



Risk Management Practices in Small and Medium Enterprises: A Bibliometric Analysis

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Bibliometric analyses are the studies of bibliographic contents that provide the general picture of the specific research area by identifying and classifying the journals. This explanatory research focuses on Risk Management (RM) practices for Small and Medium Enterprises' (SMEs) sustainability. The SMEs are always at higher risks in terms of small size and limited resources. This bibliometric review evaluates 3,709 Scopus-indexed documents to examine the effects of risk management practices on Small and Medium Enterprises (SMEs) for Sustainable Development (SD), that have accrued in the last 30 years (1991 – 2020). The review goals are to compile the volume, evolution trends, and geographical allocation of the literature, identify prominent authors, relevant journals, as well as publications; and finally to analyse the conceptual, intellectual, and social structures prevalent in this field. This review presents a yardstick for impending research reviews on the RM of SMEs for SD, shows the evolving intellectual structure of this inter-disciplinary arena, and proposes reference points for researchers entering this discipline. This research paper will be a valuable source for future researchers and publications interested in SMEs' risk management for sustainable development to capture the current research flashpoints and prospective research tips.

Key words: *Bibliometric Analysis, Bibliohiny, Evolution, Knowledge Production, Risk Management, Scopus, Science Mapping, Small-Medium Enterprises, Sustainability*



1. Introduction

It is globally acknowledged that small and medium-sized enterprises (SMEs) play a key role in several economies' business growth (Chishala, Musawa, & Kabwe), especially in the developing world ("The World Bank," 2020). SMEs serve the business world around the globe and contribute significantly to employment growth and sustainable development. These demonstrate around 90-percent of corporate entities and, likewise, 50-percent of career opportunities. In looming economies, formal SMEs reach up to 40 percent of the national income (GDP). By using irregular SMEs, these figures are considerably larger. As per projections, 600 million workforces would be required by 2030, which means SME evolution is highly crucial for most of the world governments ("The World Bank," 2020). Overall, lack of resources and lines of credit, absence of skilled staff, scarcity of raw materials, inadequate governance, lack of workforce with the appropriate leadership qualities, and the confined usage of modern, developing technologies have continually changed as obstacles to SME excellence (Kulathunga, Ye, Sharma, & Weerathunga, 2020).

Risk assessment is essential for a business enterprise because it provides absolute protection to the compliance and analysis of its regulations. Operational risk management can be a crucial aspect of SMEs' business crises (Virglerova, Khan, Martinkute-Kauliene, & Kovács, 2020). Handling of risks in business is becoming a primary concern that needs systematic attention in decisive strategies for the organisations (Gorzeń-Mitka, 2019). Companies can adopt sustainability initiatives by which risks may be mitigated by various techniques such as reporting sustainable development and foresighted responding to improvements in sustainability laws, legislation, and legal frameworks. A pragmatic commitment to sustainability helps to incorporate organisational risk control more efficiently and maybe a crucial strategic benefit in business globalisation (Virglerova et al., 2020).

Several scholars accented to the advantages of risk management for SMEs. The predominant implications are examined in steadily growing SME business performance, enhancing SME role in the particular market, improving consumer services and employee efficiency. The indirect impacts are noticeable not just in enhanced economic forecasts in the SME specific places but also in the world's economic metrics (Dvorsky, Belas, Gavurova, & Brabeneč, 2020). Implementing Business Risk Management (BRM) improves a company's capacity to mitigate damage, sustain earnings' uncertainty, and raise its payout ratio and investor confidence. The BRM practices help companies to handle different risks, including competitive, competition, collateral, operating, and financial risks that may impact the business activities by improving the business's capacity to define usefully, assess, and control the risk profile (Rehman & Anwar, 2019). The SMEs in Pakistan face various challenges containing low access to loan facilities, instabilities of economic policies due to rapid changing governments, lack of energy provision to industrial sectors, and a lot of renewable energy opportunities (Khan, 2020).



Key findings of a survey on the impact of COVID-19 on SMEs, conducted by (Small and Medium Enterprises Development Authority) SMEDA from 920 business respondents having an annual sales turnover of 29 billion PKR, shows that 95% of enterprises experienced a reduction in operations; 23% units lost 100% export orders, 92% businesses disturbed the supply chain, 48% business units laid off their employees, and 89% of enterprises were confronted with financial problems (Seth, Ganaie, & Zafar, 2020).

Pakistan has about 3.3 million SMEs involving production facilities, distribution companies, and setups at different stages. SMEs recruit 78% of non-agricultural workers, covering nearly 25% of manufacturing exports and over 30% of GDP (Khan, 2020). Keeping in view the current research trends and academic interest, the following research questions are formed:

RQ1: How many research studies have been carried out in the domain of Enterprise Risk Management (ERM) for SMEs during the past 30 years, and what type of trends have been studied?

RQ2: Which important risk factors have been identified and found to impact SMEs for Sustainable Development?

2. Literature review

Bibliometric analysis is an area of study that is gaining growing interest from the research community and is particularly influenced by the rapid growth of digital technology and access to the internet. Emerging from both the domains of bibliotheca and information technology, bibliometric analysis has become a basic tool for determining investigations. In the literary works, several scientific fields, such as business, management, finance, healthcare and clinical practice, innovative technology, entrepreneurial spirit, marketing, and the global market, there are so many publications that are offering full scientometric analyses (Merigó & Yang, 2017). In 1926, bibliometrics was introduced when Alfred Lotka studied trends of author efficiency and presented the original scientometric laws. In 1969, Alan Pritchard introduced the name "bibliometrics" to characterise the use of statistical and quantitative techniques for analysing journals and other materials (Ahmad, Asif, Alam, & Slots, 2020). It required a lot of time to recognise and analyse data, several decades back due to manual acquisition of the knowledge process. Nevertheless, because of developments in computer technology and the internet over the past few years, it has become very quick to examine the data at the moment (Cancino, Merigó, Coronado, Dessouky, & Dessouky, 2017). In a specific area of study, bibliometrics could demonstrate the newest developments, scientific paths, and prevailing themes, and thus it facilitates the subject matter globally, for the detection of existing deficiencies in a particular study domain (van Nunen, Li, Reniers, & Ponnet, 2018).



Sustainable development attracted the attention of the academia in the 1980s (Lélé, 1991) and started pointing out the adverse effects of the global pursuit of economic growth at the cost of natural resources (Mitlin, 1992). Sustainable growth is a creation that addresses current needs without undermining future generations' ability to fulfill their necessities (Lélé, 1991). Sustainable development is the equitable growth of existing and potential global population wellbeing, respecting the carrying surrounding ecosystems (biological) to power (Bleischwitz & Henricke, 2004). WCED notes that "critical objectives which follow from the concept of SD" are: (1) restoring growth, (2) evolving growth quality, (3) fulfilling critical employment, food, electricity, water, and sanitation needs, (4) maintaining healthy populations, (5) capital protection and enhancement, (6) reorientation and risk management, (7) integrating climate and the world economy in making decisions, and (8) refocusing foreign trade affairs (Lélé, 1991), risk management being one of the critical objectives. Risk is defined as the chance of anything that will influence established goals (Aven, 2011). The crucial distinction between risk and uncertainty is fluctuating probability concentrations; most risks may be estimated and measured. On the other hand, uncertainty is a contextual and multidimensional notion that varies depending on its origins and the degree to which it is performed (Sharma, Leung, Kingshott, Davecik, & Cardinali, 2020). Therefore, risk management is referred to as controlling the risks effectively by involving appraisal and decision-making (Greenwood, 1997).

Giannakis and Papadopoulos (2016) identified that widespread sustainability threats for many businesses include greenhouse gas pollution, natural hazards, incidents, electricity usage, packaging waste, logistics, transportation damage, boycotting a firm's goods, lawsuits against businesses to reclaim financial harm incurred by environmental factors, non-compliance with regulations or immoral behavior, social justice risks resulting from unequal wages and job conditions, and the goods and electricity bills due to fuel inefficiency. RM in SME businesses has attracted the attention of several scholars due to the extremely increased significance of SMEs and the application of RM in SME businesses which is a novel subject, and most areas relevant to it are under investigation (He & Lu, 2018). Being the backbone of ecosystems, SMEs have a significant role in the world-wide economic sector; they foster the challenging nature of economic structures and have an impact, explicitly or implicitly, on big corporations, in particular in the field of rising growth and creativity (Virglerová, Kozubíková, & Vojtovič, 2016).

SMEs demonstrate no distinction between the business's critical planning, evaluation, and a company's formal planning framework, as SMEs are distinguished by the founders' central position, diversity of responsibilities, and intimate interaction with workers. Startups often neglect or disregard threats in the commencement process. New business owners typically face a high degree of confusion and the need for fast decisions (Jayathilake, 2012). Companies ignore an overarching risk assessment system that is not properly linked and operates without implementing the company's policy. It tackles concerns of content



classification, risk accountability, lack of early recognition, and inadequate emphasis on defining potential risks. The existence of operational risk is acknowledged to most businesses, however, the value of risk management is viewed with differing severity, and strategies are mostly restricted to casual assessing risks but risk assessment practices are not usually a normal component of critical business decisions (Hudakova, Schönfeld, Dvorský, & Luskova, 2017). Risk management can enhance business performance and productivity when it helps the potentials, while developments prevent the organisation from threat during inadequate business situations. Furthermore, the companies that adopt risk management would derive the advantages of productivity, strategic positioning, and growing profitability due to the company's competitive focus (Hanggraeni, Ślusarczyk, Sulung, & Subroto, 2019). Some SMEs integrated risk control functions to reduce and predict damages. Such functions needed much work and energy to address internal risk, business risk, investment risk, operational risks, ecological risk, and electoral risk. As businesses increase in size and sophistication, even with numerous technology-based programs, these are also at potential losses because internal risk control is losing ground to highly networked and sophisticated fraudsters (Angeline & Teng, 2016).

Objectives:

- (1) The study's initial objective is to analyse the overall volume, growth path, and distribution of published documents across countries, types of papers, and research trends within the RM-SMEs knowledge base.
- (2) The second core objective is to analyse the selected articles in detail to know what type of studies are conducted in risk management in small and medium enterprises and sustainable development.

3. Research Methodology:

There are numerous phases in the general workflow of science mapping analysis: data retrieval, preprocessing, network extraction, normalisation, mapping, analysis, and visualisation {Cobo, 2011 #41}. Bibliometrics is characterised as applying quantitative and statistical methods to analyse academic outcomes (Elaish, Shuib, Ghani, Mujtaba, & Ebrahim, 2019). A bibliometric analysis is defined as one of the best techniques for assessing and analysing the study production and success of academicians, professionals, educational institutions, countries, and even journals in an established subject area (Olawumi & Chan, 2018). The researcher used a scientometric process in this proposed study with a study period limited to 1991-2020. The research focused on Scopus metadata indexed comprehensive library and information science research publications. The information accumulated from the Scopus excerpt database (<https://www.scopus.com/search/>) on 25 November 2020 using the following keywords:



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TITLE-ABS-KEY ( "sustainable development" AND "SME" ) AND (
LIMIT-TO ( LANGUAGE , "English" ) ) AND ( LIMIT-TO ( SRCTYPE
, "j" ) OR LIMIT-TO ( SRCTYPE , "p" ) )
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OR

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TITLE-ABS-KEY ("SME" AND "sustainability" ) AND ( LIMIT-TO (
LANGUAGE , "English" ) ) AND ( LIMIT-TO ( SRCTYPE , "j"
) OR LIMIT-TO ( SRCTYPE , "p" ) )
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OR

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TITLE-ABS-KEY ( "sustainable development" AND "risk management"
) AND ( LIMIT-TO ( LANGUAGE , "English" ) ) AND ( LIMIT-TO (
SRCTYPE , "j" ) OR LIMIT-TO ( SRCTYPE , "p" ) )
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The hunt produced 4255 documents, and further analysis used those records containing journals, books, book chapters, and conference papers. The bibliographic details were collected from the Scopus database in Bibliography TeX (.bib) type. The R Studio installed and loaded the bibliometrix R kit (version 3.0.3 published 28-Sep-2020). The R-package bibliometrix (<https://www.bibliometrix.org/>) offers comprehensive analysis in scientometrics and bibliometrics, developed in R, a freely accessible framework and infrastructure as rugged, efficient mathematical algorithms, access to high-quality computational procedures, and optimised visual analytics software, which are the right features for scientific computing to prefer R to other languages (Aria & Cuccurullo, 2017). The biblioshiny: “the shiny interface for bibliometrix (an R tool for comprehensive science mapping analysis)” is a web-interface framework for the bibliometrix tool (<https://www.bibliometrix.org/Biblioshiny.html>). Five hundred forty-six (546) duplicate articles were removed, and 3709 articles were selected, and the BibTeX Scopus file was rendered to the Biblioshiny interface for data processing. For selecting key articles wherein risk management, and sustainable development were discussed in the context of small and medium enterprises, Visual Basic for Applications (VBA), scripting comprising macros was written in Microsoft Excel. Only 14 articles were highlighted containing the three keywords in the articles’ abstracts; those 14 articles are analysed for detailed study.

4. Results and discussion:

As described in the Research Methodology portion, the database for evaluating the common topics is taken from the Scopus Database in the papers linked to SMEs, SD, and RM. After researching the keywords: Small-and-Medium Enterprises OR Sustainable Development OR Risk Management, a collection of 3,709 records was accumulated. The Scopus Database datasheet was imported into a format corresponding to the R format. General information extracted from 1,540 sources can be found contained in Table 1.

Table 1: Main information about data configuration

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1991:2020
Sources (Journals, Books, etc.)	1,540
Documents	3,709
Average years from publication	6.74
Average citations per documents	11.25
Average citations per year per doc	1.373
References	135,752
DOCUMENT TYPES	
Article	1,942
Book	15
Book chapter	86
Conference paper	1,450
Conference review	51
Review	162

Table 1: Main information about the data depicts that 3,709 documents initiated within the time the timespan of 1991 and 2020 and disseminated in 1,540 documents.

Figure 1: Source Impact (H-Index)

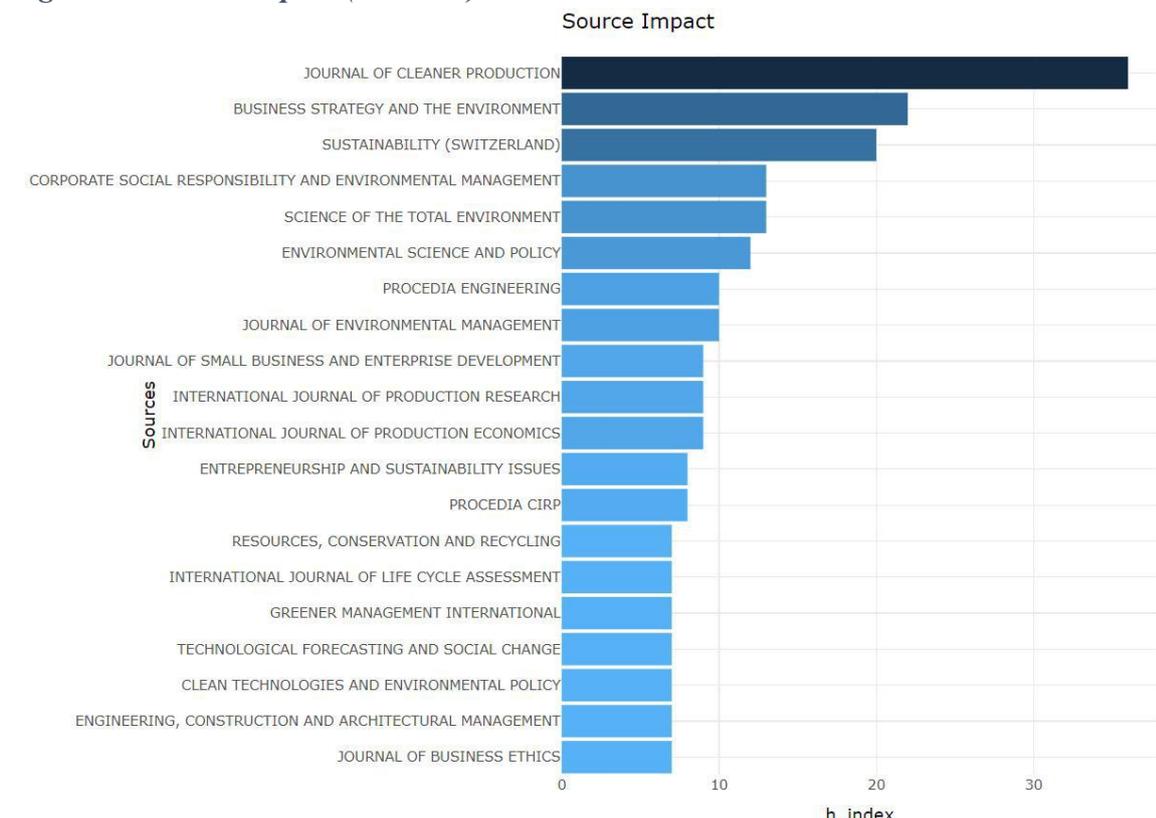
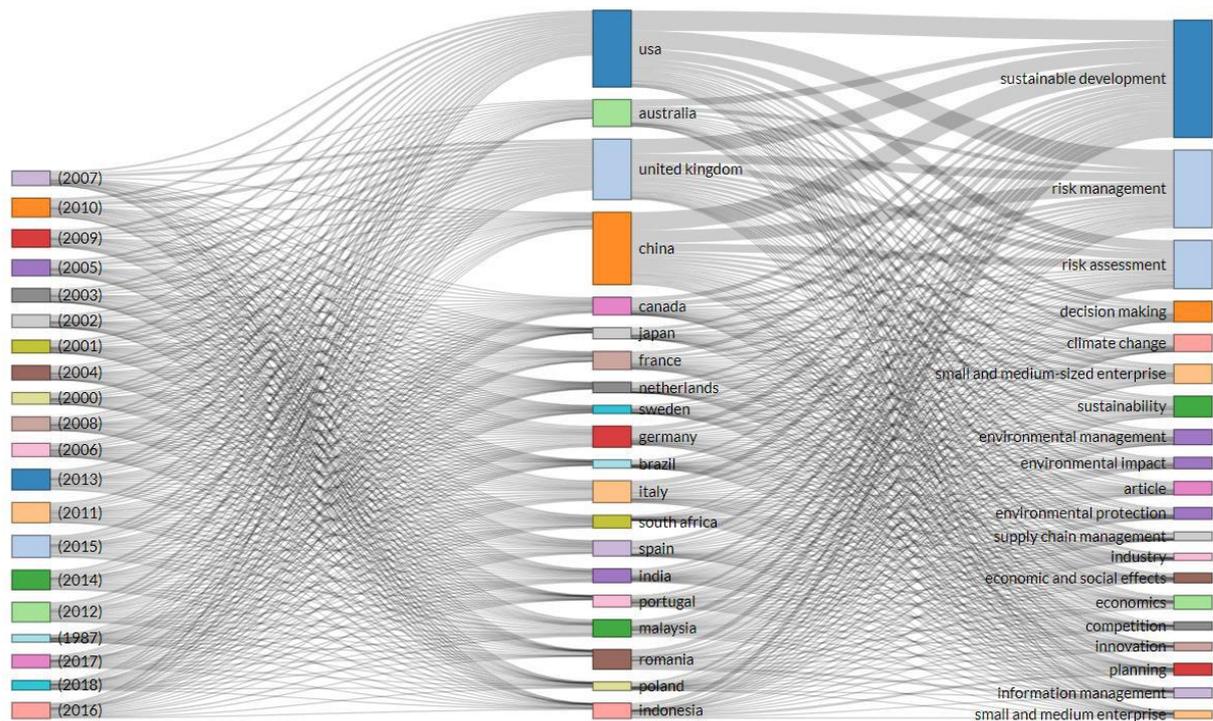


Figure 1: Source Impact (H-Index) shows a graph of the results of the h_index of the sources. Figure 1 illustrates that the Journal of clear production makes a distinction with h_index greater than 30.0. Two journals, Business Strategy and the Environment and Sustainability (Switzerland), have an h_index equal to or greater than 20.0. The subsequent five journals, Corporate Social Responsibility and Environmental Management, Science of the Total Environment, Environmental Science and Policy, Procedia Engineering, and Journal of Environmental Management, have an h_index of equal to or greater than 20.0. The remaining journals have an h_index of less than 10.0.

Figure 2: Three-Fields Plot



In Figure 2: Three-Fields Plot, the main items of three fields (i.e., references, countries, and keywords) are visualised and how they are related through a Sankey diagram. The top 20 references, countries and keywords, formed a three-field plot.

Figure 3: Country Collaboration Map

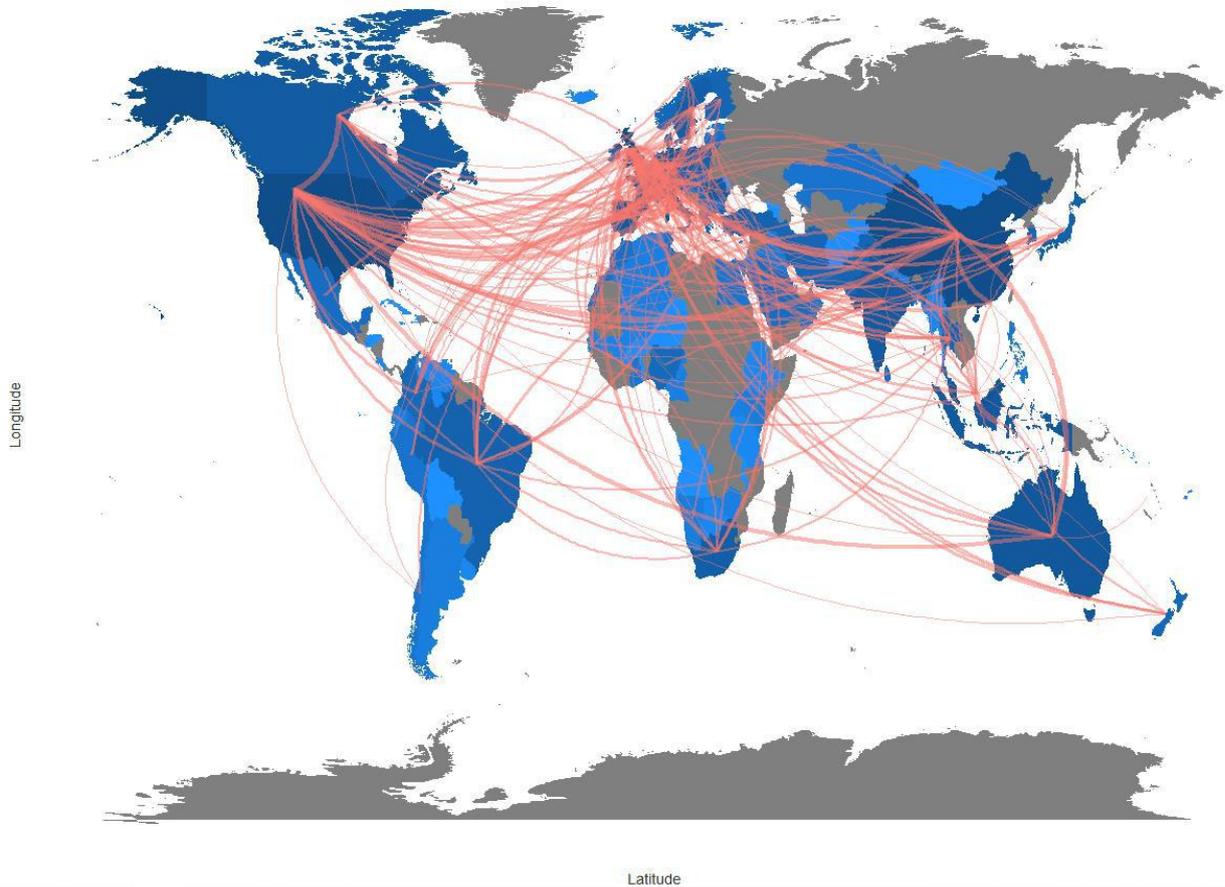


Figure 3: The Country Collaboration Map shows the collaboration path in the world: the colour blue on the figure illustrates the presence of networks of study with other nations. It is important to note that countries with a sizable proportion of RM, SME, and SD studies have higher collaboration rates, which means that they have exchanged expertise and have enabled each other to identify appropriate research findings. The countries that have been identified to provide the most important communication patterns are Australia, Belgium, China, Indonesia, Italy, New Zealand, and Switzerland; with the other nations sometimes quite far from each other.

Figure 5: Word Growth (year-wise) shows the top 10 frequently words used in publications. The figure illustrates that the words Sustainable Development, and Risk Management are highly growing between the years 1991 and 2020, and these are still growing in the research. The words Risk Assessment, Small-and-Medium Enterprises, and Sustainability are moderately growing in the literature of previous 30 years. While the words Planning, Decision Making, Economics, Climate Change, and Environmental Management are rising but with a very low growth rate.

Figure 6: Topic Dendrogram

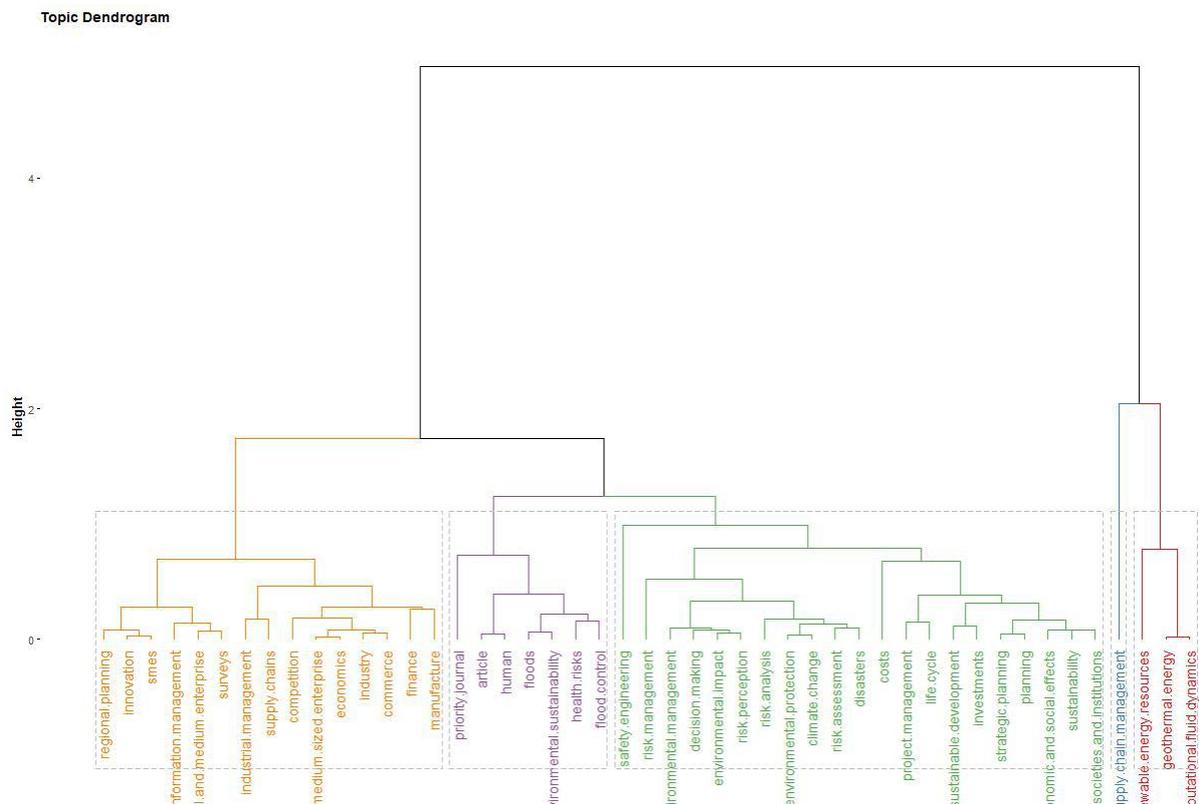


Figure 3: Topic Dendrogram shows that there are two main topic clusters. The first cluster consists of 3, and the second cluster contains 2 sub-clusters having more subclusters. Subcluster 1.1 has further subclusters consists of specific topics on SMEs, industry, industrial planning, innovation, regional planning, supply chain, eCommerce, competition, and finance. It can be seen in subcluster 1.1 that most of the studies use the surveys as methodologies of studies. Subcluster 1.2 contains topics related to humans, floods, flood control, health risks, and informational sustainability. Subcluster 1.3 contains topics of disasters, risk perception, risk analysis, risk management, informational management, decision making, safety engineering, environmental impact, climate change, environmental protection, sustainable development, sustainability, societies and industries, planning, investment, costs, and project management. Cluster 2.1 is a big cluster consisting of supply chain management. Subcluster

2.2 covers the topics of renewable energy resources, geothermal energies, and computational fluid dynamics.

Figure 7: Collaboration network (countries)

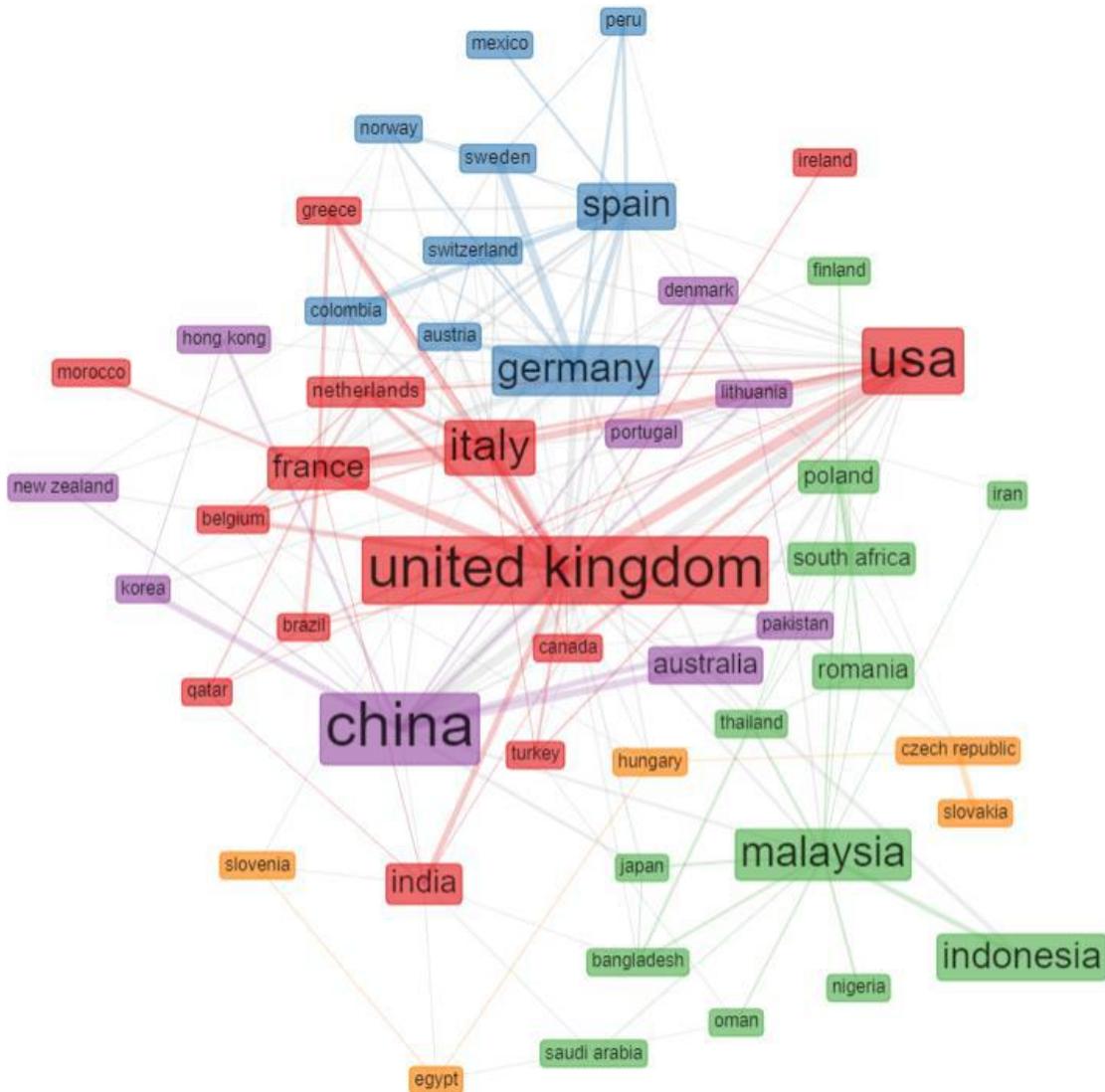


Figure 7: Collaboration network (countries) shows the country's network of partnerships. The colour indicates the cluster, while nodes reflect contributions, and the interaction between nodes is described by the border. It indicates that there have been close ties between the United States and the United Kingdom, Italy and France in cluster 1 (red color) Malaysia and Indonesia in cluster 2 (green color), China and Australia in cluster 3 (magenta color), and Germany and Spain in Cluster 4 (blue color), Czech Republic, Slovakia, Slovenia and Egypt in a small cluster (orange color) about the RM, SMEs, and SD publications. It is interesting to note that Pakistan also exists in cluster 3 along with its sizeable contributions. It is also

supported that, in cooperation with countries, these nations have been collaborating on separate initiatives.

Table 2: SMEs risks in sustainable development

Sr. No	Title	Year	Summary	Reference
1	Local Risks and Global Impacts Considering Plant-Specific Functions and Constraints: a Case Study of Metal Parts Cleaning	2010	<ul style="list-style-type: none"> Assigned chemical threats and environmental effects can be controlled to achieve the efficiency of manufacturing processes. Production procedures include the washing of metal pieces for the preparation of surface treatments or the completion of metal processing by SMEs. Local hazards are closely linked to plant-specific circumstances, and it is important to consider associated threats, relevant rules, and regulations. 	(Kikuchi & Hirao, 2010)
2	Strategies to mainstream climate change, energy, water and food security nexus knowledge and skills	2015	<ul style="list-style-type: none"> Threats to unsustainable climatic, hydrological, and ecological tipping points in many areas of the planet, including irreversible global warming, freshwater resource over-extraction, and irreversible decrease of ecological resilience. Awareness of the threats to their investment from climate change. By investing in energy and water conservation, businesses will slash energy and water prices and greenhouse gas emissions. The majority of small and medium-sized businesses have not completely adopted energy-saving opportunities because investors do not have the expertise and skills to utilise renewable technology effectively. 	(Smith & Dyer, 2015)
3	Risk management in manufacturing SMEs in South Africa	2015	<ul style="list-style-type: none"> SMEs are probably less profitable and less efficient than big corporations because they have minimal managerial and market experience, lack sufficient resources, and are subject to cumbersome regulatory and procedural criteria. Supply chain disturbances that are unplanned or market environmental disruptions, 	(Smith & Dyer, 2015)

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- such as transport delays and port stoppages due to strikes or injuries, supplier disability due to fires or earthquakes, or floods may add to their perceived vulnerability. Constantly evolving and rapidly changing political, economic, and social environments in general.
- External threats are more dominant among owner-managers in the context of legislative criteria, loss of expertise, and labor strife.
 - The production side of the value chain is riskier than the supply side, while its internal environment does not carry major threats.
 - Two main practices are prevailing risk-mitigating types of activities, "building relationships" and "business continuity."
 - Risk expectations vary among the owner-managers, but all accepted that their expertise and experience affected their risk decision-making.
- 4 Research on 2015 increasing risk management efficiency as support for corporate sustainable development (Smith & Dyer, 2015)
- The key goal of the study is to assess the possibilities of increasing the effectiveness of risk control to ensure successful business growth.
 - The need to view hazards not only as dangers but also opportunities that need to be addressed throughout the course of risk management.
 - Risk-taking relies on the behaviour of firms when faced with risky circumstances and their confidence in risk control as well.
 - The study highlights a correlation between perceived risk and the scale of the organisation and stresses that risk-taking strategies involve thorough assessments to define all potential impacts and convert risk management initiatives into strategic pillars.
- 5 The evaluation and application of the TRIZ method for increasing eco- 2017 (Feniser et al., 2017)
- The principles of growth, creativity, and risk management in SMEs establish a flow map for applying the TRIZ approach in SMEs and assessing the state of progress in those

	innovative levels in SMEs		businesses.	
6	The risk management practices in the manufacturing SMEs in Cape Town	2017	<ul style="list-style-type: none"> • Quick and effective procedures, goods, and sustainable resources are obtained by using the TRIZ approach in SMEs. • The main purpose of this paper was to define risk management practices in the development of small and medium-sized businesses in Cape Town. • SMEs in the industrial sector recognise, but not to a wide degree, the risk control measures applicable to 'managing' their respective undertakings for sustainability. • Found that respondents remain ignorant of the factors that render successful risk control, which essentially helps to improve the challenges of SMEs. • To achieve complete risk coverage, both workers and owners must align their activities to recognise and handle operational threats within their reach to ensuring that these risks are successfully handled in a systematic strategy. 	(Sifumba, Mothibi, & Ezeonwuka, 2017)
7	Artificial Intelligence-Based Commercial Risk Management Framework for SMEs	2019	<ul style="list-style-type: none"> • Business risk evaluation and management could be built and managed as external resources for a community of SMEs leveraging artificial intelligence technology, big data, and deep learning innovations, helping them to share costs and benefits. • The research offers a conceptual structure focused on artificial intelligence components for business risk evaluation and management solutions, market risk types, datasets, and workflow levels. 	(Žigienė, Rybakovas, & Alzbutas, 2019)
8	The role that small and medium-sized enterprises play in sustainable development and the green economy in the waste sector, South Africa	2019	<ul style="list-style-type: none"> • By the usage of scarce capital and emissions, as well as waste, SMEs may put considerable pressure on the ecosystem. • SMEs respond to the burden of the supply chain in terms of the broad-based black economic empowerment act and take part in acts of social responsibility. • Many SMEs are not environmentally conscious and larger companies can, as part of a 	(Higgs & Hill, 2019)

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| 9 | Alleviating Financing Constraints of SMEs through the Supply Chain | 2019 | <p>successful risk control policy, accept managing environmental liability in the supply chain.</p> <ul style="list-style-type: none">• Manufacturers are accountable for the disposal of waste and the recycling of wider industries and also for sustainable growth.• Provided a conceptual model describing the functioning of knowledge systems in strategic relations between financial institutions and supply chain companies and why transaction details in the supply chain will minimise information asymmetry and enhance access to external funding for SMEs.• Missing details ensure that transactions between small and medium-sized enterprises and vendors can function as alerts to banks that can help banks obtain confidential details from small and medium-sized enterprises, thus minimising information irregularities.• Banks can change interest rate policies and risk control plans, thus supplying SMEs with funding services. According to the financial sector, the framework for enhancing the external financial climate of small and medium-sized businesses will support the whole supply chain, promoting sustainable production and growth for small and medium-sized enterprises. | (Yang, Chen, Gu, & Fujita, 2019) |
| 10 | The assessment of non-financial risk sources of SMEs in the V4 countries and Serbia | 2019 | <ul style="list-style-type: none">• Build and evaluate a risk profile for SMEs in V4 countries with Serbia• Legal, protection, personal and organisational risks are greater. | (Oláh, Virglerova, Popp, Kliestikova, & Kovács, 2019) |
| 11 | When internal control is effective for the firms, is it effective for small and medium enterprise? | 2019 | <ul style="list-style-type: none">• The analysis was carried out to examine the efficacy of internal controls carried out by small and medium-sized businesses, which also functioned as one of the support mechanisms for a company's organisational survival and productivity in large enterprises.• Two metrics have had a profound impact on internal management, namely connectivity and knowledge. | |

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| 12 | Risk Management Implementation for Sustainable Development of Romanian SMEs: A Fuzzy Approach | 2020 | <ul style="list-style-type: none">• These two items may be achieved by SMEs, both easily and without standardised regulation.• This analysis seeks to examine the behavioural variables leading to the application of risk assessment in Romania's SMEs.• The acts of SMEs in the application of risk management are the expectations of partners, risk management preparation, and a pioneer in implementation.• The mindset towards risk is shaped by the lifetime of the organisation and the perception of the significance of risk control. | (Ciocoiu, Prioteasa, & Colesca, 2020) |
| 13 | A holistic assessment of the risks encountered by fast moving consumer goods SMEs in South Africa | 2020 | <ul style="list-style-type: none">• This study aims to evaluate threats to expose Quick Moving Consumer Goods (FMCG) SMEs to sustainability problems, primarily technical, political, financial, and enforcement risks.• The integration of social, environmental, and economic threats, which are central components of resilience's sustainability system components in risk evaluation, offers a more comprehensive view of the causes of risk, particularly emerging areas of risk that are becoming increasingly relevant in a constantly shifting world climate. | (Chakabva, Tengeh, & Dubihlela, 2020) |
| 14 | The internationalisation of SMEs in Central Europe and its impact on their methods of risk management | 2020 | <ul style="list-style-type: none">• The research aims to examine the effect of the internationalisation of SMEs on risk management and to identify the gaps in expectations of the value of sustainability.• The findings suggest that, more frequently than in domestic firms, a specialist risk officer is allowed to deal with risk control in foreign companies.• Depending on the company's position in the foreign sector, there are also variations in the interaction between risk control approaches and risk mitigation methods. The foreign sector is more focused on risk control strategies that foster a more secure outlook for sustainability. | (Virglerova et al., 2020) |
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Out of 3,707 documents, only 14 articles were found that were related to “Risk management” or “Risk assessment” AND “SMEs” OR “Small and Medium Enterprises” AND “Sustainable Development” OR “Sustainability”. Table 1: SMEs risks in sustainable development summarises the outcomes of the shortlisted articles. The summary depicts that very little research work is done on risk management in small and medium enterprises for sustainable development.

5. Conclusion

The study aimed to review literature containing the keywords Sustainable Development (SD) for Small and Medium Enterprises (SMEs) over the last 30 years (between 1991 and 2020), containing 3,707 documents. The Journal of Clear Production, Business Strategy and the Environment, Sustainability, Corporate Social Responsibility, Environmental Management, and Science of Total Environmental are the top five journals publishing documents related to sustainability, risk management, or small-medium enterprises. Yearly topic trends on sustainable development started in 1991-1996 very slow, then grew faster in 2006 and afterward 2015 the research boosted. Risk management comes to the second, and small-sized enterprises are on the third level in yearly topic trends.

The study of 14 selected articles reveals the chemical risks of manufacturing processes in metal parts, threats of climatic, hydrological, and ecological tipping points, including irreversible global warming, over-extraction of groundwater supplies, waste management, recycling, and permanent decline of ecological resilience in many parts of the world, rapidly changing and evolving political, economic and social environments in supply chain disruptions in the fields of banking and manufacturing. The literature focuses further on the management of operational risks.

The previous research also discusses the different strategies to cope with negative risks (threats), and positive risks (opportunities) with the induction of risk managers in small and medium businesses, and risk assessment through artificial intelligence. The previous research also focuses on close coordination between employees and business owners to plan, create a risk profile, close monitoring, and mitigate the risks more effectively by risk-reducing techniques.

The study concludes that the literature in risk management for small-and-medium businesses’ sustainability is scant. There is room for research opportunities for the evaluation of risk management in SMEs for sustainable development. Future researchers are recommended to perform quantitative and qualitative research studies, especially in Pakistan, as no such significant study is conducted yet.



It is important to address certain limitations of this bibliometric analysis. The first search limitation of this study was the constraint of the Scopus database. Although Scopus is the leading global database, but it does not contain all records related to RM, SMEs, and SD. Other international databases such as PubMed, Web of Science could also be used for the same. The substance of the archive has expanded to almost 76 million documents since its inception in 2004, comprising journals from 1788-2019, rendering it among the fastest-growing abstract, bibliographic, and reference datasets, and is still increasing by 3 million documents per year (Baas, Schotten, Plume, Côté, & Karimi, 2020). Secondly, quantitative approaches are used for bibliometric analysis. Therefore, it is impossible to interpret the material or the quality of the publications (Dunk & Arbon, 2009). This may mean that, although discussing a different subject than SMEs, SD, and RM, several of the other articles would be used in the analysis. A broader content analysis is suggested for further study based on these restrictions characterising bibliometric analysis.



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