corporate governance, CSR, and ESG approaches to more adaptive and technology-based approaches, such as digital transformation, artificial intelligence, and strategic risk management. The visualization analysis confirms that digital capabilities and risk analytics are increasingly positioned as enhancing the effectiveness of enterprise risk management in improving company performance and value. This shift reflects a conceptual paradigm shift, where risk management is no longer understood as a compliance function but rather as a strategic capability that supports competitive advantage and long-term sustainability.

Overall, the literature synthesis shows that enterprise risk management contributes to firm value through various mechanisms, including improved financial performance, reputation enhancement, ESG performance, and organizational resilience. The integration of ERM, digital transformation, and external risk management, such as climate and geopolitical risks, strengthens risk management's position as a strategic determinant of firm value amidst global uncertainty. These findings provide theoretical contributions to enriching understanding of the evolving role of risk management and offer practical implications for designing business strategies oriented toward resilience and long-term value creation.

RESEARCH LIMITATIONS

This study has several limitations that need to be considered when interpreting the results. First, the study only used journal articles indexed in reputable international databases and selected using PRISMA criteria, limiting the number of studies analyzed to 25. While this approach improves the quality and validity of the findings, the mapping results do not fully represent the full spectrum of research related to risk management and firm value, particularly studies published outside major databases or in the form of industry policy and practice reports.

Second, the systematic literature review and bibliometric analysis approach used is conceptual and descriptive synthesis, thus precluding direct causal testing of the relationship between risk management and firm value. Furthermore, most of the analyzed studies focus on large companies and specific sectors, such as finance, energy, and manufacturing, which limits the generalizability of the findings to the context of small and medium-sized enterprises or sectors with varying levels of digitalization.

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