Scientific Mapping in Scopus with Biblioshiny: A Bibliometric Analysis of Disaster Literacy

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Abstract: The goal of this research is to examine the scientific mapping in disaster literacy research with bibliometric analysis. The method of this research is a bibliometric analysis. Based on the analysis carried out on the theme of disaster literacy from 2014 to 2024, there are 50 documents with the country with the largest number of publications is Indonesia. The author who published the most on disaster literacy is D. Zhang Meanwhile, the most dominant keywords are disasters, followed by disaster literacy, earthquake, and literacy. For prediction in the future, research should be carried out related to disaster literacy for students.

1 INTRODUCTION

Natural disasters are a global phenomenon that impacts various aspects of human life, including health, the economy, and social stability (Akbar et al., 2024; Aprilyanto et al., 2023; Pratama et al., 2024; Rahmat, Ramadhani, et al., 2020; Rahmat, Sari, et al., 2020). Over the past decades, the frequency and intensity of natural disasters such as earthquakes, tsunamis, floods, wildfires, and storms have been increasing due to climate change and uncontrolled urbanization. These impacts underscore the importance of enhancing disaster literacy as part of a global strategy to build more resilient and prepared societies. Disaster literacy has become a key focus in international research, both in academic and practical contexts (Ashgaf et al., 2024; Asshiddiqi et al., 2023; Khairunnisa et al., 2021; Rahmat & Pernanda, 2021).

Disaster literacy involves individuals' and communities' understanding of disaster risks, their ability to mitigate impacts, and their readiness to respond to emergencies (Asshiddiqi et al., 2023; Maghfirah & Mutia, 2023). Worldwide, the level of disaster literacy varies significantly depending on social, economic, educational, and governmental factors. Countries with higher levels of disaster literacy tend to be more successful in reducing the impacts of disasters compared to those without adequate disaster literacy strategies (Ahmed et al., 2023; Shalahuddin et al., 2022; Utama et al., 2020).

Globally, research on disaster literacy encompasses various topics, such as the role of formal education in raising risk awareness, the effectiveness of public awareness campaigns, the use of digital technologies for disaster mitigation, and community-based approaches to preparedness (Asshiddiqi et al., 2023). This research often involves interdisciplinary collaboration across social sciences, engineering, education, and public policy. However, systematic mapping of global research trends in disaster literacy remains limited.

A bibliometric approach offers an effective method for analyzing and mapping research trends in the field of disaster literacy worldwide. Using data from scientific databases such as Scopus or Web of Science, bibliometric analysis can identify key topics, publication trends, researcher collaborations, and the contributions of specific institutions or countries to the

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body of disaster literacy literature (Ellegaard & Wallin, 2015; Fiandini et al., 2024). Furthermore, this method can help identify research gaps and opportunities for cross-national or regional collaborations.

One of the commonly used tools for bibliometric analysis is *Biblioshiny*, a web-based application from the R *Bibliometrix* package. With *Biblioshiny*, bibliometric data can be visualized as network graphs, keyword analyses, or geographic distribution maps of publications. This enables researchers to understand the development of disaster literacy from various perspectives, both academic and practical, intuitively and interactively.

This study aims to conduct a bibliometric analysis of the global disaster literacy literature. The research focuses on identifying the most widely discussed topics, the countries or institutions that are most active, and the authors and journals that are influential in this field. By doing so, this study seeks to provide a comprehensive overview of how disaster literacy has evolved as an essential area of study to address global challenges.

2 METHOD

This research used a bibliometric approach. Bibliometric analysis is a quantitative method for analyzing bibliographic data contained in scientific publications, such as scientific journals, scientific proceedings, or scientific periodicals. (Araújo-Vila et al., 2023; Fiandini et al., 2024; Harahap et al., 2021; Hasan & Moorthy, 2016; Hudha et al., 2020; Rahmat et al., 2021, 2023). This research uses bibliometric analysis using the Scopus database. On November 1st, 2024, research conducted keywords related to education for sustainable development. Figure 1 illustrates the flow of this research. Initially, we identified the topic for this research as education for sustainable development. Next, we filter the results by restricting the publication period from 2014 to 2024. In the third stage, the Biblioshiny application is used to analyze creating a visualization of publication data. In the last stage, the result derived from the third stage discusses the findings.

3 RESULT AND DISCUSSION

3.1 Publication Output and Source Document

Figure 2 shows the trend of publication on disaster literacy from 2014 to 2024. During this period, the number of publications experienced an annual decreased but overall increased.

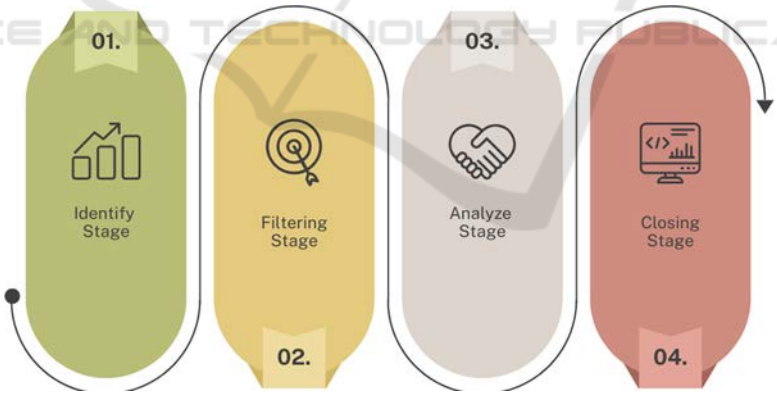

Figure 1: Stages of the Bibliometric Analysis Methods.

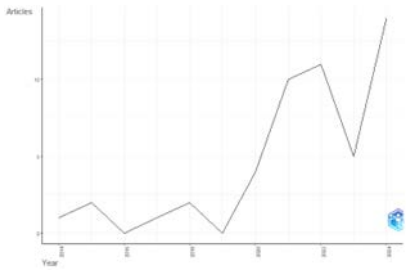

Figure 2: Yearly distribution of documents in disaster literacy research.

3.2 Key Author of Disaster Literacy

From 2014 until 2024, the authors who published the most on disaster literacy are D. Zhang, with 5 documents, followed by E. Maryani and L. Y. Zhang, with 3 documents. This can be seen in Figure 3 and the network collaboration in Figure 4.

3.3 Thematic Area-Related Disaster Literacy Using Biblioshiny

Bibliometric studies are carried out the present results based on frequently occurring terms (Alvarez et al., 2022; Araújo-Vila et al., 2023). In this research, it starts from 2014 until 2024. The term that appears can be seen in the visualization can be seen in Figure 5.

3.4 Future Research for Disaster Literacy

Figure 6 illustrates the keywords' density. According to the figure, the most dominant keywords are disasters, followed by disaster literacy, earthquake, and literacy.

Figure 7 represents the focus of the previous main research. The thematic maps of this research can be seen in Figure 7.

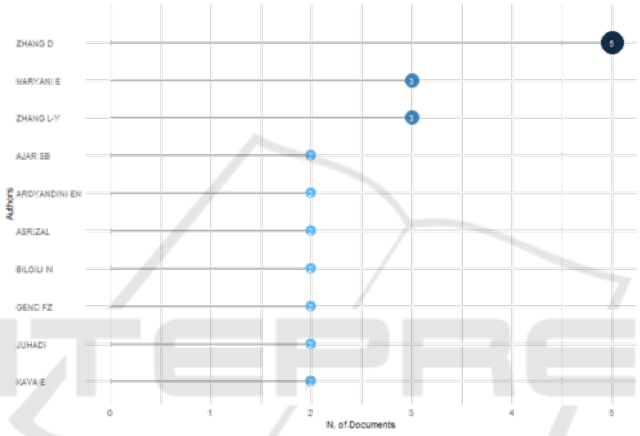

Figure 3: Most of the authors in disaster literacy research.

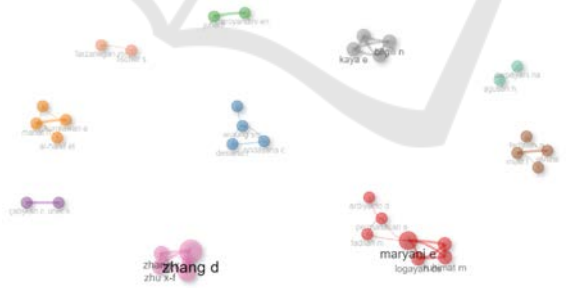

Figure 4: Network collaboration research in disaster literacy.

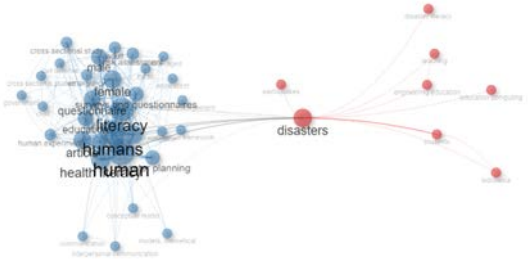

Figure 5: Visualization of co-keywords network in disaster literacy.

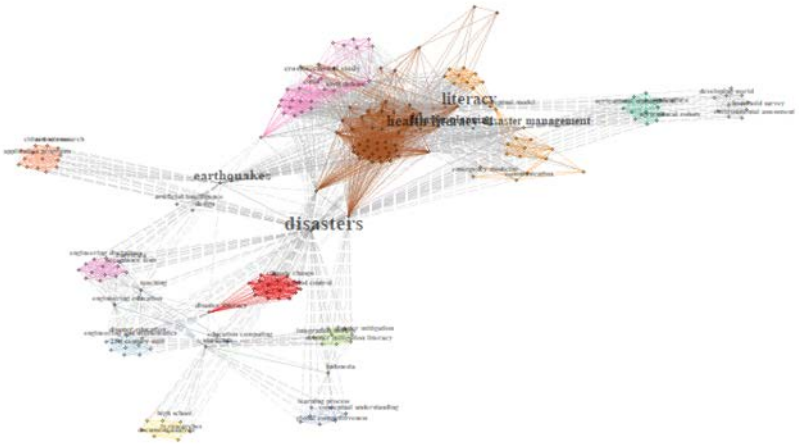

Figure 6: Keywords Cooccurare in disaster literacy research.

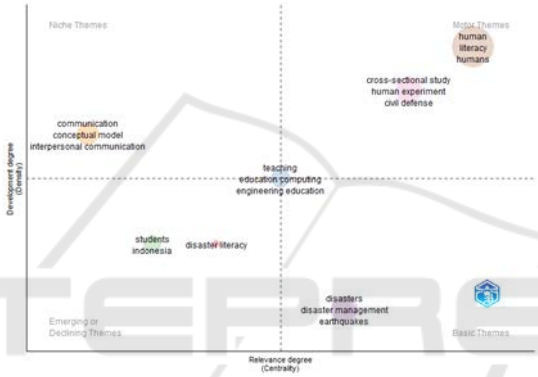

Figure 7: Thematic maps in disaster literacy research.

4 CONCLUSION

Based on the analysis carried out on the theme of disaster literacy from 2014 to 2024, there are 50 documents with the country with the largest number of publications is Indonesia. The author who published the most on disaster literacy is D. Zhang Meanwhile, the most dominant keywords are disasters, followed by disaster literacy, earthquake, and literacy. For prediction in the future, research should be carried out related to disaster literacy for student.

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