RESEARCH ARTICLE

Role Of Social Protection And Disaster Management: A Bibliometric And Systematic Literature Review

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Abstract

The role of social protection has emerged as a strategy to minimize post-disaster impact by building resilience in the community. This approach is increasingly being used in post-disaster risk reduction. This study aims to review the role of disaster management and social protection in various literature through bibliometric analysis and systematic literature review using the SPAR-4-SLR protocol. The Scopus database was used to retrieve the article using selected keywords. Citations, keywords, and country analyses were used for a bibliometric review. The SPAR-4-SLR protocol was used to identify on social protection and disaster management. This study was generated over 30 years from Scopus and Google Scholar databases; over 1089 texts from various disciplines were retrieved. The bibliometric analyses revealed five different clusters were formed. Social protection and disaster management are emphasized to strengthen community resilience, especially in developing countries.

Keyword: Poverty; Resilience; Vulnerability

Introduction

Indonesia has been experiencing a deadly disaster over the last few decades. As Indonesia has vulnerable geographical conditions, Indonesia can experience many disasters in the future. The damage of natural disasters has been discussed in the early modern era, but for developing countries like Indonesia, the frequency and complexity of its disaster poses an additional burden on the economy. Government and societal collaboration are needed to reduce the damage of disasters (Hutagalunga et al., 2019). Furthermore, the impacts of natural disasters are not the same across all segments of society, worsening the existing economic disparities (Wickramasinghe, 2014).

Thus, social protection is increasing acknowledgment as a tool to reduce vulnerability in disaster risk science and increase adaptive capacities (Rana et al., 2022a). Some research argues that social protection instruments should be considered because of their essential role in the general framework of disaster risk management (Vakis, 2006). Previous study reveals that social protection programs could help poor households arrange coping strategies for natural disasters (Fitrinitia & Matsuyuki, 2022; Rana et al., 2022b; Shaw & Kishore, 2023). Unfortunately, the

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developing country is associated with a lack of comprehensive social protection systems (Aleksandrova, 2020).

The study reveals the present social protection system in Indonesia through research done by scholars. This study examines the form of social protection in Indonesia. Finally, this study outlines suitable policy recommendations based on research reviews to provide better social protection and disaster management programs.

Towards an Understanding of the Social Protection and Disaster Management

As the global landscape with increasing disasters sets new challenges and discourses for social protection, a changing approach is needed to face the increasing risk of disasters. Most developing countries are vulnerable to natural disasters, which can be associated with the lack of comprehensive social protection systems (Aleksandrova, 2020). The social protection agenda has grown steadily into a more complex and multidimensional framework (Rana et al., 2022a). In traditional terms, social protection emerged to tackle poverty, inequality, and vulnerability issues. Social protection is relatively fragmented, and developing social protection forms needs adjustment and comprehensive exploration.

In developing countries, social protection is a multifaceted concept. Generally, social protection systems are meant to assist individuals, households, and communities better manage risks and support the critically poor (Holzmann & Jørgensen, 2001). The other research defines social protection as a comprehensive approach integrating social protection, disaster risk reduction, and climate change adaptation, known as adaptive social protection (ASP) (L. Davies, 2016). This approach suggests that social protection must integrate with disaster risk reduction and climate change adaptation. Hence comprehensive social protection synergizes the efforts to reduce vulnerabilities of damage.

The recent framework of a part of social protection called shock-responsive social protection (SRSP) focuses on covariate shocks that impact a large population simultaneously because of massive disasters (O'brien et al., n.d.). The Shock-responsive social protection (SRSP) attempts to reduce short-term vulnerability, while the program focuses on transformative capacity by addressing long-term and underlying causes of vulnerability (Béné et al., 2018). The international consensus about the social protection system is echoed in international frameworks like United Nations Sustainable Development Goals 2015-2030. This study, therefore, explores Indonesia's current research and themes used for social protection in disaster risk reduction.
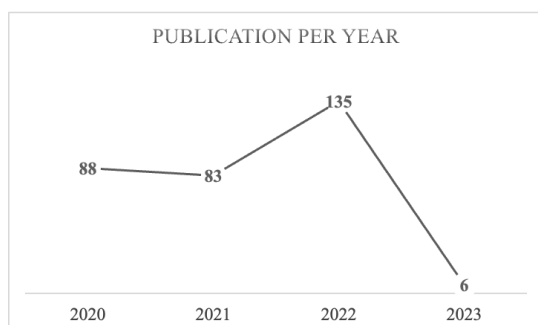
Method

This study uses a systematic literature review to analyze and synthesize relevant studies to identify the gaps within them. This study seeks to systematically search for, appraise, and synthesize research evidence, often adhering to guidelines on the conduct of a review (Grant & Booth, 2009). Systematic literature review, as methodology, encapsulate the process of assembling, arranging, and assessing existing literature in a review domain (J. Paul et al., 2021). In this study, we examined the scholarly literature on social protection and disaster management and created a framework for extant knowledge following the research approach used by Paul et al. (2021).

We began the search process with Google Scholar and Scopus databases as the primary sources of this study. Publish or Perish application performed to identify the publication from the primary database. In the first screening, we used the keywords *"perlindungan social"* AND *"management bencana"* in Google Scholar gave us 981 document results. Bahasa was performed in this keyword research aims to find the research from the Indonesia database. The database led to many hits that exceeded three-digit numbers and were a mixture of scholarly and non-scholarly publications. Many journal publications, conference proceedings, reports, book chapters, and research students.

Therefore, to ensure a more relevant article in this paper, we opted for a publisher-specific database in the range SINTA 1-6. SINTA is national accreditation for Indonesian Journal or national indexer. The publisher-specific search gave us the following number of published works: Sinta 1 (0), Sinta 2 (8), Sinta 3 (8), Sinta 4 (28), Sinta 5 (23), Sinta 6 (4), unaccredited (241). The cover period for this study is 2020 – 2023. The author determined the time frames for the studies to portray Indonesia's social protection and disaster management research. However, based on the available data, the resulting metadata was afterward refined and evaluated, resulting in a selection of 49 highly relevant studies on the specific topic

Graph 1. Number of Publication per Year (2020-2023)

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Publish or Perish and Scopus were used to retrieve articles on social protection and disaster management. The keyword was chosen from documents indexed in the database (Table 1). The keyword was searched by tittle, abstract and keywords used by the author's. no limit pf the year was applied the search criterion. The database was searched on January 14th 2023. The database provided metadata on each article. A repetition of publication was observed in the dataset, but in the arranging process, this type of article was excluded.
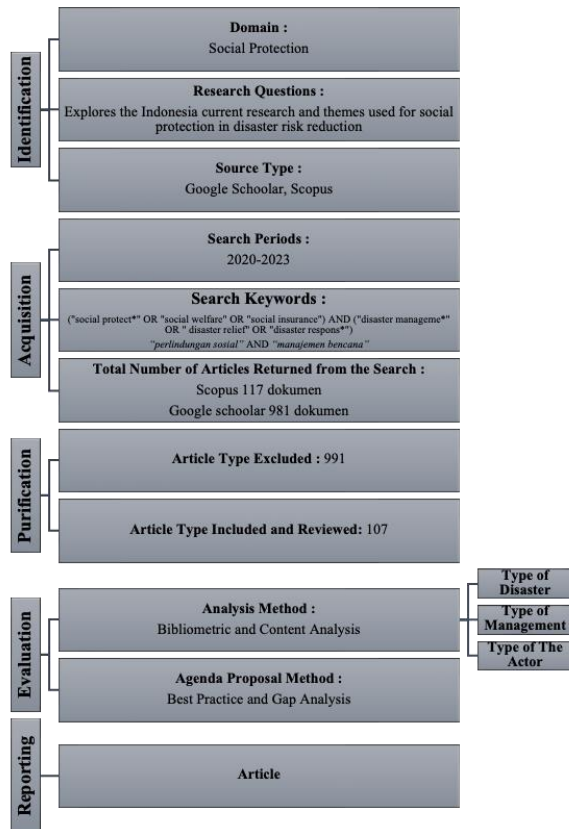
Table 1 Keywords used to retrieve documents

Keywords Search	Search Criteria	Database	Research Results	Date Searched
("social protect*" OR "social welfare" OR "social insurance") AND ("disaster manageme*" OR " disaster relief" OR "disaster respons*")	Title, Abstract, and Authors Keywords	Google Scholar	981	January 14th, 2023
		Scopus	108	

As a comparative analysis, the researchers also utilized the Scopus database to explore similar themes from other countries, employing the keywords "social protection" AND "disaster management" to retrieve metadata from 117 documents. Subsequently, the selection was narrowed down to 108 documents. Additionally, a search on Google Scholar yielded 981 documents. However, given the focus of this study on social protection in Indonesia, the analysis primarily concentrated on publications authored by researchers from Indonesia.
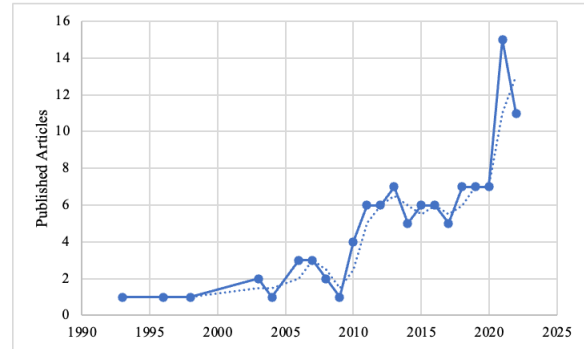
Results and Discussion

Publication Trend in Social Protection

Several studies have been published to elucidate the concept of social protection (Brown et al., 2018; M. Davies et al., 2013; Oosterhof et al., 2009; S. K. Paul & Routray, 2011). The interpretation of social protection varies across different countries (Akerkar, 2007; Heltberg, 2007; Mboera et al., 2011), However, in recent decades, the scope of social protection has broadened and expanded beyond simply addressing social protection in the aftermath of disasters. It now encompasses a wider range of phenomena, including natural disasters and those triggered by climate change (Coirolo et al., 2013; Gilfillan, 2019; Zheng et al., 2022).

Figure 1. The SPAR-4-SLR Protocol in Social Protection

Research on social protection has witnessed a notable increase alongside the expansion of its scope and subject matter. Despite experiencing a decline during 2005-2009, the overall trend in the reviewed article database has increased. Out of the 107 articles that met the inclusion criteria after the review, there is a clear indication of an increasing focus on social protection in the context of disasters.

The research can be divided into three main phases: 1) A period of relative stability between 1990 and 2004, with a gradual fluctuation in the volume of publications. Although there was a decline in 2004, the overall trend remained steady; 2) Rapid growth periods occurred in 2004 and 2020, although there were occasional fluctuations and declines in 2009, 2014 and 2017. However, even during these decline periods, the number of publications was still higher compared to the 1990s; 3) A plateau phase in 2020, marked by a significant increase that began in 2018 and is projected to continue rising until 2022. After decades of exploration, deepening, debates, and arguments, research on social protection has reached a relatively mature stage.

Figure 2 The Trend of the Published Articles (Reviewed) of Social Protection From 1990-2022

Contribution of Countries

Out of the 107 articles focused on social protection, they were contributed by authors from 32 different countries who collaborated. Among these countries, there are 18 nations with a cumulative number of authors exceeding 5. The United States tops the list with 83 authors, China with 44 authors, and the United Kingdom with 22 authors. Interestingly, the following countries in the ranking are from Asia, with Indonesia having 20 authors, Japan with 16 authors, the Philippines with 14 authors, and India with 11 authors.

Globally, there is a growing interest in research on social protection among countries in Asia and Europe. However, South America and Africa countries have demonstrated comparatively less engagement in this field of study. The connectivity among researchers reveals the presence of five major groups of countries that exhibit strong collaboration and share common research interests. The first cluster includes Germany, the Netherlands, Switzerland, and Sweden. The second group comprises the Philippines, Australia, Hong Kong, and Canada. The third group comprises the United States, South Africa, the United Kingdom, Austria, and Japan. The fourth and fifth groups of countries are represented by Bangladesh and Malaysia, respectively. These clusters signify collaborative networks and shared research endeavors within specific regions.

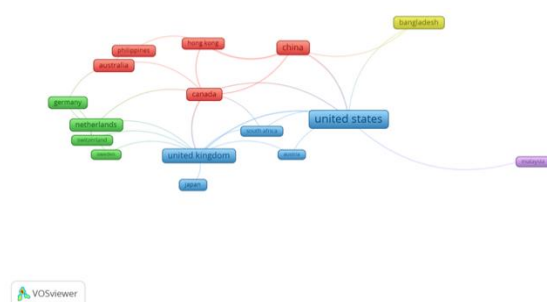**Figure 3 The Trend Global Publication of Social Protection From 1990-2022**

Table 2 Ranking of the top 10 most cited journals in the field of social protection

Code	Authors	TP	YP	TC	PF
P90	Paul S.K., et all.	Household response to cyclone and induced surge in coastal Bangladesh: Coping strategies and explanatory variables	2011	213	Cyclone
P82	Davies M., et all.	Promoting Resilient Livelihoods through Adaptive Social Protection: Lessons from 124 programmes in South Asia	2013	195	All
P48	Brown P., et all.	Natural disasters, social protection, and risk perceptions	2018	182	Natural Disaster

P102	Oosterhof L., et all.	Donation to disaster relief campaigns: Underlying social cognitive factors exposed	2009	108	Natural Disaster
P86	Gray M., et all.	Environmental ethics for social work: Social work's responsibility to the non-human world	2012	105	All
P52	Kosec K., et all.	Aspirations and the Role of Social Protection: Evidence from a Natural Disaster in Rural Pakistan	2017	39	Floods
P14	Oluyase A.O., et all.	The Challenges of Caring for People Dying From COVID-19: A Multinational, Observational Study (CovPall)	2021	36	Pandemic
P92	Shughart II W.F.	Disaster relief as bad public policy	2011	34	Hurricane
P66	Schulte in den Bäumen H., et all.	Labour forced impacts and production losses due to the 2013 flood in Germany	2015	32	Floods
P58	Wan J., et all.	Income diversification: A strategy for rural region risk management	2016	31	All

TP title publications, *YP* year publications, *TC* total citations, *PF* publication focus

Contribution of Authors

Among the top 10 publications with the highest number of citations, all of the top 5 authors have a significant impact, with H-Indexes exceeding 10. The H-Index distribution for each author is as follows: Paul with an H-Index of 15, Davies with an H-Index of 16, Brown with an H-Index of 48, Oosterhof with an H-Index of 11, and Gray with an H-Index of 52. A high H-Index value indicates the author's quality and credibility in social protection. Among these authors, Gray holds the highest H-Index. While Gray's publications may not have the highest number of citations, they possess the highest H-Index value, suggesting a strong influence and reputation in the research on social protection.
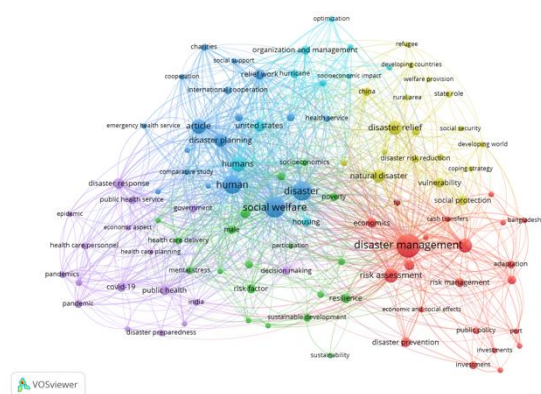
Figure 4 Occurrence of author's state in Social Protection Research Between 1990-2022

Keyword Analysis

The author initially used 1,098 metadata to generate 4,501 keywords in the keyword analysis process. After extraction, it was found that the keywords "disaster management" and "social welfare" emerged as the predominant concepts, appearing most frequently.

Figure 5 Keyword Correlation in Social Protection Research Between 1990-2022

The keyword "disaster management" exhibits a strong correlation with "risk assessment" and "risk management". On the other hand, the keyword "social welfare" shows a strong correlation with "human" and "disaster". Furthermore, the keyword "COVID-19" displays a significant correlation with "disaster preparedness", "public health", and "pandemic". These correlations highlight the interrelatedness of these concepts within the context of the analyzed keywords.
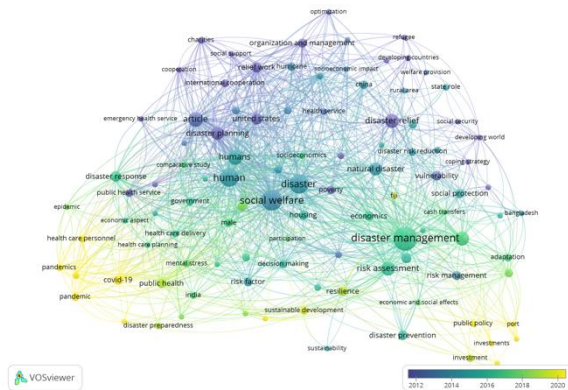
The cluster analysis on keywords reveals the presence of four major clusters: 1) disaster management, 2) social welfare, 3) disaster relief, and 4) COVID-19. However, these clusters can be expanded into ten clusters, which include: 1) disaster management, 2) social welfare, 3) disasters, 4) humans, 5) public health, 6) COVID-19, 7) disaster risk reduction, 8) social security, 9) poverty, and 10) developing countries. In order to gain a deeper understanding of the strength of the linkages between these keywords, further research is required. Exploring the relationships and interconnections between these clusters can provide valuable insights into the dynamics and interactions related to social protection and disaster management within the field of study.

In general, the clusters of "disaster management" and "social welfare" appear to dominate the keywords. However, uniquely in this analysis, the keyword "decision making" is found to have strong correlations with all four clusters. The cluster indicates the crucial role of decision-making in the various aspects of social protection efforts. It highlights that decision-making is a significant factor in determining and implementing strategies for social protection in the event of a disaster.

While the government plays a vital role in providing solutions for social protection during disasters, it is important to acknowledge that other actors, such as communities, individuals,

and the public, also have essential roles. The analysis underscores the multifaceted nature of social protection, where decision-making and the involvement of various stakeholders are crucial for effective and comprehensive social protection strategies.

Figure 6 Keyword Correlation in Social Protection Research Between 1990-2022

Between 2012 and 2020, there were notable developments in keywords, including the emergence of the "public policy" keyword, which shares the same cluster as the "port" keyword. The inclusion of the port context in research on social protection is associated with the issue of climate change, as the negative impacts, such as rising sea levels, have become more pronounced in the past decade. The research focused on climate change and port-related issues indicates a shift in attention towards port security concerns stemming from climate change (Coirolo et al., 2013; Gilfillan, 2019; Kuriakose et al., 2013; Ulrichs et al., 2019)

Furthermore, the cluster related to Covid-19 presents a relatively new set of keywords in social protection research. The keywords that emerged within the 2020 timeframe show strong correlations with "pandemic," "public health," "disaster preparedness," and "healthcare planning." In recent social protection research, there has been a notable emphasis and mention of public health as a new and trending research topic, alongside the established focus on ports and climate change issues. The Covid-19 pandemic has undoubtedly brought public health concerns to the forefront, prompting researchers to explore the intersection of social protection and healthcare in response to global health crises (Chan, 2020; Sanjaume-Calvet, 2023; Ulrichs et al., 2019).
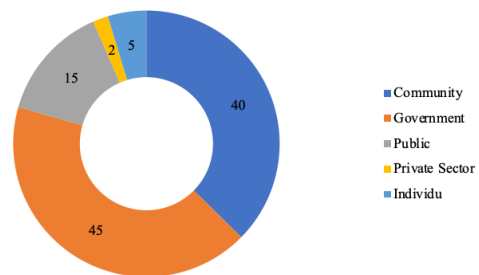
Actor In Social Protection

In the research on social protection, the provision of social protection involves several actors. Based on the analyzed metadata, at least five actors are identified to play a role in social protection: the government as the primary actor, the community as a supporting actor, individuals in specific contexts, the private sector, and the public (a combination of government and the private sector). Government actors tend to have the largest share and dominant role in providing social protection. They are often responsible for developing policies, implementing programs, and allocating resources for social protection initiatives. The community also plays a significant role, as it can provide support, resilience, and local knowledge in addressing social protection needs.

The private sector has a growing role in social protection, and further research can focus on exploring their involvement and contributions. Additionally, studying the role of individuals in providing disaster social protection is an important area for further investigation. By examining the roles and contributions of the private sector and individuals, researchers can understand the diverse actors involved in social protection and identify

potential areas for collaboration and improvement in disaster response and social protection mechanisms.

Figure 7 A Type of Actor in Social Protection

Among the 107 metadata obtained, the government's role is predominantly focused on managing large-scale and long-term disasters, such as pandemics (Ali Maher et al., 2021; Sanjaume-Calvet, 2023), On the other hand, community actors have a significant role in local-scale disasters (Ali Maher et al., 2021; Khan et al., 2013; Wardiono et al., 2021); In the context of pre-disaster management, public, private sector, and individual actors play various roles (Yang et al., 2022; Zheng et al., 2021, 2022). These actors contribute to preparedness, risk assessment, and mitigation measures before disasters occur. The division of roles among different actors highlights the importance of coordinated efforts and collaboration between the government, community, public, private sector, and individuals in comprehensive disaster management and social protection. Future research can delve deeper into understanding each actor's specific roles, interactions, and contributions in various phases of disaster management and social protection.
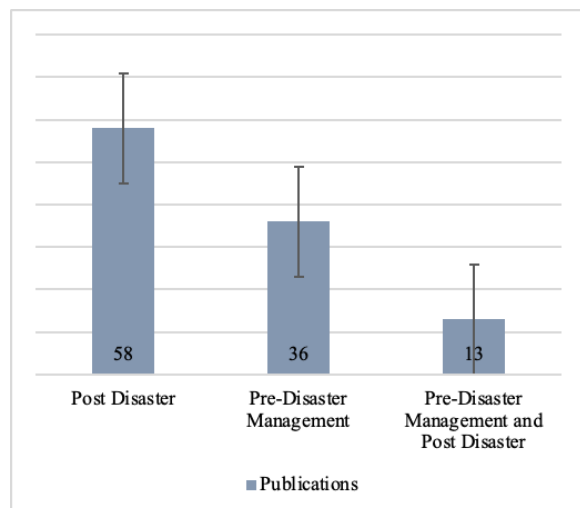
Type of Social Protection

Several general patterns can be observed in research published in journals regarding social protection. These patterns include the implementation of Social Protection in Pre-Disaster Management: Some studies focus on implementing social protection measures during the pre-disaster phase. These studies explore strategies and interventions aimed at reducing vulnerabilities and building resilience before disasters occur (Gong et al., 2020; Marella et al., 2016; Osti, 2004); Implementation of Social Protection in the Post-Disaster Period, the studies concentrate on the implementation of social protection measures in the aftermath of disasters.

These studies examine the response and recovery efforts that aim to support and assist affected communities (Heltberg, 2007; Kosec & Mo, 2017; Mishra, 2020); a Combination of Pre-Disaster and Post-Disaster Social Protection. Some research comprehensively addresses social protection, considering the pre-disaster and post-disaster phases. These studies analyze the continuum of social protection measures, encompassing preparedness, response, recovery, and long-term resilience-building (M. Davies et al., 2013; Gray & Coates, 2012; Shi et al., 2014). These patterns reflect the recognition of the importance of social protection throughout the different stages of disaster management. Understanding these patterns can inform the development of effective social protection policies and interventions that cover the entire disaster management cycle.Social protection momentum is predominantly seen in post-disaster scenarios, despite the fact that social protection can be implemented prior to a disaster. Adequate preparations for disaster coping strategies, particularly in offering aid to vulnerable populations, can be achieved through accurate mapping of their needs immediately following a disaster. This is

particularly crucial during critical periods, necessitating prompt and effective emergency responses to the prevailing conditions.
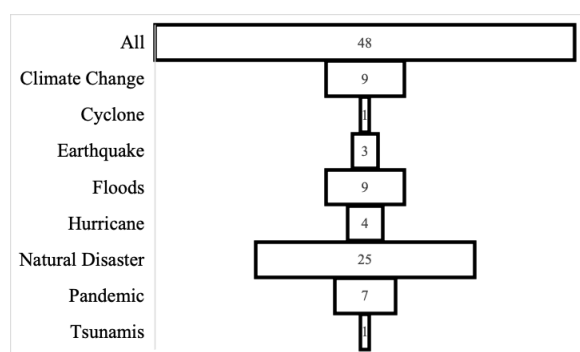
Figure 8 A Type of Social Protection

Type of Disaster in Social Protection

In the context of types of disasters, the 107 reviewed articles have covered several categories. These include 1) climate change, 2) cyclones, 3) earthquakes, 4) floods, 5) hurricanes, 6) natural disasters, 7) pandemics, 8) tsunamis, and 9) an overall or non-specific category. Among these, the distribution of research attention is highest towards general disasters, indicating a broader focus on disaster-related topics. The second largest portion of research focuses on natural disasters in general, indicating significant interest in this area. Other studies tend to concentrate on more specific aspects within disaster research.

Figure 9 A Type of Disaster in Social Protection

Research Categories and Potential Hotspots

Keywords in publications play a crucial role as they guide the research direction, classify academic topics, and succinctly summarize the core thesis of a research study. They serve as important tools for authors to communicate the essence of their research in publications. By conducting keyword frequency analysis, we can gain insight into specific events within a certain timeframe, identify research trends, and assess the overall landscape of publications. Furthermore, analysis of research clusters provides a comprehensive understanding of research themes and highlights the hotspots within the field of social protection during a specific period. This analysis assists researchers in exploring the evolving trends and changes within a particular discipline.

Highly cited publications indicate their significance and recognition as authoritative contributions within a specific field. Bibliometric analysis, employed in this study, visually depicts research trends and relevant topics within a specific timeframe. It is a valuable tool for researchers to examine the research trajectory and identify current areas of interest.

Indeed, this analysis acknowledges the potential weakness associated with the large metadata volume. However, efforts have been made to address this weakness through the utilization of the SPAR-4-SLR method, which aims to improve the quality of data processing by minimizing the inclusion of irrelevant or low-quality data. Through this method, patterns of hotspot topics have been identified, offering opportunities for further in-depth research. In the realm of social protection, it is crucial to recognize the involvement of multiple actors. Therefore, exploring the roles of these actors in greater depth becomes necessary to understand which ones are most effective in implementing social protection measures. A more comprehensive understanding can be gained by delving into the specific roles and contributions of different actors, facilitating improved implementation of social protection initiatives.

Conclusions and Recommendations

This bibliometric analysis examined the research history of social protection from 1993 to 2022, using VOSviewer software for analysis. A total of 1,098 papers were initially obtained from Google Scholar and Scopus, which were then narrowed down to 107 papers using the SPAR-4-SLR method, considered the most relevant to the topic of social protection. In terms of country contributions, the analysis reveals a division in research types, with the United States making a significant overall contribution to the development of this topic. The visualization of the data highlights several interesting hotspots in the field of social protection, which warrants further in-depth research. These hotspots encompass various aspects, such as exploring actors' roles, examining different types of disasters, and identifying the most appropriate action options under specific conditions. Overall, this research provides valuable guidance for researchers by identifying the most interesting hotspots within the field of social protection. It offers insights into the direction of further research and contributes to advancing knowledge in this domain.

Acknowledgements

Conflict of Interests

The authors declared that no potential conflicts of interests with respect to the authorship and publication of this article.

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