

Unveiling Insurance and Risk Management Insights Through Bibliometric and Cluster Analysis

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Abstract

Purpose : This study aimed to identify the intellectual developments in the domain of insurance and risk management for 52 years, spanning 1971 to 2022, through a bibliometric and cluster analysis.

Methodology : A total of 1,740 relevant research documents were retrieved from the Scopus database after applying pre-specified inclusion criteria. Using VOSViewer, techniques such as trend analysis, citation analysis, co-citation analysis, and keyword co-occurrence analysis were employed for performance analysis and scientific mapping.

Findings : The findings highlighted the temporal and spatial trend of publications, the most productive countries, journals, authors, and seminal articles, as well as the six major themes that have been studied in this domain. It also presented the emerging themes and outlined those that can be explored in future research. This study integrated the concept of risk management in the context of insurance to determine the developments and emerging themes in this area in the past five decades.

Practical Implications : From the managerial point of view, the study would help insurance companies comprehend the dynamics of risk management and would facilitate the regulators in formulating policies for better risk management and control.

Originality : To the best of our knowledge, this study is the first of its kind that undertakes a comprehensive bibliometric review to understand the research landscape of insurance and risk management. However, the study has certain limitations, including the reliance on a single database (Scopus) and certain shortcomings in the bibliometric technique itself.

Keywords : insurance, risk management, bibliometric analysis, cluster analysis, citation analysis, co-citation analysis

JEL Classification Code : G22, G32, G30

Paper Submission Date : July 25, 2023 ; **Paper sent back for Revision :** September 5, 2023 ; **Paper Acceptance Date :** September 25, 2023 ; **Paper Published Online :** November 15, 2023

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DOI : <https://doi.org/10.17010/pijom/2023/v16i11/173213>

The COVID-19 pandemic has changed the world in the most unprecedented ways. It has made us aware that the present is dynamic and the future can be highly uncertain. In such scenarios, the insurance sector comes to the rescue as it can absorb systemic risk under normal conditions and helps minimize the losses that occur during a pandemic or a natural catastrophe. The global financial crisis of 2007–2009, which led to the collapse of Lehman Brothers and American Insurance Group, raised questions about the ability of the insurance sector to soak risks (Eling & Pankoke, 2016). But trust has always been considered an essential ingredient for developing economic activity (Arrow, 1972) for every sector, including insurance (Guiso et al., 2008). With innovative products being offered as per the market's needs, the insurance sector has witnessed a boom, considering the probability of risk and uncertainty in the current circumstances. It has also been acknowledged that a well-structured insurance industry paves the way for the accumulation of long-term funds that can be used for the economic growth of a nation (Ul Din et al., 2020).

Insurance firms help individuals as well as entities by adequately compensating them for the losses for which concrete evidence has been duly received and verified. They offer financial services necessary for the economic development and growth of the economies. The key purpose of the insurance sector is to protect an individual against various risks and losses and, thus, provide financial stability under uncertain situations (Piljan et al., 2018). In this world of dynamism, uncertainty and inheritance of risks are becoming a part of the environment, and hence, absorbing risks without insurance is a challenge for individuals as well as businesses (Ahmed et al., 2010). An increase in the frequency of disasters, pandemics, and the magnitude of damages has manifested the need for insurance. Furthermore, the increased mobility of people, changes in the development of risks, and lifestyle transitions are also adding to the demand for insurance (Andreeva, 2021). Based on such a high degree of uncertainty, the banking sectors around the world have also witnessed an increase in levels of deposit insurance (Gupta & Sardana, 2021; Sardana & Shukla, 2020).

Risk is the potential danger, loss, or injury arising from uncertain events or activities (Bessis, 2015). Risk is inevitable in any business or any activity, but when diversified and well-managed, it has the potential to turn into value. Risk management aims to diversify and share the risks to mitigate adverse consequences and potential losses (Singhania et al., 2022). Considering the unpredictability that the world is facing due to political issues, natural calamities, technological advancements, and economic situations, risk management is a trustworthy approach used by individuals as well as companies to overcome uncertainty and reduce the impact of losses (de Araújo Lima et al., 2020). It is a continuous activity that helps identify, analyze, assess, eliminate, and limit the observed losses.

In the past few years, independent bibliometric studies have been conducted on various topics related to insurance as well as risk management (Brown, 2003; Chan & Liano, 2009; Cox & Gustavson, 1990). However, these studies do not show an integrative perspective of how insurance and risk management have undergone intellectual development. The current paper aims to fill this void. The study analyses and reviews the significant trends in insurance and risk management research from 1971 to 2022 using bibliometric analysis. The review covers the directions in terms of impactful publications on the topic of insurance and risk management, journal analysis for identifying the leading sources in this field, influential authors who have been working significantly in this field, and countries that have witnessed the highest publications in this domain.

This study attempts to answer the following research questions:

- ✦ **RQ1 :** How has the publication in the domain of insurance and risk management grown in the last 52 years?
- ✦ **RQ2 :** Which are the most productive countries that are contributing to this domain?
- ✦ **RQ3 :** Which are the most promising journals in this domain?
- ✦ **RQ4 :** Who are the seasoned authors in the field of insurance and risk management?

➤ **RQ5 :** Which themes under insurance and risk management literature have been dominating the literature, and which of them are emerging for future avenues?

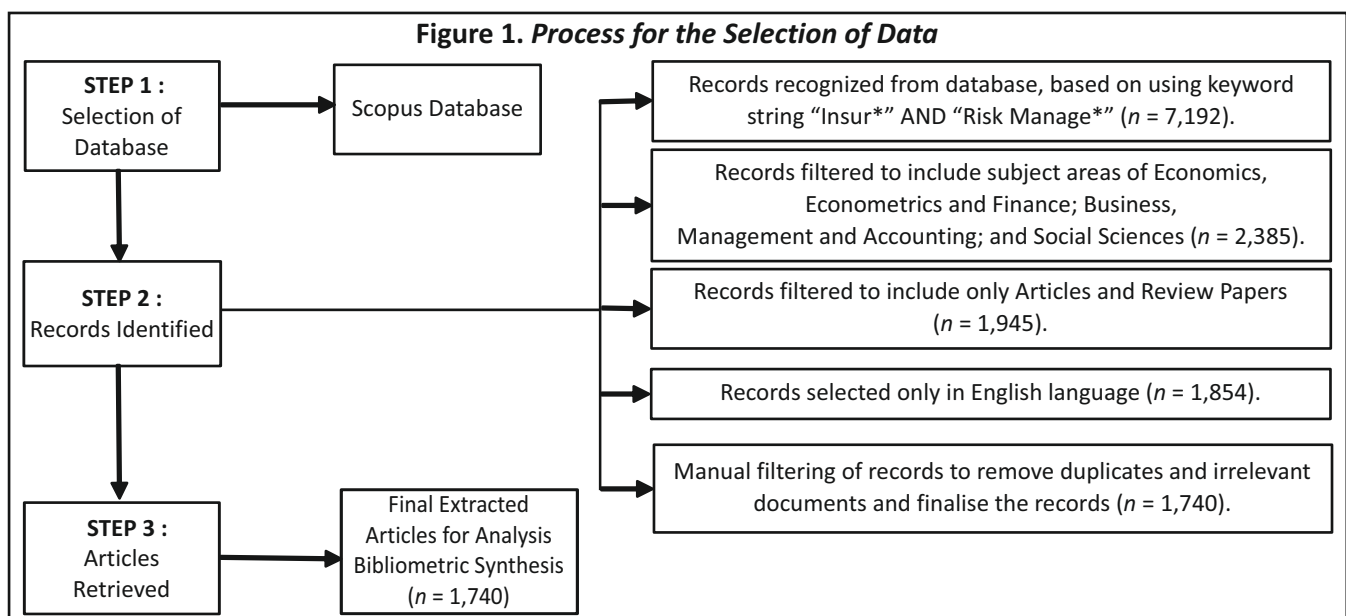
These research questions have been addressed by undertaking a bibliometric synthesis and review of 1,740 research articles extracted from the Scopus database. Bibliometrics is a tool that is used to study the research documents quantitatively (Pitsi et al., 2023; Rathi & Kumar, 2023; Ubgade & Joshi, 2022). It has gained popularity in recent times as it helps produce a high impact on research by handling large volumes of statistical data (Rashmi et al., 2021). Scholars use bibliometric analysis to generate insights into the emerging trends, performance of journals, research patterns, core journals, countries, and influential authors as well as publications (Ahuja & Madan, 2022; Farrukh et al., 2020; Verma & Gustafsson, 2020). Through bibliometric analysis, this study will be the first of its kind to help us understand the landscape of intellectual development in the domain of insurance and risk management and enable us to identify emerging themes.

Research Methodology

Database and Data Cleaning

The study uses the Scopus database to extract the relevant research documents for conducting the bibliometric analysis. The Scopus database has been chosen because of two primary reasons. First, the database is more suitable for studies related to the fields of business and management, as it has a broader coverage of the same (Farrukh et al., 2021). Second, this database is more user-friendly for extracting documents vis-à-vis other databases. Considering these reasons and referring to other studies (Farhan & Iqbal, 2021; Goel et al., 2022; Ludhani et al., 2023; Reddy et al., 2023), a string of keywords related to insurance and risk management was used in the article's title, abstract, and keywords in the Scopus database.

As of March 2023, 7,192 papers dating from 1971 to 2022 were gathered and evaluated according to predetermined standards (Figure 1). Only articles and review papers published in the English language were chosen from all the documents. A total of 1,740 papers were taken into consideration for the study once the



pertinent filters had been applied and the unnecessary documents—including duplicates—had been removed. In line with other research, the year 2023 was not taken into account to lessen the influence of a chronological component on the outcomes (Singhania et al., 2022; Singhania et al., 2023).

Indicators

Once the data cleaning was completed, the next step was to the analysis and identify various indicators. For this, we relied on two prominent techniques, that is, performance analysis and scientific mapping. The “performance analysis” was used to evaluate the productivity and influence of each dimension in the synthesis, such as articles, authors, journals, etc. (Farrukh et al., 2021; Pandey & Joshi, 2021). Similarly, the “scientific mapping” technique was used to identify the structure as well as the various dimensions occurring in the domain.

Software

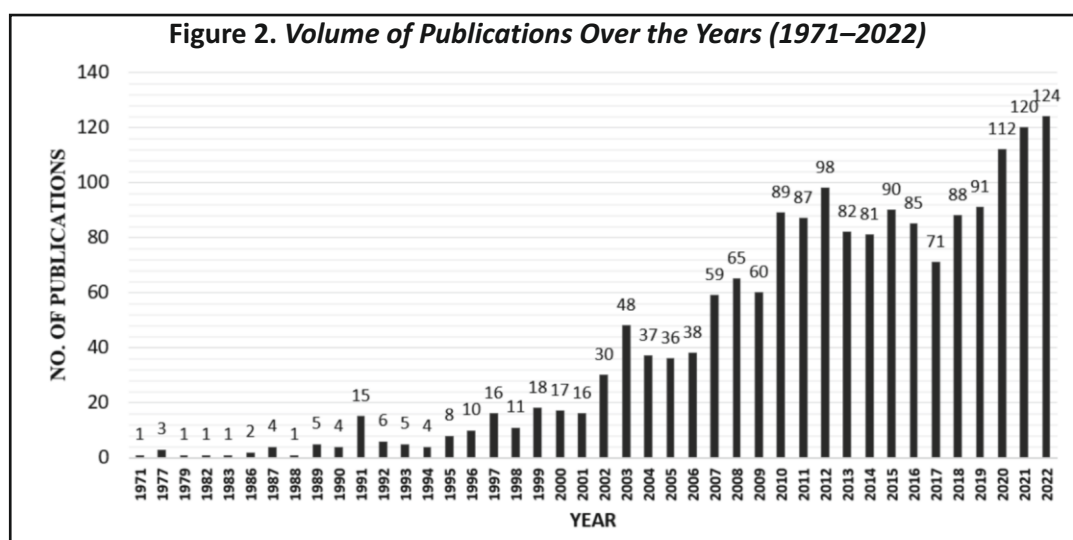
The study uses VOSViewer software for analysis. VOSViewer, developed by Eck and Waltman (2009), is open-access software based on JAVA and is mainly used for bibliometric data. It helps in visualization and graphical depiction of the literature to indicate the hotspots, intellectual networks, and emerging trends in the research field (Sardana & Singhania, 2023).

Analysis and Results

The bibliometric analysis has been used to discover the various aspects of any domain of literature, such as top countries, journals, authors, seminal articles, emerging themes, etc. (Singh et al., 2021; Xu et al., 2018). The subsequent sections highlight several analysis types, such as volume, citation, co-citation, and keyword analysis, to answer the research questions.

Trend Analysis of Publications

Figure 2 shows that the volume of publications in the domain of insurance and risk management has steadily



increased in the last five decades, with the number rising from one publication in 1971 to 124 publications in the year 2022. In recent years, especially during the COVID-19 pandemic (2020–2021), there has been an exponential rise in the number of publications owing to more significant concern for health and demand for insurance.

Volume and Citation Analysis of Countries

The area of insurance and risk management has been an essential topic of discussion globally. About 130 countries across the globe have significantly contributed to the research in this field. Table 1 considers the top 20 most productive and influential developed and developing nations actively publishing on insurance and risk management area. The classification of these countries is based on the affiliation country of the corresponding author (Sardana & Singhanian, 2022). The United States of America (USA) stood in the first position with 590 documents and 15,346 citations. The United Kingdom (UK) captures the second position with 172 documents and 4,075 citations, followed by Germany with 147 papers and 3,049 citations.

Table 1 demonstrates that industrialized nations have surpassed developing nations in the number of publications in the relevant study area. Compared to emerging countries, developed countries have paid more attention to insurance and risk management characteristics. Insurance protects a nation's citizens financially and

Table 1. 20 Most Influencing Countries Publishing in the Domain of Insurance and Risk Management Based on Citation Analysis

Rank	Country	No. of Documents	Citations	Type of Economy	ACPD
1	United States of America	590	15,346	Developed	26.01
2	United Kingdom	172	4,075	Developed	23.69
3	Germany	147	3,049	Developed	20.74
4	Switzerland	83	2,041	Developed	24.59
5	Netherlands	69	1,952	Developed	28.29
6	Australia	79	1,949	Developed	24.67
7	France	67	1,593	Developed	23.78
8	Canada	124	1,355	Developed	10.93
9	Italy	62	1,075	Developed	17.34
10	Sweden	20	958	Developed	47.90
11	China	77	894	Developing	11.61
12	Norway	16	830	Developed	51.88
13	Taiwan	39	612	Developed	15.69
14	Austria	20	559	Developed	27.95
15	Belgium	24	477	Developed	19.88
16	Hong Kong	11	418	Developed	38.00
17	Singapore	12	408	Developing	34.00
18	Spain	34	336	Developed	9.88
19	Malaysia	22	300	Developing	13.64
20	Japan	26	285	Developed	10.96

Note. ACPD : Average Citations per Document.

socially, which makes it an effective instrument for risk management. At 8–12% of all investments made in the economy of a developed nation, insurers or insurance corporations are the most crucial investors in the nation. This is an essential factor in a country's economic growth. Even the Human Development Index (2021) clearly showed that developed nations took the top ranks of the index because they understood the importance of health and development (World Population Review, 2021). Thus, they spend vast sums of money on the same compared to developing nations (World Health Organization, 2018). Life and non-life insurance positively affect the economy's economic growth (Ul Din et al., 2017).

It is also observed that not a lot of developing countries were able to get a place in the top 20 list, yet the three countries that were able to take a position are China (#11), Singapore (#17), and Malaysia (#19), and all are Asian economies. This shows the increasing attention and contribution of Asian economies toward insurance and risk management. Furthermore, Singapore's ACPD score of 34 is higher than the combined ratings of the top three nations. One possible explanation for this could be that developing economies have prioritized the insurance and health sectors more recently (Lagomarsino et al., 2012). In light of this tendency, insurance and risk management will be increasingly essential topics in the years to come for both developed and developing countries.

Influential Journals Based on Citation Analysis

Table 2 displays the 20 most influential journals publishing on insurance and risk management based on a maximum number of citations. The *Strategic Management Journal* (A*), published by Wiley-Blackwell, proved to be the most influential journal contributing toward this domain. Top management teams are considered the primary shapers of the strategic direction and its impact on the organization (Cannella et al., 2009). Risk management requires formulating strategies to protect the organization from current and future uncertainties, which is done by top executives (Birkinshaw & Jenkins, 2010). This depicts the relevance of strategic management in this field of study and justifies the rank of the *Strategic Management Journal*.

Table 2. 20 Most Influential Journals Publishing in Insurance and Risk Management Based on Citation Analysis

Rank	Journal	NOD	Citations	ACPD	Cite Score	Scopus Coverage	ABDC Indexed	Publisher
1	<i>Strategic Management Journal</i>	6	1,652	275.33	13.2	1980 to present	A*	Wiley-Blackwell
2	<i>Journal of Risk and Insurance</i>	41	1,604	39.12	3	1978 to 1979, 1996 to present	A	Wiley-Blackwell
3	<i>Geneva Papers on Risk and Insurance : Issues and Practice</i>	68	868	12.76	2.8	1999 to present	NA	Springer Nature
4	<i>Insurance : Mathematics and Economics</i>	56	798	14.25	2.8	1982 to present	NA	Elsevier
5	<i>American Journal of Agricultural Economics</i>	21	781	37.19	6.7	1919 to present	A*	Wiley-Blackwell
6	<i>Safety Science</i>	18	681	37.83	10.1	1991 to present	A	Elsevier
7	<i>Journal of Banking and Finance</i>	10	680	68.00	5.2	1977 to present	A*	Elsevier
8	<i>Risk Management and Insurance Review</i>	85	634	7.46	2.2	2006 to present	C	Wiley-Blackwell
9	<i>Agricultural Finance Review</i>	55	583	10.60	3.1	1980, 2000 to present	C	Emerald
10	<i>North American Actuarial Journal</i>	32	536	16.75	1.7	1997 to present	A	Taylor and Francis
11	<i>International Journal of Project Management</i>	6	529	88.17	14	1983 to present	A	Elsevier

12	<i>Environmental Science and Policy</i>	10	466	46.60	10	1998 to present	NA	Elsevier
13	<i>Journal of Risk Finance</i>	43	452	10.51	3	1999 to present	B	Emerald
14	<i>International Journal of Water Resources Development</i>	6	445	74.17	7.6	1983 to 1984, 1987 to present	NA	Taylor and Francis
15	<i>Management Science</i>	11	429	39.00	7.7	1969 to present	A*	Institute for Operations Research and the Management Sciences
16	<i>ASTIN Bulletin</i>	24	413	17.21	2.7	1958 to 1969, 1971 to 1975, 1977 to 1982, 1984 to present	A	Cambridge University Press
17	<i>World Development</i>	7	396	56.57	9.4	1973 to present	A	Elsevier
18	<i>Scandinavian Actuarial Journal</i>	23	329	14.30	2.8	1918 to present	A	Taylor and Francis
19	<i>Global Environmental Change</i>	5	302	60.40	15.7	1990 to present	A*	Elsevier
20	<i>Natural Hazards Review</i>	14	298	21.29	4	2000 to Present	NA	ASCE

Note. ACPD : Average Citations Per Document, TLS : Total Link Strength, NOD : No. of Documents.

The ranking is followed by the *Journal of Risk and Insurance* capturing the second position, and *Geneva Papers on Risk and Insurance: Issues and Practice* in the third place. *Strategic Management Journal* contributes only six papers on this topic, yet the citations of this journal (1,652) prove the supremacy and impact of this journal in the field. Similarly, *Global Environmental Change*, an A* journal in the 19th place, contributes only five documents, but the cite score is 15.7. *International Journal of Project Management*, an A-listed journal, standing at the 14th position, contributes six documents with a cite score of 14. This depicts the quality over quantity of research taking place in the said field.

As can be observed, most of the top 20 journals began between 1980 and 1990, thereby increasing the volume of research in this area. The plausible reason for this could be the liability of the insurance crisis of the USA, which led to a sharp increase in insurers' losses as well as insolvencies (Berger et al., 1992). Most of the journals are from the domain of insurance and risk. Others include finance, banking, mathematics, economics, actuaries, environment, and development. Considering the growing need for and importance of insurance and risk management, each area fulfills a different purpose and covers the void in the research journey of this topic. Moreover, the diversity in the journals also highlights that the theme of insurance and risk management has been dissected across multi-disciplinary themes. It is imperative to note that there could be other factors, such as the kind of research funding, structure of research being organized, and other macroeconomic factors, which are likely to impact the scope for publication by countries and journals.

Impactful Articles Based on Citation Analysis

The top 20 influential papers in the field of risk management and insurance have been determined via citation analysis, and they are presented in Table 3. It helps to find the paper's influence on a particular domain and the scientific community (Ding & Cronin, 2011).

Table 3 shows that two papers obtained rank one; both cited the maximum times (18 times). The first article (Hopt, 2011) is a conceptual paper that discusses the concepts of corporate governance and emphasizes how risk management is an integral component of the same. It also analyses the regulations and practices of various people involved in corporate governance (Hopt, 2011). The second paper (Kahneman & Tversky, 2013) is an empirical

Table 3. 20 Most Impactful Articles Based on Citation Analysis

Rank	Article	Source	Citations	Authors	Year	Type of Paper
1	Comparative Corporate Governance : The State of the Art and International Regulation	<i>The American Journal of Comparative Law</i>	18	Hopt	2011	Conceptual
2	Prospect Theory : An Analysis of Decision Under Risk	<i>Handbook of the Fundamentals of Financial Decision Making</i>	18	Kahneman & Tversky	2013	Empirical
3	Corporate Governance and Banks : What Have We Learned from the Financial Crisis?	<i>Federal Reserve Bank of New York Staff Reports</i>	16	Mehran et al.	2011	Conceptual
4	Area-Yield Crop Insurance Reconsidered	<i>American Journal of Agricultural Economics</i>	14	Miranda	1991	Conceptual
5	The Value of Enterprise Risk Management	<i>Journal of Risk and Insurance</i>	13	Hoyt & Liebenberg	2011	Empirical
6	Coherent Measures of Risk	<i>Mathematical Finance</i>	12	Artzner et al.	1999	Empirical
7	An Empirical Analysis of the Demand for Multiple Peril Crop Insurance	<i>American Journal of Agricultural Economics</i>	11	Goodwin	1993	Empirical
8	Crisis-driven Regulatory Reform : Where in the World is the EU Going	<i>The Regulatory Aftermath of the Global Financial Crisis</i>	10	Ferran	2012	Empirical
9	Index Insurance for Developing Countries	<i>Applied Economic Perspectives and Policy</i>	10	Miranda & Farrin	2012	Conceptual
10	Income Smoothing and Consumption Smoothing	<i>Journal of Economic Perspectives</i>	10	Morduch	1995	Empirical
11	The Efficiency of Weather Derivatives as Primary Crop Insurance Instruments	<i>Journal of Agricultural and Resource Economics</i>	10	Vedenov & Barnett	2004	Empirical
12	Barriers to Household Risk Management : Evidence from India	<i>American Economic Journal : Applied Economics</i>	9	Cole et al.	2013	Empirical
13	Risk, Crop Choice, and Savings : Evidence from Tanzania	<i>Economic Development and Cultural Change</i>	9	Dercon	1996	Conceptual
14	Adverse Selection in Crop Insurance : Actuarial and Asymmetric Information Incentives	<i>American Journal of Agricultural Economics</i>	9	Just et al.	1999	Empirical
15	The Determinants of Enterprise Risk Management : Evidence from the Appointment of Chief Risk Officers	<i>Risk Management and Insurance Review</i>	9	Liebenberg & Hoyt	2003	Empirical
16	Poverty Traps and Index-Based Risk Transfer Products	<i>World Development</i>	8	Barnett et al.	2008	Conceptual
17	Crop Insurance Policies and Purchases in France	<i>Agricultural Economics</i>	8	Enjolras & Sentis	2011	Empirical
18	Risk Management : Coordinating Corporate Investment and Financing Policies	<i>Journal of Finance</i>	8	Froot et al.	1993	Empirical
19	Crop Insurance Reconsidered	<i>American Journal of Agricultural Economics</i>	8	Glauber	2004	Empirical
20	Problems with Market Insurance in Agriculture	<i>American Journal of Agricultural Economics</i>	8	Goodwin	2001	Conceptual

paper that develops an alternative theory of choice, the prospect theory, among risky prospects. This helps in managing risk and making various decisions, including insurance, effectively and efficiently (Kahneman & Tversky, 2013).

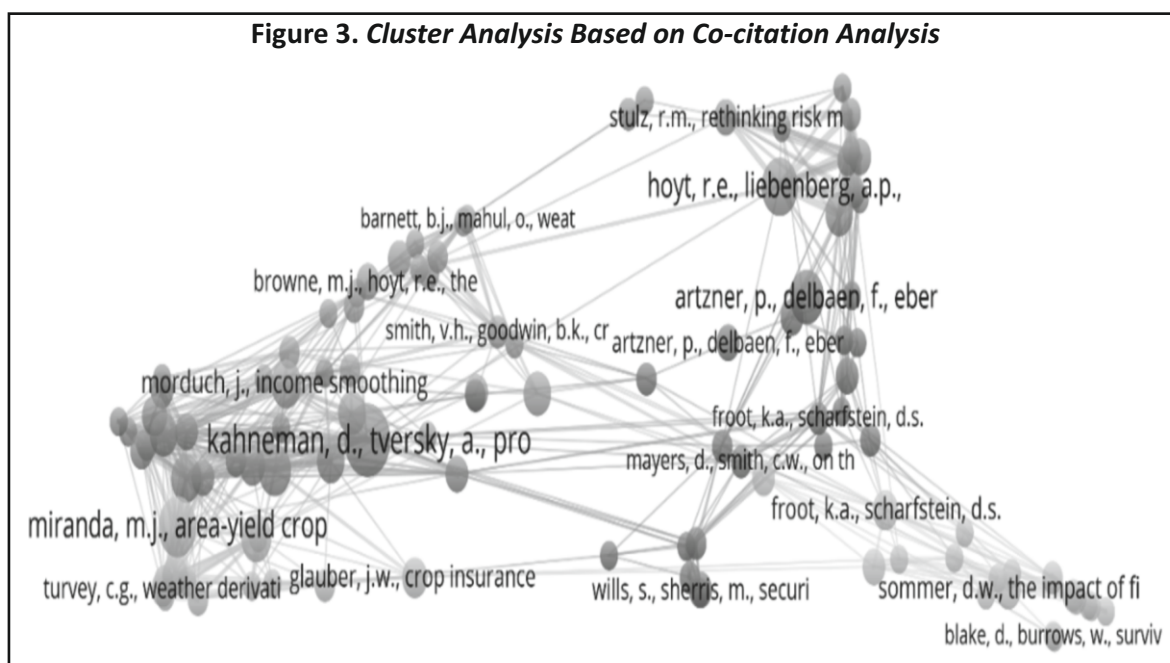
It should be noted that corporate governance is an essential domain in the field of insurance and risk management, as two out of the top three papers revolve around the theme of corporate governance. Both papers were published in 2011, just after the global financial crisis, signifying the importance of risk management. It is also noteworthy that some of the prominent papers were published after the 1980s, the time when the liability insurance crisis took place in the USA (Berger et al., 1992), and most of the papers were published after 2008, the time when the world was facing the global financial crisis. Additionally, multiple papers focus on single countries and regions such as the European Union, India, Tanzania, and France.

Cluster Analysis

The clusters of major themes have been identified through the co-citation analysis, which is used to recognize the intellectual frameworks in an area based on the evolution of emerging themes (Bhaiswar et al., 2021; Quttainah et al., 2023; Singh et al., 2021). Six separate clusters are depicted in different colors in Figure 3. Each of the six clusters has been expanded upon, as have their major themes.

Cluster 1 : Dynamics of Insurance and Risk Management

Cluster 1 is the largest cluster, with articles portraying the theme of insurance and risk management dynamics. The composition of insurance and risk management is widely dispersed across various sectors. An essential responsibility of the insurance sector is to look at the financial health of the industry (Chen & Wong, 2004), as this sector operates under a high degree of risk. To better understand a firm's financial health, it is crucial to examine these firms' solvency processes (Eling et al., 2007). Moreover, the dynamics of risk management are based on the



corporate policies of investments and financing (Froot et al., 1993). Due to the growing complexities of the market parameters, such as structuring, securitization, and pricing of longevity risk, insurance has become indispensable for risk management (Wills & Sherris, 2010). Large firms with the purview of building an excellent market-based image are also inclined toward managing reputational risk (Heidinger & Gatzert, 2018).

Cluster 2 : Instruments Related to Insurance and Risk Management

Cluster 2 is the second largest cluster, with articles revolving around the theme of the various instruments and related theories that play a crucial role in insurance and risk management. Understanding the various theories, such as the “prospect theory,” helps understand risk management's behavioral aspects (Kahneman & Tversky, 2013). These theories also help develop methodologies that shall be fruitful in hedging the price risk in various sectors such as agriculture, crops, etc. (Mahul, 2003). To mitigate multiple kinds of risks, instruments such as weather index insurance (Barnett & Mahul, 2007), flood insurance (Browne & Hoyt, 2000), and weather derivatives for agricultural-related risks have been developed. The success and efficiency of these instruments, especially weather derivatives, have been explored in various regions, and their performance has been found to vary in nature (Vedenov & Barnett, 2004).

Cluster 3 : Types of Insurance Products for Risk Mitigation

Cluster 3 is the third largest cluster. The articles under this cluster demonstrate the theme comprising diverse types of insurance products used for risk mitigation. Agriculture is one of the riskiest and most uncertain activities. There has been a steady increase and hype behind index-based agricultural insurance growth (Binswanger-Mkhize, 2012). Innovative insurance products like weather index insurance (Barnett & Mahul, 2007), multiscale index insurance (Elabed et al., 2013), and index insurance (Miranda & Farrin, 2012) are significant types of insurance that help in risk mitigation. Another innovation that has resolved many issues of agricultural farmers, thereby increasing demand, is the multiple peril crop insurance (Goodwin, 1993; Smith & Baquet, 1996).

Cluster 4 : Hedging of Risks Using Various Policies

Cluster 4 is focused on hedging various risks with the help of policies and tools. The best way to manage any firm's risks is to focus on the determinants of firm hedging policies (Smith & Stulz, 1985). The firm's capital structure, capital budgeting, and risk management policies are also integrated to have a comprehensive hedging framework (Froot & Stein, 1998). Furthermore, the firm's corporate investment and financial policies are also found to be significant in determining the risk-related dynamics (Froot et al., 1993). The government's role is also crucial in extending much-needed support for hedging. In such a scenario, survivor bonds can function as a game changer in reducing the mortality risk (Blake & Burrows, 2001).

Cluster 5 : Characteristics of Enterprise Risk Management

Cluster 5 comprises articles that point toward the various characteristics of enterprise risk management. The primary task is to understand the firms' characteristics from theoretical and practical angles to make risk management decisions (Nocco & Stulz, 2022). After identifying the theories, evaluating the factors associated with implementing measures for enterprise risk management (Beasley et al., 2005) is pertinent. The best use of such tasks can only be made when a thorough investigation of these programs is done to identify the potential value creation (Hoyt & Liebenberg, 2011). Since the decision-making about the risky ventures rests with the Chief

Risk Officer, their behavior shall be crucial in determining the enterprise's risk management potential (Pagach & Warr, 2011).

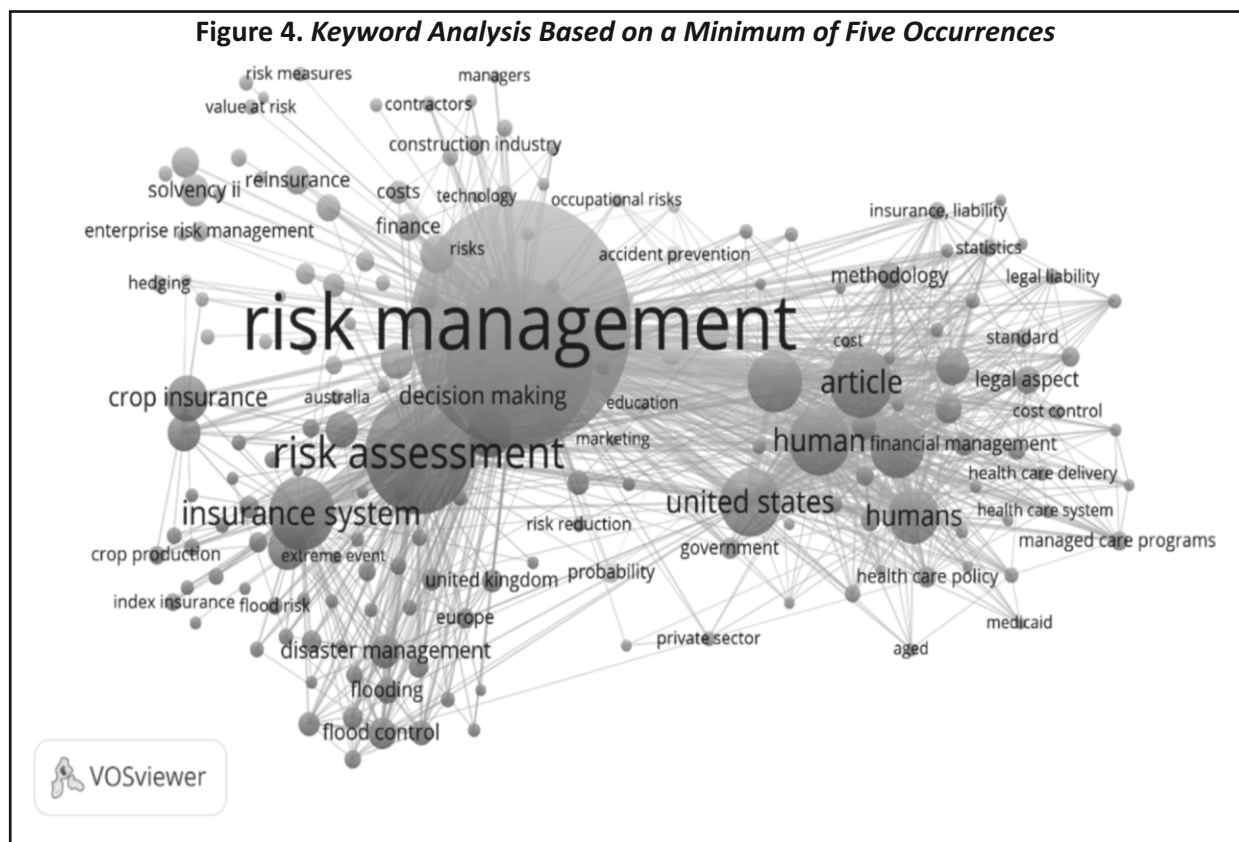
Cluster 6 : Issues and Problems in Insurance and Risk Management

Cluster 6 deals with the theme of various issues and problems related to insurance and risk management. The theme explores the dimension of risk aversion and how it impacts farmers in the agricultural sector (Holt & Laury, 2002). Based on various problems prevailing in the insurance sector, especially in the agricultural domain, the studies have explored the issues in market insurance (Goodwin, 2001). Crop insurance has been reconsidered (Glauber, 2004) owing to the introduction of various bills, and studies have tried to decipher how crop insurance behaves during catastrophic risk (Duncan & Myers, 2000). The problems related to climate risks have also been explored to provide the necessary solutions (Musshoff et al., 2011).

Keyword Co-occurrence Analysis

Keywords help to identify the theme of an academic article. By observing the co-occurrences between such keywords, researchers can find the current trending themes and future avenues of the topic to work on (Sardana & Singhania, 2022).

After limiting the minimum number of keyword occurrences to five, we examined 61,662 keywords in the database; only 2,018 of them satisfied the criterion (Figure 4). It is clear from the size of the nodes that “risk



management” and “insurance” have been the subject of extensive research. Other essential themes involved in the research of this domain are “risk assessment” (254 occurrences) and “index insurance” (128 occurrences). It is noteworthy that “climate change” (60 occurrences) and “disaster management” (41 occurrences) have taken a spot in the top 20 keywords due to the increasing importance and need for risk management and insurance in both areas. It is also to be noticed that the USA is the only country in the list of top 20 keywords, which highlights the contribution and importance of this country in the said domain, again justifying the Rank 1 of the USA in the country analysis. Considering the impact of the pandemic, “health insurance” (96 occurrences) has become one of the most prominent insurances in terms of health risk management.

Conclusion

The study is conducted using bibliometric analysis to identify the intellectual developments that have taken place in literature by answering specific research questions. First, the paper studies the growth trends of publications over the last five decades, which has shown an upward trajectory. Second, the analysis identifies the most productive and influential nations based on the volume and citation analysis. The developed countries are found to be the most effective and influential based on the deep concern of these nations towards health and insurance-related aspects. Third, we identify the primary sources of the publication of these articles, which shows the vast level of diversity as the journals belonged to multi-disciplinary areas. Fourth, the paper identifies the seminal articles in the area, and finally, it highlights the theme-based clusters that have evolved, along with the emerging themes that have scope for further research. The study finds that there is massive potential for exploring various dynamics of insurance and risk management as the area has still not reached its saturation stage.

Theoretical and Managerial Implications

The study brings to light significant aspects related to research in insurance and risk management, especially the growth and evolution in this domain. The study contributes to the theoretical understanding of the literature in the domain (Matta et al., 2022). From the managerial point of view, the study will help the insurance companies comprehend the dynamics of risk management, and the regulators will be able to formulate policies on these lines. The study will not only help future researchers understand the themes that have been uncovered over the years, but will also work on themes that have scope for further explorations. The researchers can use the outcomes of this study to justify the research gaps undertaken by them for conducting further analysis in this domain.

Limitations of the Study and Scope for Further Research

This study, despite making various contributions, suffers from some limitations. For one, a single database, that is, Scopus, is used. Scholars may make use of both Web of Science as well as Scopus databases for a comprehensive analysis. Furthermore, only one software for the bibliometric analysis has been used, while scholars may use various software such as Bib-excel, Gephi, Biblioshiny, etc., to understand the literature better. The bibliometric analysis itself suffers from certain limitations, such as the inability to differentiate between self-citations and other citations and considering only the corresponding author's affiliation country for analysis purposes (Kumar et al., 2023). Despite these limitations, the study may be considered as a bridge to identify the gaps in the research domain and further explore the emerging themes. The research avenues that can be explored in the future are index insurance, sensitivity analysis, risk allocation, and social insurance. These areas have wide potential for research and would enhance the understanding of the domain of insurance and risk management.

Authors' Contribution

Dr. Shubham Singhania and Varda Sardana conceptualized the idea and developed the initial outline of this research work. Dr. Amiya Kumar Mohapatra and Dr. Amit Kumar Singh validated and translated the idea into a detailed research framework. Furthermore, Dr. Shubham Singhania and Varda Sardana did a detailed review of the literature to find the research gaps. Dr. Amit Kumar Singh and Dr. Amiya Kumar Mohapatra collected and analyzed the data by adopting appropriate research tools & techniques. Dr. Shubham Singhania methodically analyzed the data and results and presented the findings along with the necessary interpretation. Dr. Amiya Kumar Mohapatra, Dr. Shubham Singhania, and Varda Sardana prepared the detailed manuscript. Finally, Dr. Amiya Kumar Mohapatra and Dr. Amit Kumar Singh concluded the research outcomes, along with the required copy-editing and formatting of the paper.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Funding Acknowledgment

The authors received no financial support for the research, authorship, and/or for the publication of this article.

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