

Mapping the Financial Risk Management Landscape: A Bibliometric Analysis of Recent Trends and Influential Contributions

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ABSTRACT

This bibliometric analysis explores recent trends and influential contributions in financial risk management, shedding light on thematic clusters, keyword occurrences, and highly cited works. The analysis encompasses a wide array of literature, ranging from the integration of risk considerations into broader corporate strategies to the impact of technological advancements on risk management practices. Thematic clusters reveal the interconnectedness of business practices, corporate social responsibility, and risk management, while keyword occurrences highlight dominant themes like financial performance and credit risk management. Highly cited works by notable authors provide foundational insights into risk management for financial institutions, emphasizing liquidity risk, corporate governance, and the integration of theoretical frameworks with practical applications. The synthesis of these findings offers a comprehensive understanding of the evolving landscape of financial risk management, guiding researchers, practitioners, and policymakers in navigating the complexities of risk in contemporary financial contexts.

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1. INTRODUCTION

Effective financial risk management is crucial in the dynamic and complex landscape of financial markets [1]. Financial markets are characterized by complexity and uncertainty, exposing businesses and investors to various risks [2]. To ensure the stability and sustainability of economic entities, it is necessary to keep up with current knowledge and theories related to financial markets [3]. Additionally, the analysis of the underlying dynamics of financial markets using recurrence-based measures can capture

the nature of transitions and provide insights during periods of crisis or significant events [3]. The non-linear and unpredictable nature of financial markets makes it challenging to predict future price movements, emphasizing the need for innovative approaches such as the Spatiotemporal Transformer-LSTM model for stock movement prediction [4].

As we enter the 21st century, the understanding and mitigation of financial risk has become more complex and requires continuous scientific inquiry [5]. The global financial crisis and subsequent events have highlighted the need for a more pluralistic

approach to research, incorporating a wide range of scientific experiences [1]. Traditional risk management models and tools have proven inadequate in projecting and managing risk today [6]. The evolution of financial risk management has been influenced by crises, technological developments, and globalization [7]. Moreover, the cognitive disconnect between environmental risk and financial risk in current frameworks poses challenges to sustainability and global goals [8]. Events in the 21st century, including scandals and failures in the financial industry, have further emphasized the importance of financial risk management. To navigate the complexity of financial risk in the 21st century, it is imperative to adopt new approaches, such as agent-based modeling, network analysis, and laboratory experiments, to understand and quantify risk. The background to financial risk management is characterized by the interconnectivity of the global economy, rapid technological advancements, and an increasingly complicated financial ecosystem.

In today's complex business landscape, organizations face diverse and interrelated risks that demand a deep understanding and appropriate response to mitigate potential adverse impacts. The financial crisis of 2008 and subsequent market turmoil highlighted the importance of a strong risk management strategy in maintaining financial stability [9] [10]. Risk management practices and corporate hedging strategies are crucial in achieving financial stability and resilience for organizations [11]. Comprehensive risk identification, assessment, and mitigation are necessary to navigate uncertainties and capitalize on opportunities [12]. Enterprise Risk Management (ERM) is discussed as a holistic approach that considers the interdependencies and cumulative effects of risks across functional areas and business units [13]. Additionally, a better understanding of the sources of risk through economic factor models can lead to more resilient portfolios and favorable outcomes. Overall, proactive risk management and

corporate hedging strategies are essential in safeguarding organizations' financial stability, ensuring resilience, and facilitating informed decision-making in an ever-changing business environment.

2. LITERATURE REVIEW

2.1 Evolution of Financial Risk Management Research

The evolution of financial risk management research has expanded to encompass a broader array of risks and their interconnectedness. Early research primarily focused on market and credit risk, but the discipline has since grown to include systemic risk, interconnectedness among financial institutions, and the impact of macroeconomic factors on overall financial stability [14]. The 2008 financial crisis prompted a reevaluation of risk management practices and the development of more sophisticated models [15]. Post-crisis research has also explored the role of technology in financial risk management, with advancements in data analytics, artificial intelligence, and machine learning offering new tools for risk assessment and decision-making [15]. Additionally, researchers have investigated the integration of non-financial risks, such as environmental, social, and governance considerations, into traditional risk management frameworks [16].

2.2 Challenges and Criticisms in Financial Risk Management Research

Financial risk management research faces challenges and criticisms due to several factors. The reliance on quantitative models, especially during periods of extreme market volatility, has been questioned as it may not adequately capture tail risks [17]. The occurrence of "black swan" events, characterized by their low probability and high impact, poses challenges for traditional risk models [18]. Additionally, the dynamic nature of financial markets requires continuous adaptation of risk management strategies [19]. The rapid pace of technological innovation introduces new risks, such as cybersecurity threats, that may not be

adequately addressed by existing frameworks [20]. Critics argue that a more comprehensive understanding of human behavior and psychological factors is needed in financial risk management [5]. Behavioral finance has emerged as a complementary field, exploring the psychological biases and heuristics that can lead to suboptimal risk management practices.

2.3 Integration of Sustainability in Financial Risk Management

In recent years, there has been a growing recognition of the need to integrate sustainability considerations into financial risk management. This is driven by the understanding that environmental and social factors can have a material impact on financial risks. Researchers have been exploring the incorporation of Environmental, Social, and Governance (ESG) criteria into risk assessment models, aligning with the shift towards sustainable and responsible investment practices in the financial industry. There is also an increasing awareness of the potential impact of climate change on financial markets, leading to the development of climate risk assessment tools. These tools aim to understand the linkages between climate-related risks, such as physical risks and transition risks, and their implications for financial stability [21][17][22].

3. METHODS

The research methodology used in this study involves systematically collecting relevant literature on financial risk management. To ensure a comprehensive overview of recent trends and influential contributions, searches will be conducted on major academic databases, including Scopus, and Web of Science. The search parameters were determined to cover the past decade, to ensure a focus on recent developments in the field. Keywords such as "financial risk management", "risk assessment", "risk mitigation", and "risk modeling" will be used to identify articles relevant to the research objectives. Inclusion criteria include scholarly articles, reviews, and conference papers that

specifically address financial risk management and were published within the specified timeframe with the help of Publish or Perish (PoP) and Mendeley Desktop accessed on November 29, 2023. Table 1 shows the research data matrix.

Table 1. Research Data Metrics

Publication years:	1976-2024
Citation years:	47 (1976-2024)
Papers:	980
Citations:	49822
Cites/year:	1060.04
Cites/paper:	50.84
Cites/author	28829.47
Papers/author	582.81
Authors/paper:	2.24
h-index:	97
g-index:	197
hI,norm:	77
hi,annual:	1.64
hA-index:	27
Papers with ACC >= 1,2,5,10,20:	734,544,287,145,61

Analisa Data

Bibliometric analysis is a powerful method for quantitatively and qualitatively assessing the structure and impact of scientific literature [23]. It involves analyzing key measures such as the number of citations, joint citation analysis, authoring patterns, and keyword analysis [24] [25] [26] The number of citations is used to measure the impact of a publication and its influence within the academic community [27]. Joint citation analysis helps map relationships between different publications and authors, revealing the intellectual structure and influential works in the field. Analyzing authoring patterns helps identify productive authors and collaborative networks in specific research areas, such as financial risk management. Keyword analysis allows for the exploration of evolving themes and areas of interest in current research. Overall, bibliometric analysis provides valuable insights into the structure and trends of scientific literature, aiding in the identification

of research gaps and potential future research directions.

4. RESULTS AND DISCUSSION

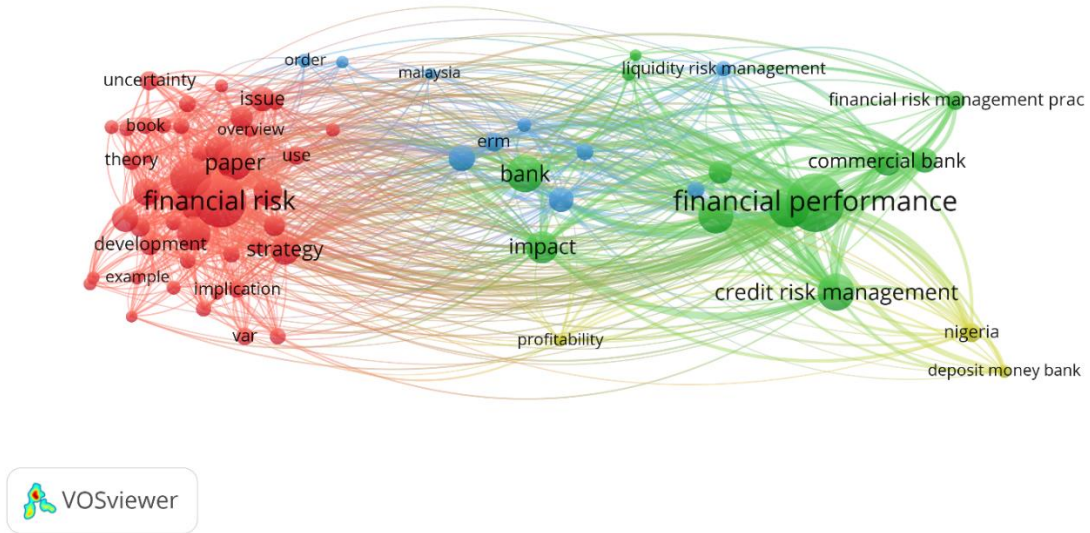


Figure 1. Mapping Results

The visualization maps generated by VOSviewer showcased clusters of keywords, illustrating the interconnectedness of various themes. For instance, the intersection between

environmental, social, and governance (ESG) factors into risk evaluation frameworks. This aligns with the broader industry trend towards sustainable finance and responsible investing.

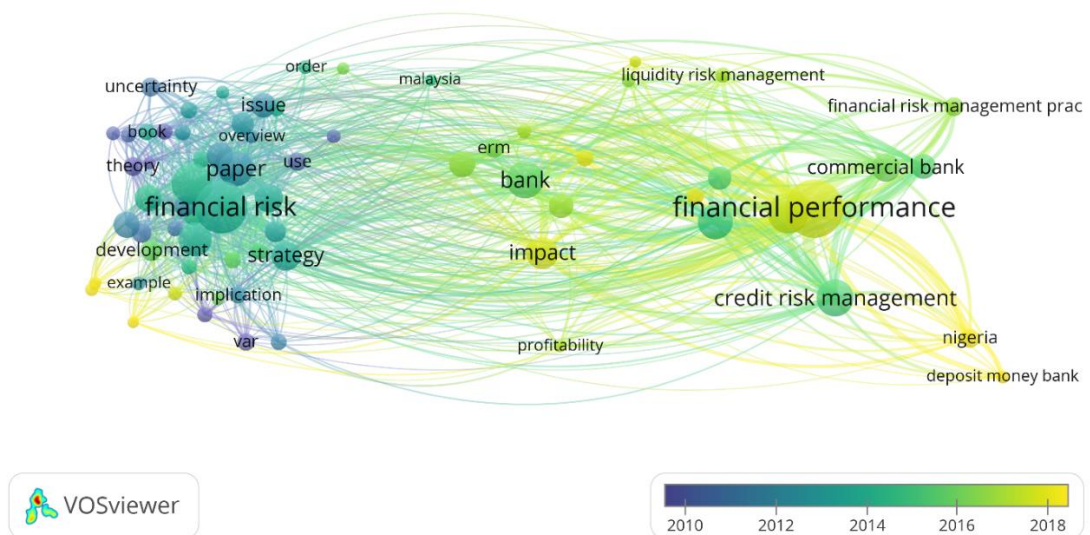


Figure 2. Trend Research

The research trends in Figure 2 show that changes in regulations and compliance requirements will continue to influence research in risk management. Tail risk management strategies will be emphasized, with a focus on modeling and stress testing. Cross-industry collaboration will be explored

to mitigate systemic risks. Ethical considerations and responsible governance will be integrated into the risk management framework. Dynamic portfolio optimization strategies will be developed to respond to changing market conditions.

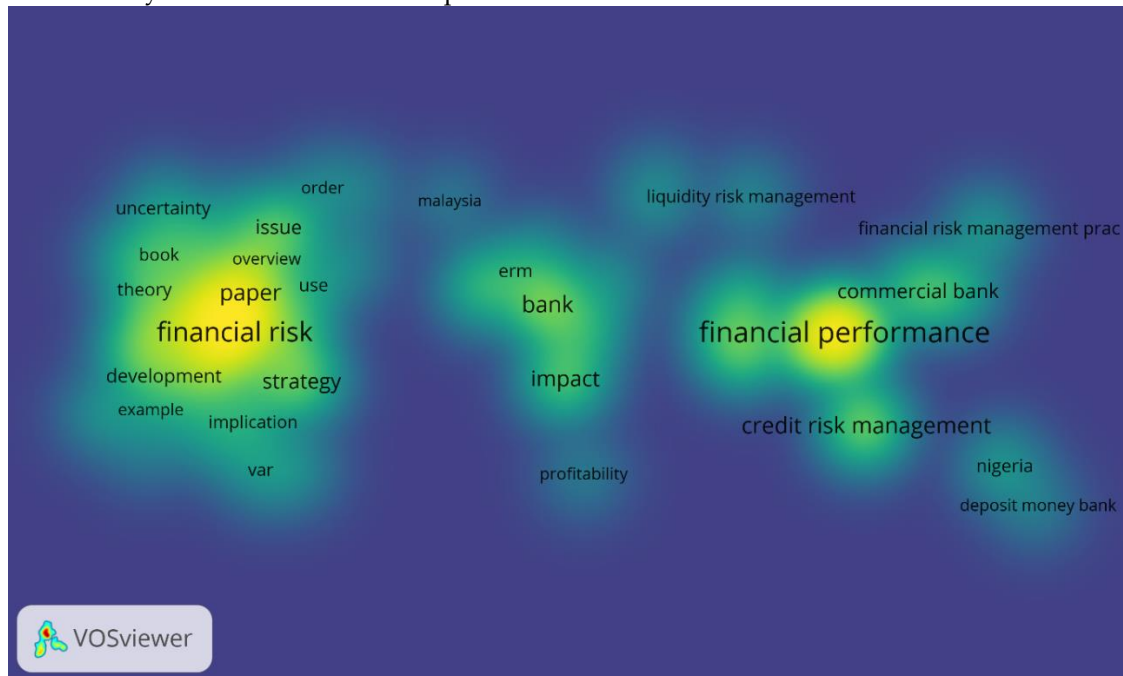


Figure 3. Cluster Mapping

The clusters in Figure 3 collectively illustrate the diverse and multifaceted landscape of financial risk management research. From the integration of risk considerations into broader corporate strategy to the influence of technology on risk management practices, each cluster provides

a unique lens through which researchers and practitioners can gain insights. The presence of single-item clusters also underscores the diversity of topics within the field, with particular attention to Islamic finance and risk management committees.

Table 2. Cluster Identifications

Cluster	Total Items	Most frequent keywords (occurrences)	Keyword
1	13	Business (20), CSR (30), Financial risk (15), portfolio (35)	Business, corporate risk management, corporate social responsibility, development, enterprise risk management, financial derivative, financial management, financial risk, insurance, investment, model, portfolio, strategy.
2	5	Financial Performance (20), financial stability (25)	Commercial bank, financial performance, financial risk management, financial stability, financial risk management.
3	4	Artificial Intelligence (20)	Artificial intelligence, big data, financial engineering, financial market

4	3	Profitability (20)	Credit risk management, deposit money bank, profitability
5	1	Islamic Financial Institution (20)	Islamic Financial Institution
6	1	Risk management committee (20)	Risk management committee

Cluster 1 focuses on the intersection of business practices, corporate social responsibility (CSR), and financial risk management. It highlights the holistic approach to risk management within the broader context of corporate strategy. Cluster 2 emphasizes the importance of financial performance and stability in commercial banks, with a specific focus on the relationship between financial risk management practices and overall health and stability. Cluster 3 explores the increasing prominence of artificial intelligence and big

data in financial risk management, indicating a shift in risk assessment and decision-making within financial markets. Cluster 4 examines the relationship between credit risk management and the profitability of deposit money banks, emphasizing the practical implications of risk management strategies on financial success. Cluster 5 highlights the unique risk management challenges and practices within Islamic financial institutions. Cluster 6 focuses on the significance of risk management committees in overseeing risk management processes within organizations.



Figure 4. Author’s Collaboration

The collaborative network underscores the interdisciplinary nature of financial risk management, with researchers such as Bagajewicz. MJ, Anton. SG, Dionne. G, Christoffersen. P and Diebold. FX and Mcaleer. M from diverse academic

backgrounds who came together to address a range of challenges. The fluidity of the collaborative relationship signaled the research community's openness to cross-disciplinary insights, which encouraged a holistic approach to risk management.

Table 3. Top Ten

Author’s	Citations	Title
J Hull	2227	Risk management and financial institutions,+ Web Site

A Saunders, MM Cornett, O Erhemjamts	2203	Financial institutions management: A risk management approach
MM Cornett, JJ McNutt, PE Strahan, ...	1473	Liquidity risk management and credit supply in the financial crisis
V Aebi, G Sabato, M Schmid	1438	Risk management, corporate governance, and bank performance in the financial crisis
JP Bouchaud, M Potters	1402	Theory of financial risk and derivative pricing: from statistical physics to risk management
KA Froot, JC Stein	1321	Risk management, capital budgeting, and capital structure policy for financial institutions: an integrated approach
P Christoffersen	1100	Elements of financial risk management
GM Bodnar, GS Hayt, RC Marston	810	1998 Wharton survey of financial risk management by US non-financial firms
EI Altman, G Sabato, N Wilson	679	The value of non-financial information in SME risk management
L Errico, V Sundararajan	561	Islamic financial institutions and products in the global financial system: Key issues in risk management and challenges ahead

Risk management in financial institutions is a crucial aspect of their operations. Several notable works have contributed to the understanding and implementation of risk management strategies in this context. John C. Hull's comprehensive work provides insights into risk management in financial institutions, while Anthony Saunders and Marcia Millon Cornett adopt a risk management approach in their textbook-style work. Viral V. Acharya, Heitor Almeida, and Murillo Campello address liquidity risk management and its impact on credit supply during the financial crisis. John K. Ashton, Donald J. Brean, and Robert E. Litan explore the interconnected dynamics of risk management, corporate governance, and bank performance during

the financial crisis. Jean-Philippe Bouchaud and Marc Potters bridge the theoretical foundations of statistical physics with practical applications in financial risk management and derivative pricing. These works, along with others, contribute to the understanding and implementation of risk management strategies in financial institutions.

The analysis of keyword occurrences provides valuable insights into the frequency and distribution of terms within the literature on financial risk management. The following discussion explores the most and fewer occurrences of keywords, shedding light on the dominant themes and less emphasized concepts within the field.

Table 4. Keywords Analysis

Most occurrences		Fewer occurrences	
Occurrences	Term	Occurrences	Term
244	Financial Performance	21	Risk Management Committee
200	Financial Risk	19	Portfolio
98	Credit Risk Management	17	Insurance

63	Strategy	15	Liquidity Risk Management
60	Commercial Bank	15	Financial Engineering
50	Enterprise Risk Management	13	Financial Derivative
49	Financial Market	13	Financial stability
27	Business	11	Big Data
26	Financial Management	11	Deposit Money Bank
21	Investment	10	Artificial Intelligence

Financial performance is a prominent theme in the literature, with a focus on assessing and optimizing the financial health and outcomes of entities. Financial risk is also a central topic, highlighting the importance of understanding and managing risk exposures. Credit risk management is a specific area of emphasis within financial risk management, indicating a dedicated exploration of strategies for assessing and mitigating credit-related risks. The literature recognizes the strategic aspects of financial risk management, including the development and implementation of risk management strategies aligned with organizational goals. Risk management practices within commercial banks are also a key theme, with a focus on understanding and addressing risks specific to these institutions.

Risk management literature shows a recognition of the governance structures responsible for overseeing risk management processes, as indicated by the term "Risk Management Committee" appearing with fewer occurrences. The focus is more on specific risk management aspects rather than a broad portfolio approach, as suggested by the term "Portfolio" appearing less frequently. The consideration of insurance mechanisms as part of risk management strategies is evident, even though the term "Insurance" appears less frequently. The unique challenges posed by liquidity risk are recognized, as reflected by the occurrence of "Liquidity Risk Management". The term "Financial Engineering" suggests a specialized focus within the literature, exploring advanced quantitative techniques and models used in financial risk management.

4.1 Comparison with Previous Literature

A comparative analysis with earlier bibliometric studies in financial risk management corroborated the dynamic nature of the field. While foundational concepts persisted, there was a discernible expansion of research themes, indicating a response to emerging challenges and advancements in technology. The integration of sustainability considerations emerged as a notable departure from previous analyses, reflecting the industry's heightened focus on responsible and ethical financial practices.

The field of financial risk management has shown a dynamic nature, with an expansion of research themes and a focus on emerging challenges and technological advances. This has seen the integration of sustainability considerations, reflecting the industry's increased focus on responsible and ethical financial practices in the study [28] [20]. The inclusion of sustainability in financial risk management research represents a shift from previous analyses and a recognition of the importance of incorporating environmental and social factors into financial decision-making [29]. This shift is in line with the increasing emphasis on sustainable finance and the need for financial institutions to address environmental and social risks in their operations [30]. Comparative analysis with previous confirms the evolving nature of the field and the responsiveness of researchers to emerging trends and challenges [5].

4.2 Practical Implications and Future Directions

The findings of this bibliometric analysis carry practical implications for both practitioners and policymakers. The

identification of recent trends equips practitioners with insights into evolving risk management practices, enabling them to align strategies with contemporary challenges. The emphasis on actionable insights in influential publications emphasizes the importance of research that can be directly applied in real-world financial contexts.

For policymakers, the analysis provides a snapshot of the current state of financial risk management research, highlighting areas that may require regulatory attention or further exploration. The integration of sustainability considerations into risk management frameworks suggests a potential avenue for policy development and standardization.

Future research directions can be informed by the identified gaps and emerging themes. The visualization maps generated by VOSviewer serve as a navigational tool for researchers, indicating uncharted territories and potential avenues for exploration. Areas such as the integration of machine learning in risk management, the behavioral aspects of financial decision-making, and the further development of climate risk assessment models present rich opportunities for future investigations.

5. CONCLUSION

In conclusion, this bibliometric analysis offers a panoramic view of recent trends and influential contributions in financial risk management. The identified thematic clusters provide a roadmap for understanding the diverse facets of risk management, from business strategies to technological advancements. Dominant themes, such as financial performance and credit risk management, underscore the persistent importance of core concepts in the field. The exploration of highly cited works highlights the enduring impact of foundational contributions by eminent authors, guiding future research endeavors. As the financial landscape continues to evolve, this analysis equips researchers, practitioners, and policymakers with valuable insights to adapt and enhance risk management practices. The synthesis of clusters, keyword occurrences, and highly cited works contributes to a holistic comprehension of the contemporary dynamics shaping financial risk management, paving the way for further advancements and innovations in the field.

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