

# Mapping Research Trends in Risk Management and Governance: A Bibliometric Analysis Using Biblioshiny

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## **Mapping Research Trends in Risk Management and Governance: A Bibliometric Analysis Using Biblioshiny**

### **Abstract:**

This study aims to provide a comprehensive bibliometric mapping of the scientific literature on risk management and governance, in order to identify its intellectual structure, thematic evolution, and emerging research trajectories over the period 1988–2025. By examining the dynamics of publication, collaboration, and conceptual development, the paper seeks to clarify how these two interconnected fields have evolved and converged within contemporary organizational research.

To achieve this objective, a bibliometric analysis was conducted using Biblioshiny, the web interface of the R package Bibliometrix. Data were extracted from Scopus and Web of Science and subsequently cleaned and harmonized to ensure metadata consistency (authors, affiliations, keywords, and sources). The analysis combines descriptive performance indicators with science mapping techniques, including co-authorship networks, keyword co-occurrence analysis, and thematic evolution mapping.

The results reveal a significant acceleration in scientific production since the mid-2010s, accompanied by increasing interdisciplinary integration. The findings highlight the growing prominence of ESG-related risk models, digital governance mechanisms supported by artificial intelligence, and advanced analytics as emerging thematic clusters. The geographical distribution shows the dominance of established research hubs while indicating a progressive expansion toward emerging economies. Overall, the study demonstrates a conceptual shift from traditional compliance-oriented risk management toward a strategic, sustainability-driven governance perspective.

This bibliometric mapping contributes to the structuring of the field by offering a synthesized interpretation of its intellectual foundations and future research avenues. It provides researchers with a clarified landscape of theoretical developments and offers practitioners strategic benchmarks to anticipate transformations in governance and risk management practices.

**Keywords:** Risk management; Governance; Bibliometric analysis; Biblioshiny; Scopus; Web of Science; Research trends

**JEL classification:** M10; G32; G34

**Paper type:** Literature review / Bibliometric analysis

## 1. Introduction

In contemporary organizational environments characterized by heightened uncertainty, regulatory pressure, and increasing stakeholder scrutiny, risk management and governance have become central pillars of strategic management. The growing exposure of organizations to financial crises, technological disruptions, reputational risks, and sustainability challenges has transformed risk management from a compliance-driven function into a strategic capability embedded within governance structures. Foundational frameworks such as Enterprise Risk Management (COSO, 2004; COSO, 2017) and the integration of risk oversight into corporate governance codes have reinforced this evolution, positioning risk governance as a mechanism for enhancing accountability, transparency, and long-term value creation. Simultaneously, theoretical perspectives such as Agency Theory (Jensen & Meckling, 1976), Stakeholder Theory (Freeman, 1984), Institutional Theory (DiMaggio & Powell, 1983), and the Resource-Based View (Barney, 1991) have provided conceptual lenses through which the interaction between governance mechanisms and risk management practices can be interpreted.

Over the past two decades, scholarly interest in risk management and governance has intensified significantly. Empirical studies have examined the impact of board structures on risk oversight, the role of governance mechanisms in mitigating agency conflicts, and the contribution of integrated risk systems to organizational performance. Parallel research streams have explored sustainability governance, ESG-oriented risk models, and the influence of digital technologies and artificial intelligence on risk monitoring processes. Despite this proliferation, the literature remains dispersed across disciplines including finance, accounting, management, public administration, and sustainability studies. Several narrative and systematic reviews have addressed specific subdomains such as ERM effectiveness, board risk committees, or ESG disclosure practices. However, a comprehensive mapping of the intellectual structure and thematic evolution of the combined field of risk management and governance over an extended time horizon remains limited.

Understanding how this body of knowledge has evolved is essential for at least three reasons. First, it allows the identification of dominant theoretical paradigms and methodological trends shaping the field. Second, it clarifies collaborative networks and geographical distributions that influence knowledge production. Third, it enables the detection of emerging research fronts, particularly in relation to digital governance, sustainability integration, and resilience-oriented management models. In this context, a bibliometric approach offers a systematic and quantitative means to analyze large corpora of scientific publications and uncover structural patterns that are not readily observable through traditional qualitative synthesis.

Unlike systematic literature reviews, which aim to critically synthesize empirical findings within narrowly defined research questions, bibliometric analyses focus on mapping the scientific architecture of a field through citation patterns, co-authorship networks, keyword co-occurrences, and thematic evolution. While systematic reviews provide depth of conceptual integration, bibliometric studies offer breadth and structural visualization of intellectual dynamics. Given the rapid expansion and interdisciplinary dispersion of research on risk management and governance, a bibliometric method is particularly appropriate to capture its macro-level development, identify influential actors and sources, and trace conceptual transformations over time. The objective of this study is therefore not to evaluate empirical effect sizes or test theoretical propositions, but rather to provide a structured cartography of the field and to identify its principal research trajectories between 1988 and 2025.

Building on this rationale, this study addresses the following research questions. How has scientific production on risk management and governance evolved in terms of volume, sources, and geographical distribution? Which authors, institutions, and collaborative networks structure the intellectual landscape of this domain? What are the dominant themes and theoretical

orientations underpinning this literature, and how have they evolved over time? Finally, which emerging research avenues can be identified based on current bibliometric patterns?

To answer these questions, the study mobilizes a bibliometric analysis based on data extracted from Scopus and Web of Science, processed using Biblioshiny. By combining performance indicators and science mapping techniques, the research seeks to reveal the intellectual foundations, thematic clusters, and dynamic transformations of the field. Through this mapping, the paper contributes to clarifying the conceptual evolution of risk management and governance, highlighting the transition from compliance-oriented frameworks toward strategic, sustainability-driven, and digitally supported governance models. It thereby provides scholars with an integrated overview of the domain and offers practitioners and policy-makers analytical benchmarks to anticipate future developments in governance and risk oversight practices.

## **2. Literature Review**

### **2.1. Theoretical Foundations of Risk Management**

Risk Management comprises the set of processes designed to identify, assess, and address risks that may impact the achievement of organizational objectives (Hopkin, 2018). The evolution of this field has shifted from a primarily reactive and siloed approach toward a proactive and integrated perspective, embodied notably by the Enterprise Risk Management (ERM) model (COSO, 2004; ISO 31000, 2018).

ERM involves integrating risk management practices into the organization's overall strategy, supported by adapted governance processes. Recent studies emphasize the need to align risk management with value creation and sustainability (Frigo & Anderson, 2011), moving beyond a mere regulatory compliance mindset.

In the context of non-profit organizations and the third sector, risk management takes on a distinct dimension, linked to safeguarding stakeholder trust and ensuring the sustainability of social missions (Young & Searing, 2019). The risks addressed in this context extend beyond the financial sphere to include operational, reputational, ethical, and environmental risks.

### **2.2. Governance Principles and Models**

Governance refers to the systems, processes and relationships through which organizations are directed, controlled, and held accountable to their stakeholders (OECD, 2015). In the private sector, dominant models have been structured around agency theory (Jensen & Meckling, 1976) and stakeholder theory (Freeman, 1984).

In the public and non-profit sectors, governance additionally incorporates imperatives of transparency, efficiency, and social accountability (Cornforth, 2014). Recent approaches, such as risk-based governance, aim to integrate risk management into governance frameworks to enhance long-term resilience and performance (Power, 2007).

The interconnection between governance and risk management materializes through mechanisms like audit committees, internal control policies, and integrated regulatory frameworks (Tricker, 2019). This convergence is central to recent reforms, particularly in developing countries, where governance improvement is seen as a lever to attract investment and strengthen public trust.

### **2.3. Bibliometric Applications in Risk Management and Governance**

Bibliometric analysis has become an essential tool for understanding the evolution and structure of research fields. It enables quantitative examination of scientific output, identification of influential authors, collaboration networks, dominant themes, and emerging trends (Aria & Cuccurullo, 2017).

In the domain of risk management and governance, several studies have employed this approach to map literature and detect expanding research areas (Khan et al., 2021; Nair et al., 2022). However, most focus on specific sectoral contexts (banking, insurance, energy) or isolated dimensions (e.g., climate risk governance), with limited work combining both fields within an integrated perspective.

The Biblioshiny tool, a graphical interface for the R package Bibliometrix, facilitates such analyses by enabling the combination of data from multiple sources like Scopus and Web of Science, performing automated metadata preprocessing, and generating interactive visualizations (Aria & Cuccurullo, 2017). In our study, this approach is applied for the first time to a combined corpus spanning nearly four decades (1988-2025) examining risk management and governance within an expanded context that includes the third sector.

### **3. Methodology**

#### **3.1. Data Sources and Study Period**

Bibliographic data were collected from Scopus and Web of Science (WoS), covering the period 1988-2025. These two databases were selected for their reliability, rigorous indexing, and international coverage in the fields of economics, management, and social sciences.

#### **3.2. Search Strategy and Inclusion and Exclusion Criteria**

The bibliographic data were collected exclusively from the Scopus database, selected for its broad coverage of peer-reviewed journals and its structured metadata compatibility with bibliometric tools. The search strategy was designed to capture scientific contributions addressing the intersection between risk management and governance within nonprofit organizations, public foundations, and third-sector entities.

The search query was constructed using Boolean operators and applied to the fields TITLE-ABS-KEY as follows: TITLE-ABS-KEY ("risk management" OR "enterprise risk management" OR "risk mapping" OR "risk identification") AND ("nonprofit organization" OR "public foundation" OR "social foundation" OR "third sector organization" OR "non-profit sector") AND ("internal control" OR "corporate governance" OR "governance" OR "risk-based governance"). To ensure disciplinary relevance and academic quality, the query was restricted to the subject areas Economics, Business, Social Sciences, Decision Sciences, and Multidisciplinary studies. Only articles and conference papers written in English were retained. The inclusion criteria were defined as follows. First, the document had to explicitly address risk management and governance within nonprofit or public-sector organizational contexts. Second, the publication had to be indexed in Scopus and classified within the selected subject areas. Third, the document type had to correspond to peer-reviewed journal articles or conference papers to ensure scientific rigor.

The exclusion criteria were also explicitly applied. Documents were excluded if they addressed risk management in purely technical or engineering contexts unrelated to governance issues. Publications focusing exclusively on for-profit corporations without reference to nonprofit or public governance structures were removed. Editorials, book reviews, notes, and non-peer-reviewed materials were also excluded. Finally, duplicate records and documents with incomplete bibliographic metadata were eliminated during the cleaning phase.

After applying these criteria and conducting a manual screening of titles and abstracts to ensure thematic consistency, the final dataset consisted of 202 documents.

#### **3.3. Data Preprocessing and Corpus Construction**

The bibliographic records were exported from Scopus in BibTeX format to ensure compatibility with the Bibliometrix package in R. The preprocessing stage was conducted using RStudio and

followed a structured protocol designed to ensure data integrity and reproducibility.

The BibTeX file was first converted into a harmonized data frame using the `convert2df` function of the Bibliometrix package. Subsequently, a cleaning procedure was implemented to remove duplicate entries and standardize metadata fields. Particular attention was given to the normalization of author names, institutional affiliations, and keywords in order to reduce fragmentation in network analyses.

Additional manual verification was conducted to detect inconsistencies in spelling and institutional naming conventions. After cleaning and validation, the finalized corpus comprised 202 documents published across 164 sources, involving 508 distinct authors. The average number of co-authors per article was 2.67, and international collaborations accounted for 6.43 percent of total publications.

### **3.4. Bibliometric Analysis Procedure**

The bibliometric analyses were performed using Biblioshiny, the web-based interface of the Bibliometrix package. The analytical framework combined performance analysis and science mapping techniques in order to provide a comprehensive overview of the intellectual structure of the field.

First, descriptive performance indicators were generated to examine annual publication trends, the geographical distribution of scientific output, and the most productive authors, institutions, and journals. These indicators allowed the identification of the temporal growth trajectory of research on risk management and governance within nonprofit and public-sector contexts.

Second, network-based analyses were conducted to explore the relational architecture of the field. Co-authorship analysis was used to map scientific collaboration patterns among researchers and institutions. Co-citation analysis enabled the identification of foundational references structuring the intellectual base of the domain. Bibliographic coupling analysis was employed to detect emerging research streams based on shared citation patterns.

Third, keyword co-occurrence analysis and thematic evolution mapping were performed to identify dominant research themes and trace their transformation over time. This approach made it possible to observe the progressive integration of governance mechanisms, enterprise risk management frameworks, and sustainability-oriented perspectives within nonprofit and public organizational settings.

Overall, this methodological framework ensures analytical transparency and replicability while offering a structured cartography of the scientific landscape under investigation.

## **4. Bibliometric Analysis Results**

### **4.1. General Trends in Scientific Production**

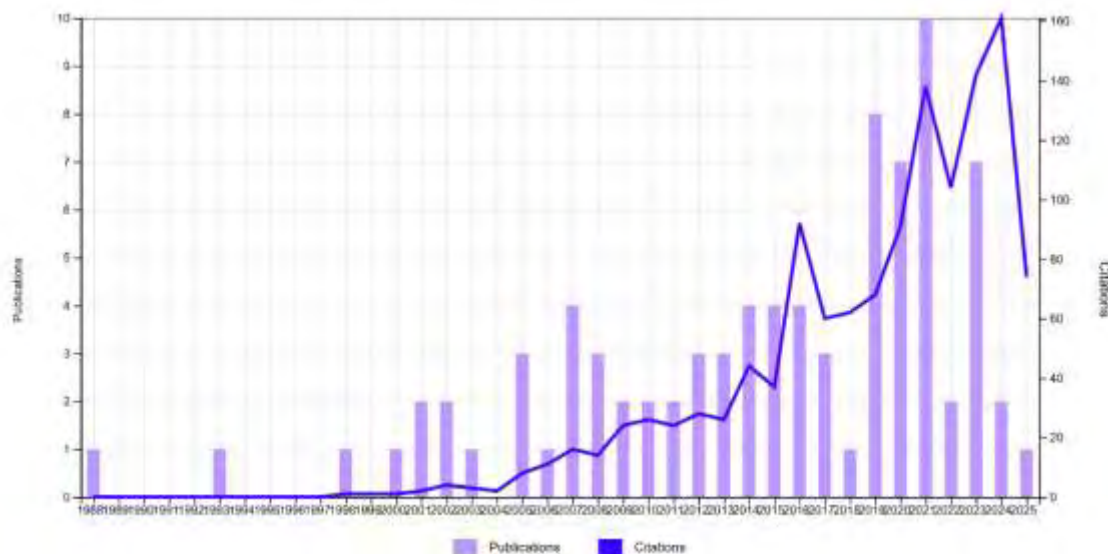
#### **4.1.1. Annual Evolution of Publications and Citations (1988–2025)**

The figure 1 illustrates the temporal evolution of research in risk management and governance within public foundations and the non-profit sector. The purple bars represent annual publication volume, while the blue curve tracks academic impact measured by citation counts. The value of this visualization lies in its ability to highlight scientific development rhythms, distinguishing between the field's emergence, structuring, and maturation phases.

The analysis reveals three key periods. The first, between 1988 and 2005, is characterized by limited scientific activity—rarely exceeding three publications annually—and a near absence of citations, indicating embryonic interest and primarily exploratory research. The second phase, from 2006 to 2015, shows gradual intensification: article counts regularly reach four to five per year, while citations begin growing from 2010 onward, likely linked to the dissemination of international regulatory frameworks integrating risk governance. Finally, the 2016-2025 period marks substantial expansion, with a peak of ten publications in 2021 and a

maximum of nearly 160 citations in 2023, demonstrating that recent work has resonated significantly within the scientific community.

**Figure 1 – Annual Evolution of Publications and Citations (1988–2025)**



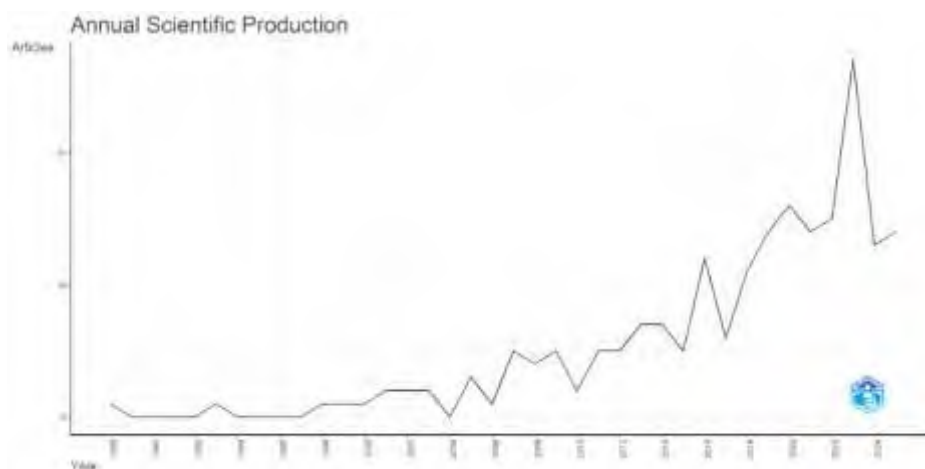
*Source: Web of Science data*

These results confirm the steady consolidation of this research field, which has now established itself as a central pillar in studies of governance and risk management in non-profit organizations. The slight decline observed in 2025 should be interpreted cautiously, as it likely reflects incomplete data collection for the current year.

#### 4.1.2. Annual Evolution of Scientific Production in Risk Management (1988–2025)

The figure 2 tracks the annual progression of publications dedicated to risk management over the period 1988–2025. It provides a clear overview of how the field has evolved from an academic niche to a structured and dynamic domain. This visualization serves to highlight variations in scientific output in relation to major economic, social, and environmental shifts, while revealing the field's sensitivity to contextual events.

**Figure 2 – Annual Evolution of Scientific Production in Risk Management (1988–2025)**



*Source: Authors' analysis using Biblioshiny under R-Studio*

Four distinct phases emerge. Between 1988 and 2000, production remained marginal, never exceeding two articles per year, indicating limited and fragmented scientific interest. From 2001

to 2015, growth was moderate but steady, reaching 5 to 10 annual articles by 2010, reflecting progressive structuring of research. The period 2016–2022 marked rapid expansion, with a peak of approximately 23 publications in 2022, likely stimulated by global crises such as the COVID-19 pandemic, rising climate concerns, and organizational resilience imperatives. Finally, the years 2023–2024 show a slight decrease from the peak while maintaining levels significantly above historical averages, indicating the topic's continued strong academic appeal.

This evolution confirms that risk management has transitioned from an emerging field to a mature and strategic domain, whose dynamics are closely correlated with major contemporary challenges. It fully justifies conducting an in-depth bibliometric analysis, as the volume and diversity of publications now enable identification of robust and significant trend.

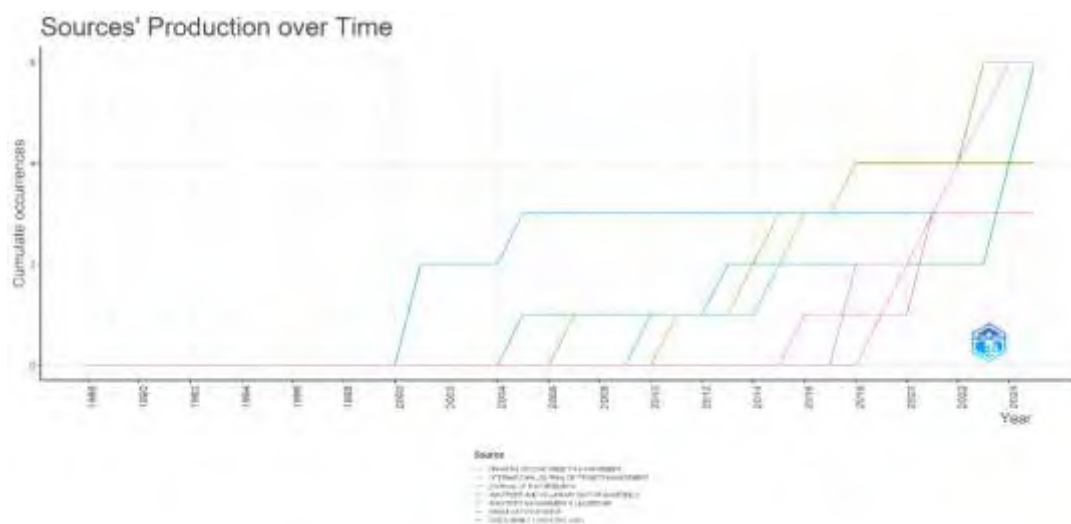
#### 4.1.3. Cumulative Evolution of Scientific Production by Journal (1988-2025)

Figure 3 illustrates the cumulative progression of publications on risk management and governance by academic journal, spanning the period from 1988 to 2025. It enables the identification of both the historically influential journals that have shaped the research field and emerging publication channels contributing to its renewal. This visualization serves a dual purpose: it highlights the unique editorial trajectories of each journal while demonstrating how the theme has progressively disseminated across diverse outlets, reflecting its growing interdisciplinary nature.

Until the early 2000s, the theme remained marginal, confined to isolated contributions in *Organization Science* and *Nonprofit and Voluntary Sector Quarterly*, indicating its recent emergence in the academic landscape. The 2010-2020 decade marked a diversification phase, with the arrival of journals such as *Financial Accountability & Management*, *Journal of Risk Research*, and *International Journal of Project Management*, broadening the editorial spectrum toward management sciences, public accounting, and project management.

Since 2018, growth has accelerated significantly, driven by the inclusion of *Sustainability (Switzerland)* and *Voluntas*, along with the strengthening presence of *Nonprofit Management & Leadership*. This evolution reflects a shift toward more cross-cutting approaches that integrate sustainability concerns, social responsibility, and governance in nonprofit and public organizations.

Figure 3 - Cumulative Evolution of Scientific Production by Journal (1988-2025)



Source: Authors' analysis using Biblioshiny under R-Studio

By 2025, the highest cumulative volumes are observed for *Nonprofit and Voluntary Sector Quarterly*, *Sustainability*, and *Voluntas*, confirming their central role in disseminating and consolidating knowledge on the subject. The figure thus demonstrates that the structuring of

this field results from both a core of specialized historical journals and the contribution of recent, rapidly-growing titles that are strategic for tracking emerging interdisciplinary trends.

## 4.2. Concept Mapping

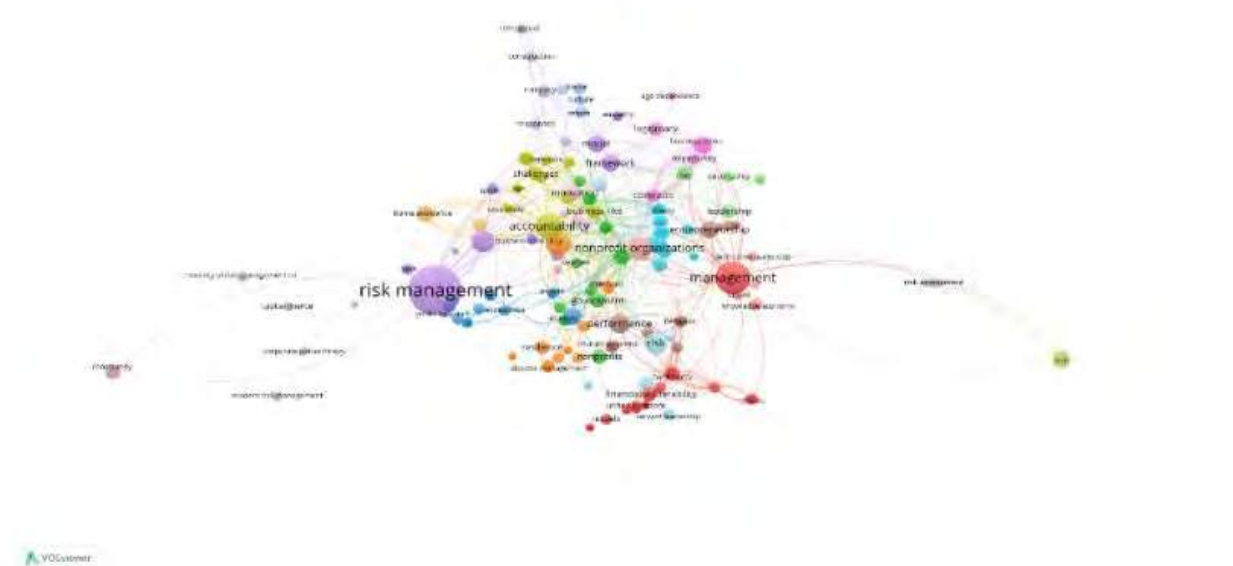
### 4.2.1. Co-occurrence Network of Author Keywords

Figure 4 illustrates the conceptual structure of literature on risk management and governance through the relationships between author keywords. This visualization's value lies in its ability to reveal central concepts, identify thematic groupings (clusters), and highlight interconnections between different research approaches. It thus enables visualization of how the field structures itself around dominant axes while incorporating peripheral or emerging themes.

The network analysis reveals several distinct clusters:

- **Central "Risk Management" cluster (purple):** Serving as the network's core, this term is strongly connected to *accountability*, *nonprofit organizations*, and *performance*. It represents the major research axis focused on risk management in nonprofit and public organizations.
- **"Governance and Accountability" cluster (yellow):** This groups keywords such as *accountability*, *framework*, *innovation*, *model*, and *government*, directing attention toward institutional frameworks, governance policy structures, and innovative managerial approaches.
- **"Management and Leadership" cluster (light green and red):** This includes terms like *management*, *leadership*, *entrepreneurship*, *resilience*, and *financial vulnerability*, emphasizing organizational capabilities, strategic direction, and financial fragility.
- **"Risk Assessment and Specific Contexts" cluster (light yellow):** Dominated by *risk assessment*, it connects to specific environments (e.g., *belt*, *construction projects*), reflecting technical and sector-specific approaches.
- **Peripheral clusters:** Terms such as *community*, *corporate philanthropy*, and *maturity of risk management* indicate existing thematic niches and emerging research areas.

Figure 4 - Co-occurrence Network of Author Keywords



Source: Combined Web of Science data, processed using VOSviewer

Overall, this mapping confirms that the field organizes around a strong core—risk management—connected to governance, accountability, and organizational resilience concerns, while simultaneously expanding into sector-specific and contextual applications.

#### 4.2.2. Co-occurrence Network of Author Keywords (Scopus)

Figure 5 refines the previous representation by providing a more detailed view of the relationships between keywords in the risk management and governance literature. Its value lies in highlighting emerging concepts, specialized themes, and recent extensions, thereby enabling a better understanding of the diversity of approaches and the structuring of research at sectoral, technological, and organizational levels.

*Figure 5 - Co-occurrence Network of Author Keywords (Refined Analysis)*



*Source: Combined Scopus data, processed using VOSviewer*

The analysis reveals several distinct clusters:

- **Central Core "Risk Management":** This remains the most connected element, directly associated with *project management*, *risk perception*, *disasters*, *vulnerability*, and *public sector*. This confirms that risk management continues to form the conceptual backbone around which other themes revolve.
- **Technological and Data Axis (purple and light blue):** Notable presence of terms like *big data*, *machine learning*, *social media*, and *sentiment analysis*, reflecting the gradual integration of digital and analytical tools in risk management. Their peripheral position suggests these areas are still in a growth phase with development potential.
- **Sectoral and Contextual Axis (green and orange):** Inclusion of keywords such as *China*, *public sector*, *construction industry*, *climate change*, and *forestry*, demonstrating applications specific to sectors or regions. This confirms the field's expansion toward contextualized and comparative studies.
- **Governance and Resilience Axis (red):** Connection with *governance*, *adaptive response*, *accident prevention*, and *organization*, showing that risk management is conceptualized as a process integrated within broader governance structures.
- **Peripheral Clusters and Niches:** Terms like *social innovation*, *supply chains*, and *sentiment analysis* represent themes less connected to the central core but with strong potential for expansion.

In summary, this Scopus mapping complements the perspective obtained via Web of Science by emphasizing the emergence of technological and sectoral dimensions that enrich the conceptual core centered on risk management and governance.

#### 4.2.3. Comparative Analysis – Web of Science vs. Scopus

This comparison aims to contextualize the two mappings derived from Web of Science and Scopus by identifying their commonalities, differences, and the complementary perspectives they provide for analyzing the "risk management and governance" field.

In Web of Science, the network displays a dense and balanced structure, organized around several clusters of comparable size. The terms *risk management*, *management*, *accountability*, and *nonprofit organizations* form a central core closely linked to concepts such as legitimacy, performance, and governance. This configuration reflects an integrated literature where different thematic axes strongly interact.

In Scopus, the structure is more polarized around *risk management*, with peripheral branches oriented toward technological themes (*big data*, *machine learning*) and sectoral applications (*public sector*, *construction industry*, *climate change*). The lower peripheral density indicates more pronounced thematic dispersion but also greater diversity in approaches.

In both networks, *risk management* occupies the central position and acts as a hub connecting all concepts. Governance, performance, and resilience also appear in both corpora, confirming their transversal role in research. Sectoral dimensions, particularly *public sector* and *construction industry*, are present in both databases, demonstrating shared interest in practical risk management applications.

The Web of Science approach emphasizes institutional dimensions, with concepts such as *accountability*, *legitimacy*, and *nonprofit organizations*. This positioning reflects strong anchoring in management science and organizational accountability issues. In contrast, Scopus introduces more terms related to information technologies (*big data*, *machine learning*, *social media*, *sentiment analysis*), indicating openness toward digital innovations for risk management.

On sectoral and geographical levels, Scopus distinguishes itself through references to specific countries (*China*, *Kuwait*, *Netherlands*) and environmental challenges (*climate change*, *forestry*), while Web of Science maintains a more transversal approach.

The cross-analysis reveals that Web of Science provides an institutional and normative perspective of the field, focused on governance and legitimacy, while Scopus contributes a more applied and technological dimension, enriched by specific sectoral contexts. Together, they offer a comprehensive panorama combining organizational foundations with methodological innovations and practical applications across diverse environments.

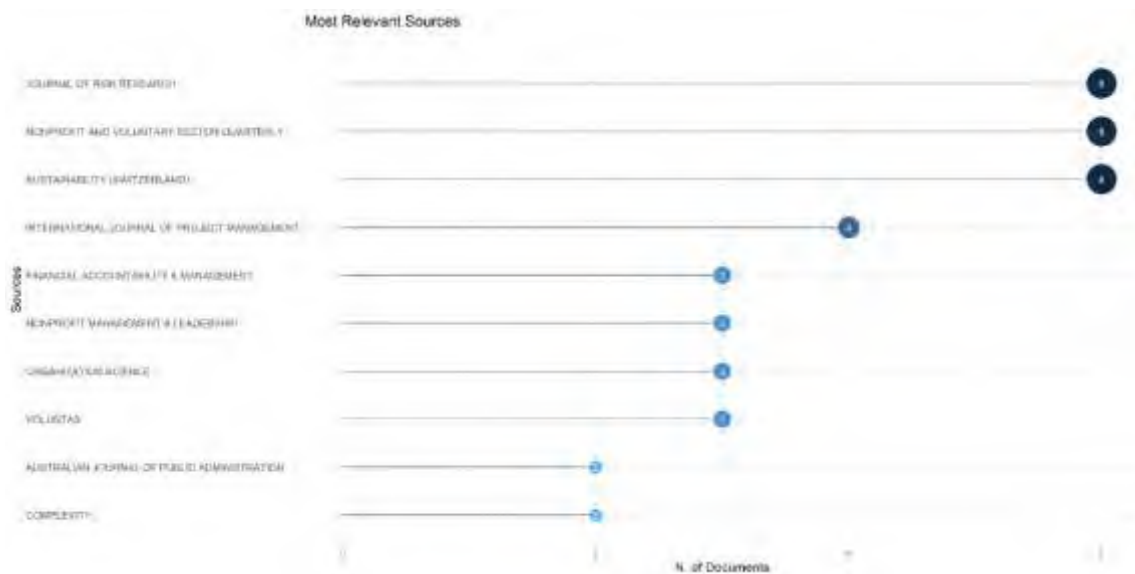
#### 4.2.4. Keyword Cloud of Publications on Risk Management

Figure 6 provides an immediate visual representation of the dominant themes within the scientific corpus, based on the frequency of keyword appearance. The more a term is cited in the publications, the larger it appears, allowing for the quick identification of the structuring concepts in the field under study. It thus serves as a synthetic entry point, preceding the more detailed relational analyses conducted via VOSviewer.

Observation clearly highlights the preeminence of risk management and risk assessment, confirming that the majority of works focus either on risk management or its evaluation. Orbiting this core are closely related notions such as accountability, emergency management, performance, governance, and disasters, which illustrate the connection between risk management, organizational responsibility, and crisis response mechanisms.



**Figure 7 – Most Relevant Scientific Journals for Risk Management Research**

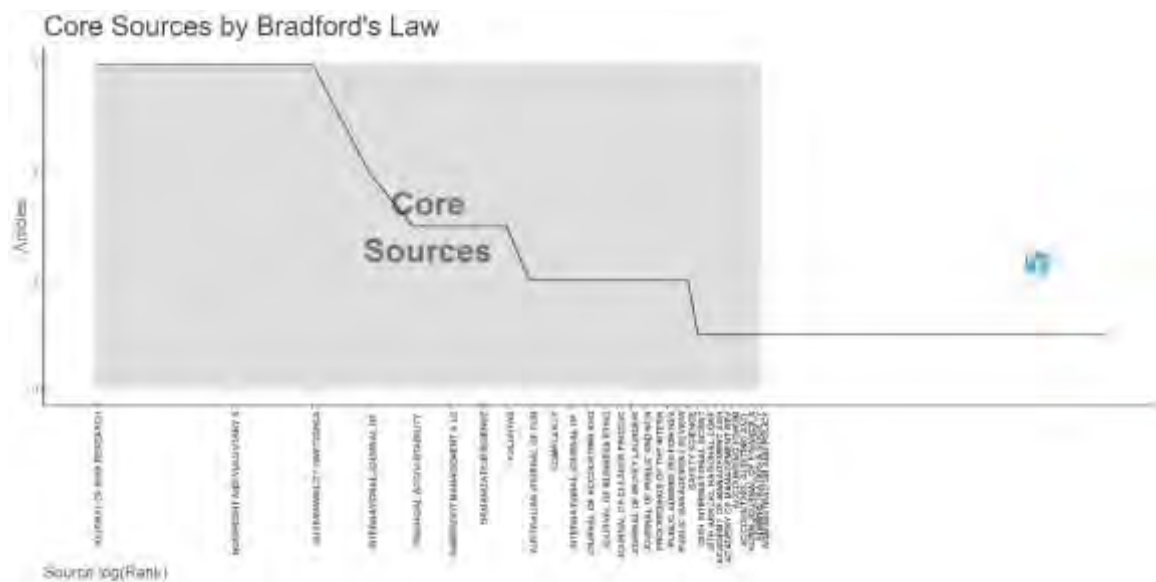


Source: Authors' analysis using Biblioshiny under R-Studio

#### 4.3.2. Identification of Core Sources According to Bradford's Law

Figure 8 applies Bradford's Law to the field of risk management and governance to identify the journals that concentrate the majority of scientific production. Consistent with this bibliometric principle, a limited core of sources publishes most relevant work, while contributions gradually disperse across more peripheral journals.

**Figure 8 – Identification of Core Sources According to Bradford's Law**



Source: Authors' analysis using Biblioshiny under R-Studio)

The central core, represented in the shaded area on the left, includes strategic journals such as *Journal of Risk Research*, *Nonprofit and Voluntary Sector Quarterly*, *Sustainability (Switzerland)*, and *Financial Accountability & Management*, each accounting for approximately five to six articles. These publications constitute the primary channels for knowledge dissemination and consolidation in the field. The intermediate zone includes titles such as *International Journal of Project Management*, *Nonprofit Management & Leadership*, *Organization Science*, and *Voluntas*, whose contributions, though more modest in

volume, remain scientifically significant. In the periphery, numerous journals—including *Journal of Public Administration Research and Theory*, *Journal of Business Ethics*, and *Public Management Review*—contain only one or two articles, providing occasional or specialized insights.

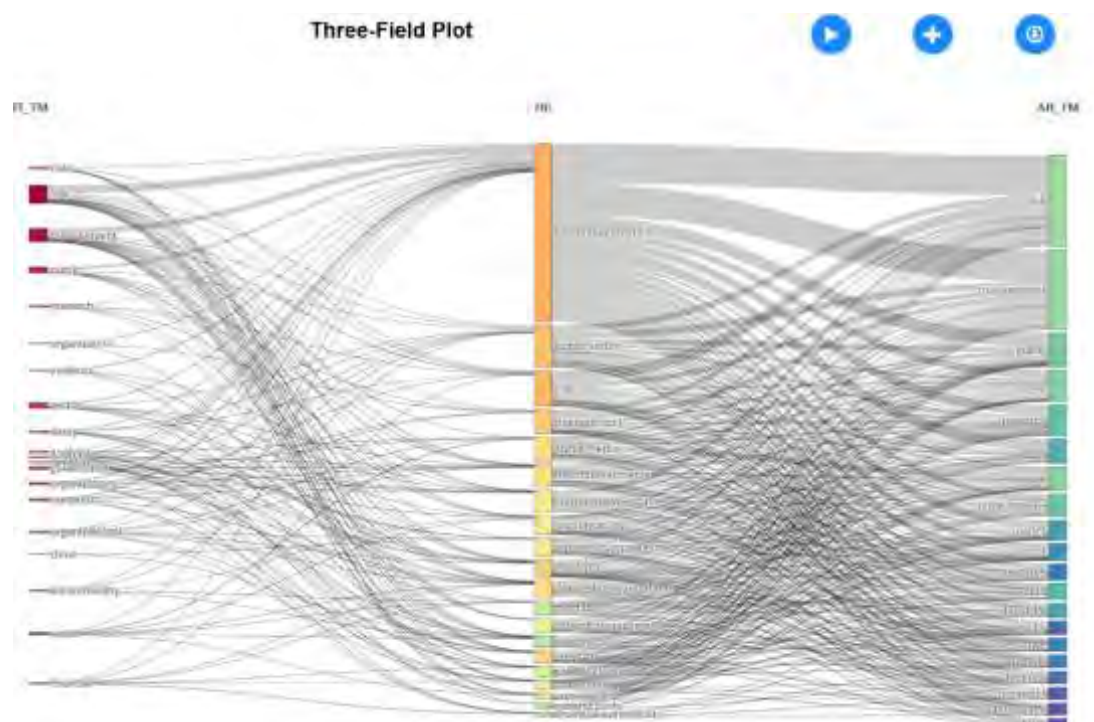
The distribution curve highlights a rapid decline in publication volume after the central core, confirming the strong polarization of literature around a few specialized journals. This configuration reflects clear thematic structuring and indicates that, for effective monitoring or to maximize publication impact, it is strategic to primarily target core journals.

#### 4.4. Thematic Analysis

##### 4.4.1. Three-Field Plot TI\_TM-DE-AB\_TM – Connections between Titles, Descriptors, and Author Keywords

The three-field plot provides a structured visualization of the lexical interconnections between title terms (TI\_TM), author keywords (DE), and abstract terms (AB\_TM). Rather than merely illustrating frequency, this mapping (*Fig 9*) highlights the semantic coherence and conceptual circulation of dominant themes across different textual layers of the corpus.

**Figure 9: Three-Field Plot TI\_TM-DE-AB\_TM**



**Source: Authors' analysis using Biblioshiny under R-Studio**

The analysis reveals a strong lexical convergence around the expression “risk management,” which functions as the primary nodal concept linking titles, descriptors, and abstracts. Terms such as risk, risks, and management appearing in titles are consistently connected to the author keyword “risk management” and are mirrored in abstracts through recurring references to management practices, public governance, and research design. This lexical redundancy suggests a high degree of conceptual stabilization within the field, indicating that risk management remains the organizing backbone of scholarly production.

A second structuring pole emerges around the “public sector” and institutional governance dimension. Title expressions such as public, organization, and sector converge toward descriptors related to governance and accountability. In abstracts, these terms are associated with governance practices, institutional arrangements, and organizational structures,

confirming that the corpus is strongly anchored in institutional and public management contexts. This interconnection suggests that the literature conceptualizes risk management not merely as a technical process, but as an embedded governance mechanism within public and nonprofit entities.

A third axis is structured around theoretical and normative constructs, particularly institutional theory and corporate governance. These concepts connect title-based references to governance and organizational development with abstract-level notions such as organizational culture and social dynamics. The circulation of these terms across textual fields indicates that the literature increasingly frames risk management within broader theoretical paradigms rather than treating it as an isolated managerial tool.

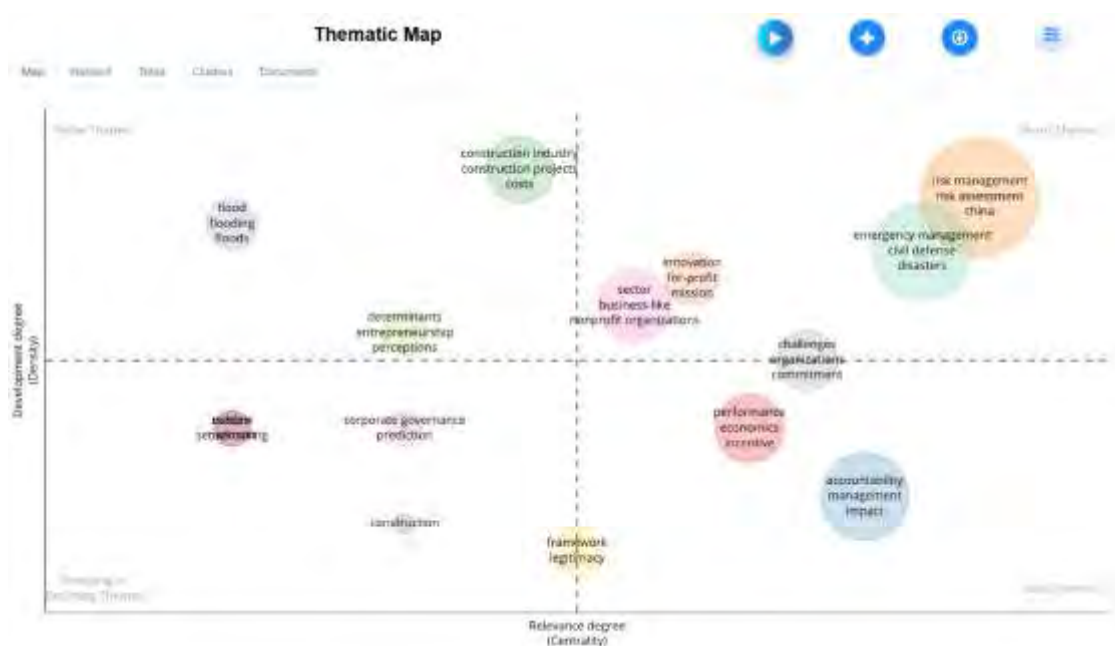
Finally, several transversal and emerging themes act as bridging elements between general formulations and analytical constructs. Terms such as resilience, accountability, emergency management, financial vulnerability, and COVID-19 connect descriptive title expressions with more operational abstract-level terminology such as data, analysis, and findings. Their intermediary position suggests the progressive expansion of the field toward crisis management, sustainability, and resilience-oriented governance.

Overall, the three-field plot confirms that while risk management constitutes the semantic core of the domain, the field is progressively integrating institutional, resilience, and accountability dimensions. The strong lexical alignment between titles and abstracts reflects conceptual consolidation, whereas the presence of bridging themes signals ongoing thematic diversification.

#### 4.4.2. Thematic Map – Positioning of Themes by Centrality and Density

The thematic map positions clusters of keywords according to Callon's centrality and density measures. Centrality reflects the degree of interaction between a theme and other themes within the field, indicating its structural importance. Density measures the internal cohesion of a theme, capturing its developmental maturity and conceptual specialization.

Figure 10: Thematic Map



Source: Authors' analysis using Biblioshiny under R-Studio

In the upper-right quadrant, corresponding to Motor Themes, the most structurally central and internally developed topics are located. In this corpus, “risk management” and “risk

assessment” display the highest centrality values, positioning them as the dominant organizing pillars of the field. These themes are accompanied by crisis-related constructs such as emergency management, civil defense, and disasters, which exhibit both high density and high centrality. Their placement indicates that research linking risk governance to crisis response constitutes a mature and structurally influential stream within the literature.

The upper-left quadrant contains Niche Themes, characterized by high density but comparatively lower centrality. Topics such as flood, flooding, construction industry, and construction projects appear in this area. These clusters demonstrate strong internal development within specific sectoral applications but remain relatively peripheral to the broader intellectual structure. Their specialized character limits their integrative capacity across the entire field of governance and risk management.

The lower-right quadrant corresponds to Basic Themes, which are central to the domain but insufficiently developed. Concepts such as accountability, management, organizational commitment, and impact fall within this area. Their high centrality indicates that they are frequently connected to other themes, yet their lower density suggests that they require further theoretical consolidation and empirical refinement. Within the perspective of this study, accountability represents a potentially strategic bridge between governance mechanisms and performance-oriented risk management.

Finally, the lower-left quadrant groups Emerging or Declining Themes, characterized by both low density and low centrality. Themes such as decision making, prediction, framework, legitimacy, and corporate governance are positioned in this area. While their peripheral location may indicate declining relevance in certain substreams, it may also signal early-stage conceptual reconfiguration. In particular, corporate governance and legitimacy retain theoretical potential for integration into more comprehensive models of risk governance, especially when linked to sustainability and ethical oversight frameworks.

It is important to note that the thematic map was generated using the default minimum frequency threshold applied in Biblioshiny for keyword inclusion, ensuring that only statistically significant clusters were retained in the analysis. The positioning of themes is therefore based on relative centrality and density ranks rather than absolute numerical cut-offs, reinforcing the robustness of the structural interpretation.

Collectively, the thematic mapping reveals a field anchored in mature crisis-oriented risk management research while simultaneously opening conceptual space for governance accountability, resilience, and sustainability integration. The coexistence of consolidated motor themes and underdeveloped yet central concepts suggests that the domain remains dynamically evolving rather than theoretically saturated.

## **5. Discussion**

The conducted bibliometric examination reveals a clear and hierarchical structuring of the research field in risk management and governance. The results confirm the conclusions of prior work, notably those of Asenova et al. (2020) and Bailey et al. (2021), who had already highlighted the centrality of risk management and institutional governance in scientific production. However, our thematic maps and co-occurrence analyses reveal new signals: the marked emergence of ESG (Environmental, Social, and Governance) dimensions and artificial intelligence applied to risk management. These themes, still peripheral in studies from five years ago, now appear to be positioning themselves as vectors of innovation and expansion for the field, particularly in works published from 2021 onwards.

The figures related to geographical distribution (Figures 11 and 12) show that scientific dynamics remain heavily concentrated in high-income, primarily Anglophone countries, with the United States, Australia, and the United Kingdom as major hubs. This finding confirms the distribution previously observed in the work of Bromiley and Rau (2016) but adds a nuance: a

gradual opening towards emerging countries like China, Brazil, and India, although their intensity of international collaboration remains heterogeneous. This potential rebalancing could enrich the diversity of perspectives, particularly by integrating varied institutional and regulatory contexts.

Conceptually, the results from the Thematic Map (Figure 15) allow us to distinguish four strategic zones:

- **Motor Themes** (*risk management, emergency management*) which constitute the theoretical and methodological backbone of the domain.
- **Basic Themes** (*accountability, organizational commitment*) which, although central, require methodological and empirical deepening.
- **Emerging Themes** (*corporate governance, framework, legitimacy*) which pave the way for new problematics, notably around transparency, the legitimacy of governance mechanisms, and their articulation with risk management.
- **Niche Themes** (*flood management, construction projects*) which, although sector-specific, offer opportunities for concrete application and knowledge transfer.

These results have several implications for research. Firstly, they argue for an interdisciplinary approach integrating contributions from strategic management, engineering sciences, behavioral economics, and data science. Secondly, they highlight the need to further explore non-financial data and extra-financial indicators to better assess organizational performance and resilience. Thirdly, they suggest addressing the identified geographical and thematic gaps, particularly in emerging countries and on questions of cybersecurity applied to risk management.

For practice, the study underscores the importance for decision-makers and risk managers of establishing proactive scientific monitoring, specifically targeting journals from the core (Figure 8) and prolific authors (Figure 9). Such monitoring would not only allow them to follow regulatory and technological evolution but also to anticipate paradigm shifts in governance approaches. Furthermore, the rise of ESG and AI issues calls for organizations to develop specific competencies and rethink their management systems by integrating these new dimensions.

Finally, by highlighting correlations between publication volume and scientific impact (Figure 13), as well as the structure of international collaborations, our results encourage strengthening inter-institutional partnerships and fostering integration into global scientific networks. This lever could help reduce regional disparities, stimulate methodological innovation, and enrich the diversity of approaches in the field of risk management and governance.

## 6. Conclusion

This study provides a structured and longitudinal bibliometric mapping of research at the intersection of risk management and governance over the period 1988–2025. Beyond a descriptive inventory of publications, the analysis reveals a substantive conceptual transformation within the field. While earlier contributions were predominantly anchored in compliance-driven internal control and financial risk monitoring frameworks, more recent developments demonstrate a progressive repositioning of risk management as a strategic governance capability oriented toward resilience, sustainability, and long-term value creation. In contrast to prior reviews that focused on specific subdomains such as Enterprise Risk Management effectiveness or board-level risk oversight, this research offers an integrated cartography of the intellectual architecture of the domain. The identification of ESG integration and artificial intelligence as structurally central themes within the motor quadrant of the thematic map represents a significant evolution relative to earlier literature, where these dimensions were treated as peripheral or adjacent topics. Furthermore, the positioning of

accountability as a highly central yet underdeveloped theme constitutes an original insight, suggesting an emerging theoretical bridge between governance ethics, organizational performance, and risk oversight in nonprofit and public-sector contexts.

These findings also generate practical implications for decision-makers and professionals. Public authorities and regulatory bodies may consider integrating ESG-related risk indicators, sustainability exposure metrics, and reputational risk monitoring tools into existing governance frameworks. The bibliometric evidence indicates that resilience-oriented and data-driven governance models are becoming dominant paradigms; consequently, policy frameworks should progressively incorporate predictive analytics and digital monitoring infrastructures. For nonprofit leaders and foundation directors, the results highlight the importance of formalizing governance mechanisms that connect risk registers to strategic objectives, establishing dedicated risk committees, and embedding accountability indicators into performance dashboards. Risk management professionals are encouraged to strengthen competencies in data analytics, ESG reporting standards, and AI-assisted risk detection systems, as these capabilities are increasingly reflected in high-centrality research streams. From a knowledge-monitoring perspective, practitioners should systematically follow leading journals specializing in corporate governance, sustainability management, public administration, and risk analytics, as these outlets structure the conceptual evolution of the field and signal methodological innovation.

Despite these contributions, several limitations must be acknowledged. The corpus is restricted to English-language publications indexed in Scopus, which may introduce linguistic and database selection bias. Although rigorous cleaning and normalization procedures were applied, bibliometric analyses remain dependent on the accuracy and completeness of metadata, including author names, affiliations, and keyword declarations. In addition, while the bibliometric approach allows macro-level structural interpretation, it does not assess the methodological rigor or empirical validity of individual studies, and therefore complements rather than substitutes systematic or critical reviews.

Future research could address these limitations by expanding the documentary base to additional databases and incorporating comparative cross-database analyses. The integration of altmetric indicators would allow a more dynamic assessment of societal and policy impact beyond academic citation counts. At the conceptual level, further empirical investigations could examine how accountability mediates the relationship between governance structures and risk performance, particularly within nonprofit and public organizations. Longitudinal studies exploring the operationalization of ESG metrics and AI-based risk tools within governance systems would also deepen understanding of the structural shift identified in this bibliometric mapping. By combining bibliometric cartography with more focused systematic synthesis, future scholarship may further consolidate the theoretical integration of governance, resilience, sustainability, and digital transformation within contemporary risk management research.

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