

How Does Social Media as Tools for Social Movements on Global Issues?

A Systematic Literature Review

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Abstract

This study aimed to map the development of research and scientific publications about social movements on social media. This study used the Systematic Literature Review approach to analyze 471 scientific articles that were selected based on the PRISMA procedure. The articles were taken from the Scopus database published in the 2018-2023 period. Cite Space software was used to visualize the data such as topic clusters, authors, and topic trends in the study of social movements on social media. This study reveals that there are ten topic clusters in the study of social movements on social media, namely collective action (#0), long covid (#1), stock market (#2), umbrella movement (#3), social media (#4), environmentally-related migration (#5), racial justice (#6), extreme events (#7), influence odj (#8), sexual abuse (9#), and systems research (10#). Collective action is the most dominant cluster compared to other clusters, which shows that collective action is a general concept used in the study of social movements on social media, which is related to various issues in other clusters, such as Covid-19, politics, racism, and the stock market. Each topic cluster was discussed by many authors with various study focuses, but all authors used the concept of social media as a social movement to explain the issues that were the focus of their respective studies. Trend topics in the study of social movements on social media show that social movements and social media are a unified concept that can be used to explain various issues to study. This research contributes to the development of social movement studies in the digital era, the internet, mobility networks, and artificial intelligence. The limitation of this research is that the data used were from the Scopus database only so the findings cannot fully explain the study of social movements on social media. Therefore, future research needs to use data or references from other reputable databases such as the Web of Science and EBSCO.

Keywords: *Social Movement, Social Media, Collective Action, Communication, Social Network, Participation, Politics.*

Introduction

As part of the study of sociology and political science, the study of social movements has a quite dynamic development and has received serious attention from many scholars (Downey and Kierr, 2016). Recent developments in social movement studies have led to the study of the use of digital media to support social movements. While previous social movement studies have focused more on direct mobilization and advocacy in certain socio-political cases, the latest developments in social movement studies are related to the patterns of communication, interaction, networking, and the power of the actors in digital media, including social media (Tufekci, 2017). This shift in the focus of social movement studies is a logical consequence of the information technology development, which influences changes in human behavior and social or human mobility (Ahmouda, Hochmair, and Cvetojevic, 2019). However, even though there has been a change in the study focus, the study of social movements still refers to and can only be explained by general concepts that are directly related to the concept of social movements, such as the concepts of democracy, power, civil society, collective action, mass media, and social resistance. In addition, the objects of social movements are always connected with common issues, such as environmental issues, justice, anti-discrimination, equality, and other issues (Rossi and von Bülow, 2016).

There are quite a number of general concepts that describe social movements in digital media, such as digital movements (Barisione, Michailidou, and Airoidi, 2019), hyperreality movements (Pradhana and Tania, 2021), virtual movements (Sidiq et al., 2021), cyber movements (Candón-Mena, 2021), and mobility movements (Rautiainen-Keskustalo and Raudaskoski, 2019), social media movements, and smart

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movements (Maaranen and Tienari, 2020). A number of these digital concepts explain that digital media is a means of social movements related to the activity of disseminating information, influence, data, and ideas, which aims to build social networks as a collective force to obtain, fight for, and maintain collective values (Gray-Hawkins, 2018). Many studies reveal that social movements on digital media are quite effective. A study by Mundt, Ross, and Burnett (2018) explains that digital media such as social media made it easier for the public to communicate and network; they could even determine an agreement on the values they fought for together. For example, through social media, social movements in Egypt occurred massively; even though they were blocked by the power of the state, the public was still able to build collective strength to counterbalance it so that they could fight for and even succeed in realizing their collective values (Bang, Lee and Rao, 2021).

Previous research has focused not only on the power of social media as a means of social movements. Several studies have also revealed that social media has failed to become a means of social movements, and has even become a hindrance that prevents social movements from taking place properly (Mundt, Ross, and Burnett, 2018). Social media is not always effective in supporting social movements in a good, complete, and sustainable manner. On the contrary, social media has often become an effective means of spreading hoaxes and disinformation, which then influences public perceptions, opinions, and views (Ummah and Fajri, 2020). Social media also forms pseudo-social networks, which have no ideological power, and do not have a clear foundation of struggle values. That is because actors who network on social media do not always network on the basis of the same interests and values. Indeed, they often network to simply find information or issues that are fought for by a group of people. They even network using fake accounts and robots that can be controlled by the creators (Fominaya, 2022).

Although a lot of previous research has studied social movements on digital media, not much research has mapped the development of the study of social movements on social media based on literature reviews or scientific references using the Scopus database (Studen and Tiberius, 2020). A number of previous studies examined the use of digital media as a means of political, economic, and professional organizational interests, but did not specifically explain social media as a means of social movements (Isa and Himelboim, 2018; Padoan, 2020; Yip and Pinkney, 2022; Gutberlet et al., 2023; Keshitban, Callahan, and Harris, 2023). Therefore, to date, the study of social movements on social media has not yet had a well-conceived mapping of the development of the studies, which causes further research to not have a scientific framework for developing studies of social movements on digital media.

This study is very important to conduct to investigate the urgency of the study on social movements through digital media, with the focus on the use of social media as a means of social movements. It is expected that, conceptually, the study of social movements on social media can then have a research roadmap that contributes directly to the development of the studies on social movements in the digital era. This study used a systematic literature review (SLR) approach with the aim to explain in detail the development of the study of social movements on social media including the development of publications based on the number of documents, disciplines, and concept or theme mapping. Cite Space software was used for article reviews to help determine topic clusters and authors, and to present developments in the topics of social movement studies in the 2018-2023 period. This study was conducted to contribute to the development of the study of social movements on social media, which can emphasize that social movements and social media are a unified concept that can be used for further study and elaboration in various objects of research.

The Trends of Social Movement on Social Media Studies

Generally, the term social movement in the study of political sociology is used to describe civil society's resistance to the state related to the distribution of resources and public policy making (Downey and Kierr, 2016). Therefore, social movements are synonymous with civil society's efforts to get justice for the actions of the state. The development of social movement studies extends to many aspects, such as moral, educational, health, socio-cultural, and economic movements, which do not always place civil society as a powerless party over the state (Rossi and von Bülow, 2016). In this context, civil society and the state synergize and collaborate to build collective power for the public interest: the collective interest. The shift in social movement studies is inseparable from the development paradigm that emphasizes the concepts of collaboration, partnership, participation, and synergy among actors (Carragee, 2019; Gopinathan et al., 2022).

Scherman, Valenzuela, and Rivera (2022) did in-depth research on civil society participation in environmental issues in Chile. In a study conducted between 2009-2019, they found that civil society built public awareness to care for the environment through online media and social media, which had a positive impact on increasing public literacy about the environment, which also led to an increase in public participation in environmental conservation activities. The research findings confirmed that the orientation of social movements on social media is not always related to people's resistance to the state even though in any social movement the value that was fought for is the alignment with common interests such as sustainable environmental issues. In many cases, social movements on social media are actually carried out to help and partner with the government and the private sector (Anderson, Karami, and Bozorgi, 2020). For example, in regard to Covid-19 responses and management, many studies revealed that the handling of Covid-19 involved many parties, and required all parties to collaborate and synergize (Anderson, Karami, and Bozorgi, 2020; Heo, Lim, and Bell, 2020; Ujang and Azri, 2022; Gutberlet et al., 2023). Lutkenhaus, Jansz, and Bouman (2019) stated that civil society used social media as a means to help disseminate valid data and information about Covid-19, as well as minimized the spread of hoaxes related to Covid-19.

The explanation above, apart from showing that there has been a change in the orientation of social movements, also shows that social movements have experienced changes in aspects of digital-based patterns of communication and social interaction (Gray-Hawkins, 2018). Many studies revealed that the success of social movements in a number of countries is inseparable from the use of digital media such as social media (Bozarth and Budak, 2022). Compared to conventional media such as newspapers and television, social media is the most effective, inexpensive, and easily accessible tool for anyone and can be used for various purposes (Mundt, Ross, and Burnett, 2018). Lupien (2020) explained that nowadays the public/society has no difficulty in getting access to and disseminating information, data, and common issues from various sources (Bozarth and Budak, 2022). They can get all the information from social media that is well connected with other digital platforms. Hence, digital society has good opportunities to be directly or indirectly involved in public affairs or concerns (Ahmouda, Hochmair, and Cvetojevic, 2019).

Social media is used by the movement actors to mobilize the masses and disseminate opinions, ideas, and influence in the hope of getting support from the public, which is then used as the strength of the movement to achieve specified goals and targets (Bang, Lee, and Rao, 2021). The success of the social movement in Egypt, known as the Springs movement, cannot be separated from the use of social media. In this movement, social media became an alternative means when conventional media was controlled by the authorities. Through the use of social media, collective power could be built, which had the full support of the Egyptian community at that time (Jost et al., 2018). Jenzen et al. (2021) in their research on social movements in Turkey emphasized that social media makes an important contribution to the success of building collective power that is networked on social media. This study also explained that collective power on social media is largely determined by narratives and visualizations that depict public interests.

Jost et al. (2018) in their research answered the question of why social media is an effective means of social movement practice in several countries. In their research, they explained that social media platforms facilitate the exchange of information, which is the most vital thing in communicating and coordinating across actors, regions, sectors, communities, institutions, and organizations so that social networks can be formed properly for the benefit of what they are fighting for together. Additionally, Jost et al. (2018) explained that social media platforms also facilitate the exchange of experiences, motivations, and knowledge from various actors or organizations so that an idea is formed, which is then formulated in a value or ideology which later becomes a bond or collective identity.

Social movements on social media cannot always ascertain that the collective power formed on social media has the same values and vision even though social media users are networked in the same clusters. In this context, Pradhana and Tania (2021) in a study on the use of the #BlackLivesMatter hashtag explained that social media was a means for Americans to protest against acts of violence by white police against black Americans. However, this research revealed that not all social media users who networked with this hashtag talked about racism against black people or demanded justice for the racist actions of white police; rather, they networked with this hashtag more to show that they knew about the case. Pradhana and Tania (2021) mentioned that social media users who are only present in hashtag networks to simply find out about a case show that social movements on social media, also known as hyperreality, cannot be called strong social movements.

The study of social movements on social media has been conducted a lot previously, focusing on various issues with various methods. In general, the most dominant issues studied in the previous research are political issues, i.e., social movements are carried out to fight, protest, and balance the power of the state so as not to sacrifice public interests, be discriminatory, unfair, and so forth (Iosifidis and Wheeler, 2018; Zubiaga et al., 2019; Koironen et al., 2020). Socio-cultural issues have also been the focus of previous research, such as studies on civil society participation in protecting and maintaining the sustainability of local wisdom, which often receives direct or indirect threats from many parties (Gerbaudo, 2018; Maaranen and Tienari, 2020; Pavan and Mainardi, 2020; Jusay et al., 2022). Furthermore, environmental issues have also received serious attention in many previous studies, which emphasized studies on civil society participation in maintaining environmental sustainability, conservation, and reforestation that guarantees a sustainable environment (Hedemann, 2019; Howe, Stoddart, and Tindall, 2020; Scherman, Valenzuela, and Rivera, 2022). On the economic aspect, many previous studies have explained the role of social media as a means of supporting the increase of economic growth and equity (Mieruch and McFarlane, 2022; Wu and Huang, 2022).

Various issues in the study of social movements emphasize that research on social movements through social media contributes to the development of the study on social movements both conceptually and practically. However, based on the literature in the Scopus database, to the best of the authors' knowledge, there are more empirical research, both qualitative and quantitative, based on digital media or social media data so that the research contribution is directed more to practical aspects. Meanwhile, studies in the form of literature review are very limited. There is only a small amount of research that used a literature review approach in social movement studies, and the studies were not directly related to social movements through social media. Some examples are Studen and Tiberius (2020), who used the literature review approach to examine the status quo of digital media and social media, Toppenberg-Pejcic et al. (2019), who examined the crisis communication and risk management, Goodyear et al. (2023), who explained the limitations of children's and youth's physical activity in the digital era, and several other studies.

This research was specifically conducted to map scientific publications focused on reviews on studies of social movements on social media using the Systematic Literature Review (SLR) approach. The publication mapping was directed to describe in detail scientific publications related to social movements on social media such as the development of research/publication, the mapping of researchers/authors, document distribution by year, region, theme and topic mapping, topic trends or themes, and the formulation of friends or topics as a social movement research agenda through the next social media. The essence of this research is to contribute to the mapping of the the study concept of social movements on social media, which can be used as part of a conceptual framework for explaining social movements on social media. Moreover, this study contributes to the study of social movements in the era of digital society, who communicates, interacts, connects, and networks at any time in digital media such as the following social media: Facebook, Instagram, Twitter, and YouTube.

Research Methodology

This study used the systematic literature review (SLR) method and aimed to answer one specific question: How is the development of the studies on social movements on social media published in the reputable Scopus-indexed international journals in the last five years, i.e., 2018-2023? This specific question was then explained in more specific sub-questions as follows:

- What is the trend of scientific publications on the topic of social movements on social media by year, author, and region?
- How is the distribution of authors and study themes based on the topic cluster distribution of scientific publications on the topic of social movements on social media in the last five years, i.e., 2018-2023?
- What is the topic trend of scientific publications on the topic of social movements on social media in the last five years, i.e., 2018-2023?

These research questions are explained procedurally according to SLR standards in general, which are 1) determining using keywords: social movement and social media as the main keywords for retrieving/accessing articles in the Scopus database; 2) determining the type of document: Scopus-indexed journals; 3) filtering the publication period of the articles: the 2018-2023 period; 4) determining the type of files used for review: RIS files; 5) defining reference management applications: Mendeley; 6) determining the article review application: Cite Space; 7) doing article analysis using the Cite Space feature: topic cluster visualization, citations, and topic mapping; and 8) interpreting the data and discussing in depth to generate research findings that became part of the answers to the research questions in this study. Cite Space is an article review application that can explore data statistically using measurable parameters and steps, they are 1) determining the data scale, namely the selected publication period of 2018-2023, 2) determining the units of analysis, namely keywords, references, and cited authors; then 3) determining the cluster labeling, namely "T." The Cite Space formula used in this study was the modularity Q with a value ranging from 0–1, in which values close to 1 reveal closer relationships and connections within clusters. In general, the modularity Q values between 0.4–0.8 are acceptable, while the mean of Silhouette values should be between –1–1. Values close to 1 mean that articles within a cluster are highly consistent or similar in terms of content (Chen, 2016).

The stages of this study were carried out in accordance with the PRISMA (Preferred Reporting Items of Systematic reviews and Meta-Analyses) protocol, namely identification, screening, and including articles from the Scopus database (Rethlefsen et al., 2021). The identification stage was pertaining to the initial stage of article retrieval, which was done by registering for a premium/paid Scopus account, logging in with an official account, and entering the words “key of social movement” and “social media” in the search document box on Scopus. At this stage, 10,672 articles were found and then strictly verified until 7,415 copies of articles were found. The screening stage was the stage to 1) determine the number of articles that were recorded in the Scopus database and were in accordance with the selected topic of the studies, especially since some articles were not properly recorded with regard to scientific criteria and ease of access to the full papers; 2) determine articles that had a strong level of relevance to the topic of social movements and social media and could be accessed in the form of RIS files; 3) make valid and proper reports regarding the number of articles that would be selected and set as references for article reviews; and 4) determine 471 articles that were strictly verified and validated.

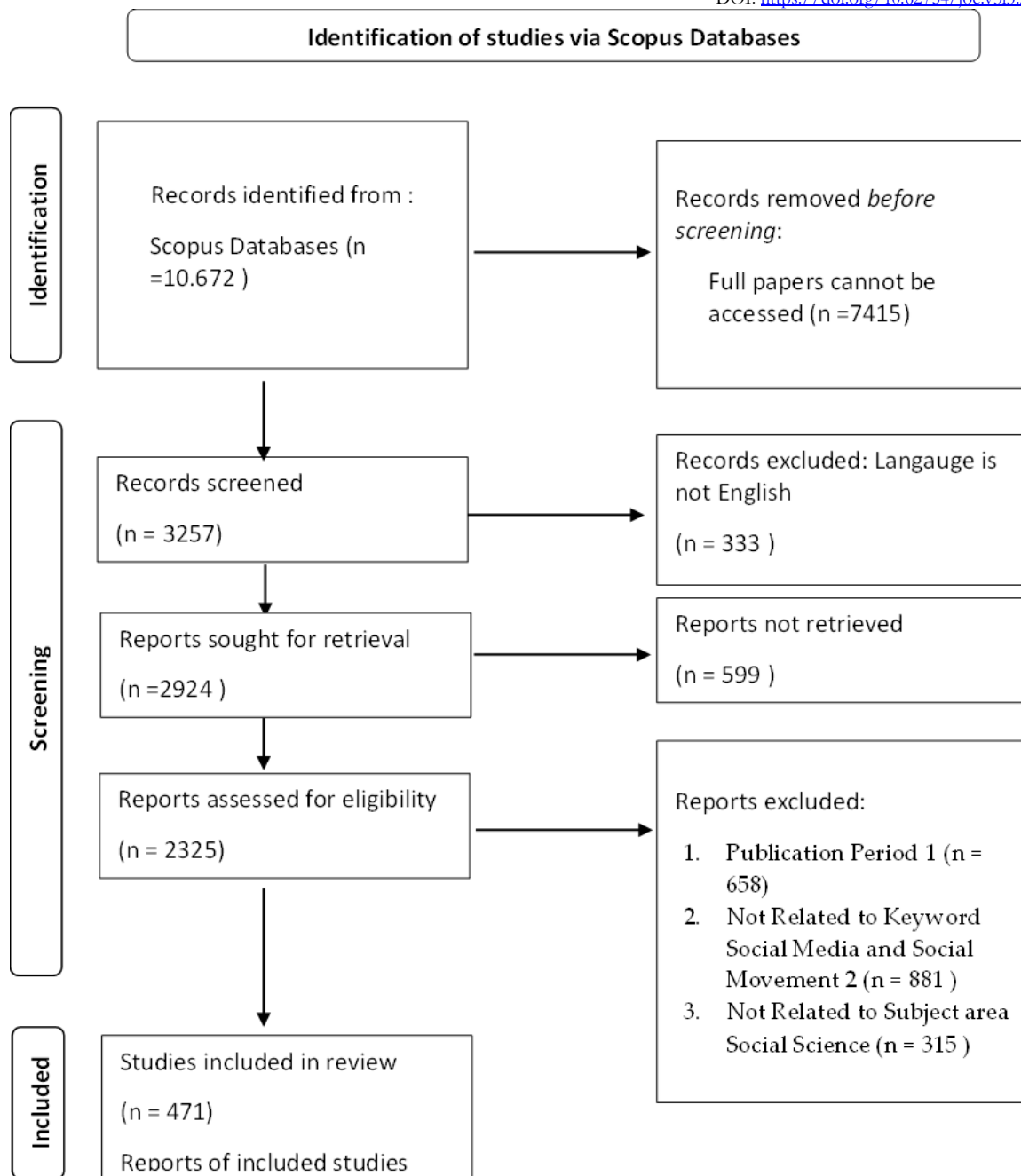


Diagram 1. The Stages of Article Retrieval

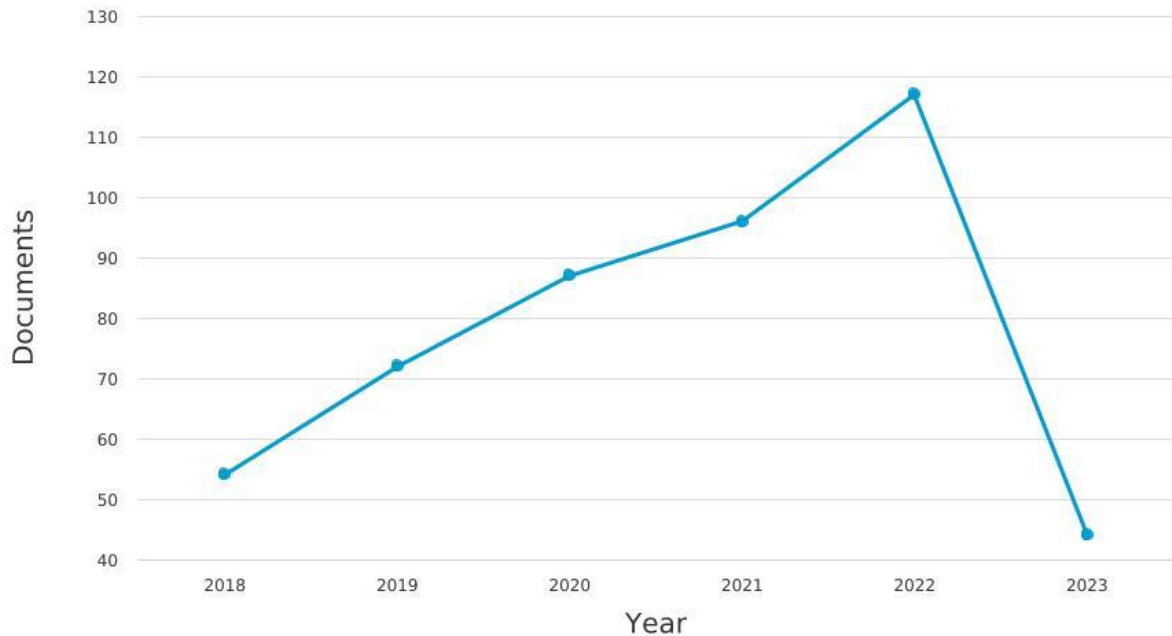
Research Findings

Graph 1 shows an increase in the trend of publications about social movements on social media in the last five years (2018-2023), i.e., there were 54 articles in 2018, 72 articles in 2019, 87 articles in 2020, 96 articles in 2021, 117 articles in 2022, and 44 articles in 2023 with the number of articles in 2023 calculated between January and May. The interesting fact about the increase in the number of publications is that the increase in the number of published documents has occurred proportionally from 2018 to 2022. This means that the study of social movements on social media has received the attention of scholars on an ongoing basis. The increase in publication documents also shows that the study of social movements on social media will continue to grow, which can be explained in various perspectives. Graph 2 illustrates the distribution of disciplines explaining social movements on social media, i.e., social sciences 47.7%, computer science

15.2%, arts and humanities 9.6%, environmental studies 5.0%, engineering science 4%, energy studies 3%, business and management 2.7%, medicine 2.0%, and psychology 2.0%.

Documents by year

Scopus



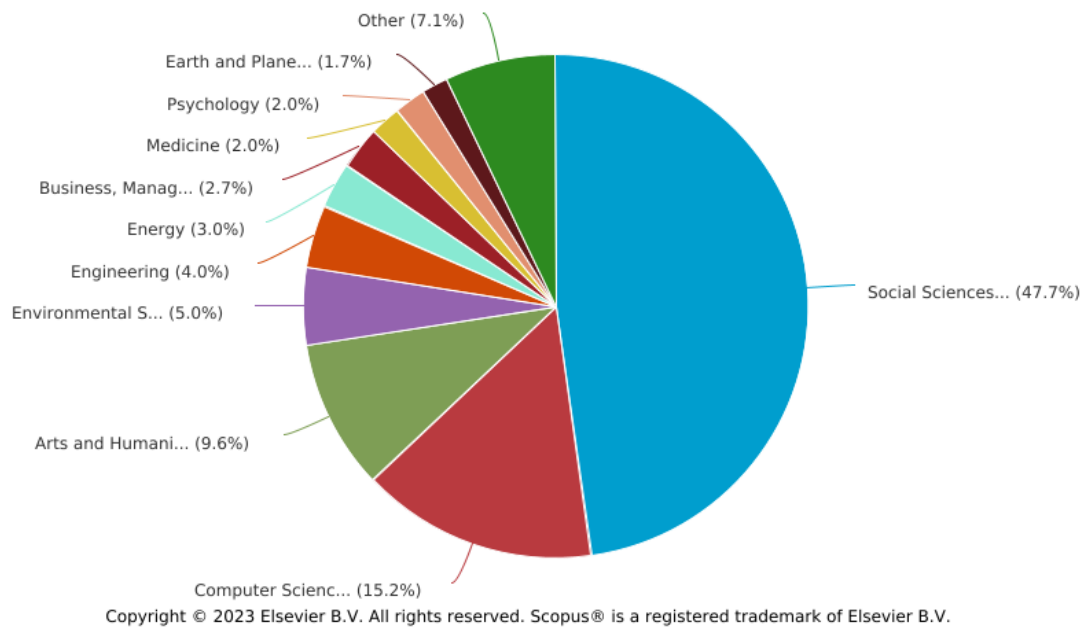
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Graph 1. The trend of publications about social movements on social media in the 2018-2023 period

Graph 2 shows that social science is a discipline that mostly discusses social movements on social media. This confirms that social sciences such as sociology, political science, and communication direct the study of social movements on social media with the focus on the use of Twitter, Facebook, Instagram, and YouTube as a means for the public to build social networks, political communication, policy outreach, and environmental education, discuss economic concerns, and build as well as strengthen socio-cultural values. Interestingly, Graph 2 also shows that computer science also makes an important contribution to the study of social movements on social media. This is related to computer science disciplines that specifically explain the role of algorithms, machine learning, artificial intelligence, and online networks related to human mobility in digital spaces that support intensive communication, interaction, and public participation, which affect the formation of social networks as the power of social movements. In addition, the study of social movements on social media is also related to environmental, economic, engineering, energy, pharmaceutical, and psychological studies, which reinforces that the study of social movements in the digital era is a field of study that can be explained across disciplines.

Documents by subject area

Scopus



Graph 2. The disciplines in the study of social movements on social media

The results of Cite Space analysis reveal that there are 10 topic clusters in the study of social movements on social media, with a Modularity $Q=0.5481$, indicating that each topic cluster is related to one another. While this score does not indicate a strong correlation between clusters, this value is acceptable to state that each cluster is a unified concept in the study of social movements on social media. Moreover, the mean of Silhouette value $S=0.7501$ indicates that there are similarities in content between the 10 clusters, which also confirms that each cluster is a unified concept that intensively discusses social movements and social media. The Modularity Q and Silhouette S values led to the conclusion that the study of social movements in social media is related to many topics, concepts, and issues illustrated in the 10 clusters, namely collective action (#0), long covid (#1), stock market (#2), umbrella movement (#3), social media (#4), environmentally-related migration (#5), racial justice (#6), extreme events (#7), odj influence (#8), sexual abuse (9#), and systems research (10#).

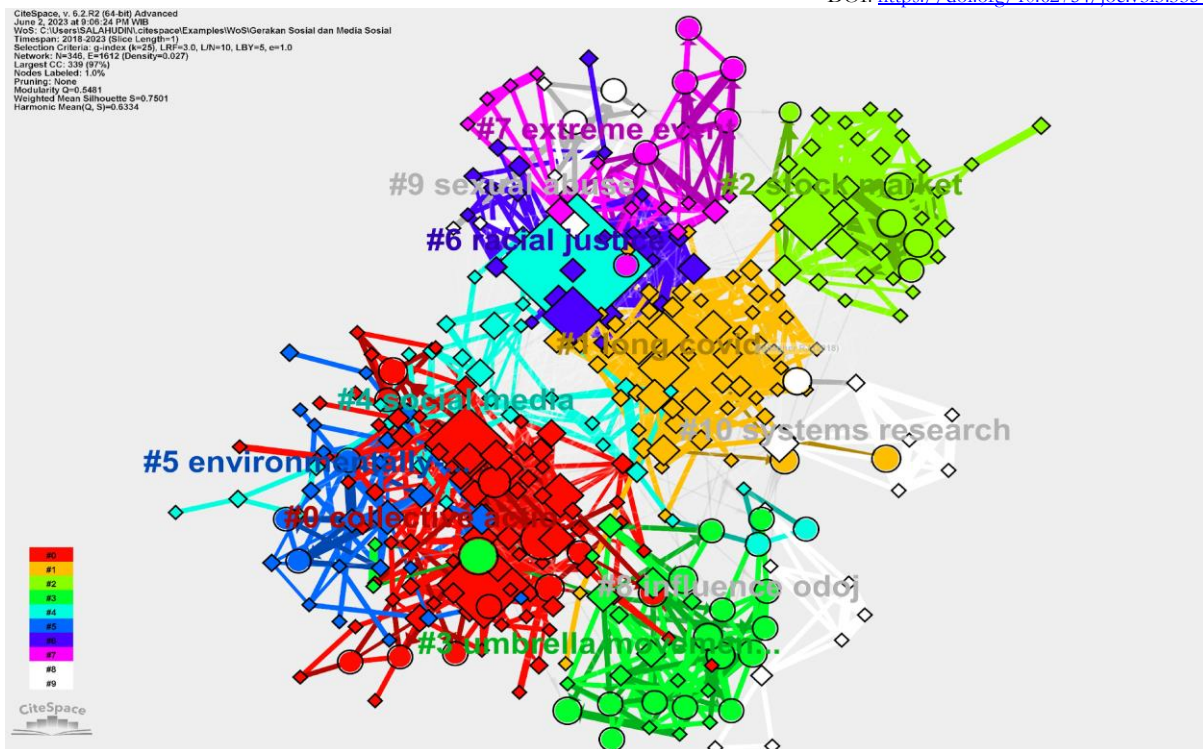


Figure 1. Topic clusters on the study of social movements on social media

Firstly, the collective action cluster (#0) is the most dominant topic cluster discussed compared to the other 9 clusters in the study of social movements on social media. This cluster has been discussed in 87 articles commonly published in 2019. The collective action cluster is related to articles that discussed political hashtags that used three main concepts, namely social movement, democracy, and protest. This cluster has a Silhouette value of 0.582, which confirms that the collective action cluster is related to the theme or title of an article about political hashtags that use the concepts of social movement, democracy and protest as the main basis for explaining social movements on social media. Figure 2 also shows that the first cluster describes collective action activities that were part of social movements carried out in the form of political campaigns and protests on social media, which included creating political narratives and disseminating information that was expected to get a response and public support for the values fought for and shared by the community. Several articles related to political hashtags were Hashtag burnout? A control experiment investigating how political hashtags shape reactions to news content (Rho and Mazmanian, 2019); Old Law, New Tech, and Citizen-Created Hashtags: #BlackLivesMatter and the Case for Provisional Hashtag Marks (Mahin and Ekstrand, 2021); and Organizing Safe Spaces: #MeToo Activism in Sweden (Hansson, Sveningsson, and Ganetz, 2021). The three articles discussed the use of hashtags as a means of political communication to expand influence and build social networks which then became a collective force in a social movement.

Table 1. The Details of Knowledge Clusters

ClusterID	Size	Silhouette	Label (LSI)	Label (LLR)	Average Year	Most Concepts
0	87	0.582	political hashtags	collective action (577.2, 1.0E-4)	2019	130 social movements; 101 social movement; 29 protest
1	57	0.65	discrimination	long covid (549.38, 1.0E-4)	2020	37 human 35 covid 19

2	35	0.882	learning algorithms	stock market (974.04, 1.0E-4)	2019	68 social networking (online) 16 machine learning 14 forecasting
3	33	0.823	hong kong	umbrella movement (203.58, 1.0E-4)	2016	14 collective action 13 black lives matter 11 political participation
4	32	0.785	young people	social media (549.52, 1.0E-4)	2019	378 social media 11 sustainability
5	26	0.834	climate protest	environmentally-related migration (219.64, 1.0E-4)	2019	16 populism 13 media 7 leadership
6	25	0.861	negative stances	racial justice (411.88, 1.0E-4)	2021	56 twitter 12 big data 11 urban area
7	21	0.889	emergency risk communication	extreme event (266.11, 1.0E-4)	2018	10 social network 7 data mining 4 social mobility
8	8	0.944	political repertoires	influence odoj (38.61, 1.0E-4)	2018	6 youth 2 indonesia 2 islamism
9	8	0.924	online disclosures	sexual abuse (107.4, 1.0E-4)	2021	10 hashtags 2 victimisation 2 cybersecurity
10	7	0.946	online disclosures	systems research (102.57, 1.0E-4)	2021	20 facebook 3 Gallagher RJ, 2018, PLOS ONE, V0, P0 3 behavioral research

Secondly, the long covid cluster (#1) is a topic related to social movements with the focus on the use of social media as a means of education, outreach, and sharing experiences of Covid-19 survivors with the public. This cluster has been discussed in 57 scientific articles, which were commonly published in 2020. A number of these articles used the concept of human and Covid-19 with a Silhouette value of 0.650, illustrating that there was a link between long covid, human, and Covid-19. One of the main articles that dominantly discussed long-covid, human, and Covid-19 was an article written by Rushforth et al. (2021) entitled Long Covid – The illness narratives, published in the journal of Social Science and Medicine in 2021. Rushforth et al. (2021) conducted in-depth study regarding the negative impact of long covid narratives on social media on the public. He argued that the use of the term long-covid on social media has a negative effect on public mental health, especially for Covid-19 survivors.

Figure 2 shows that the long-covid cluster is related to humans, Covid-19, the Covid-19 pandemic, interpersonal communication, vaccines, lockdown, and community. Cluster 2 emphasizes that the study of social movements is not always related to political issues, but also related to health crisis affairs and public communication. Based on the general concepts in cluster 2, social movements are communications that are built through narratives that are distributed and disseminated on social media with the aim of educating the prevention and handling of Covid-19. One of the articles that specifically discussed public communication and Covid-19 on social media was an article written by Anderson, Karami, and Bozorgi (2020) about social

media and Covid-19, i.e., Can social distancing be quantified without measuring human movements? This article discussed the use of social media as a means to find out how effective social restriction policies were during Covid-19. The authors of this article stated that social media can be used to determine human movement and thus it is sufficient to monitor social networks on social media to measure the effectiveness of social restriction policies. Scannell et al. (2021) also wrote about the use of Twitter as a means of discussing the pros and cons of the Covid-19 vaccine debate, which aimed to investigate public sentiment towards vaccines. This study reveals that Twitter as social media was a powerful digital medium that could quickly track public debates and sentiments and, as a result, decisions could also be made quickly.

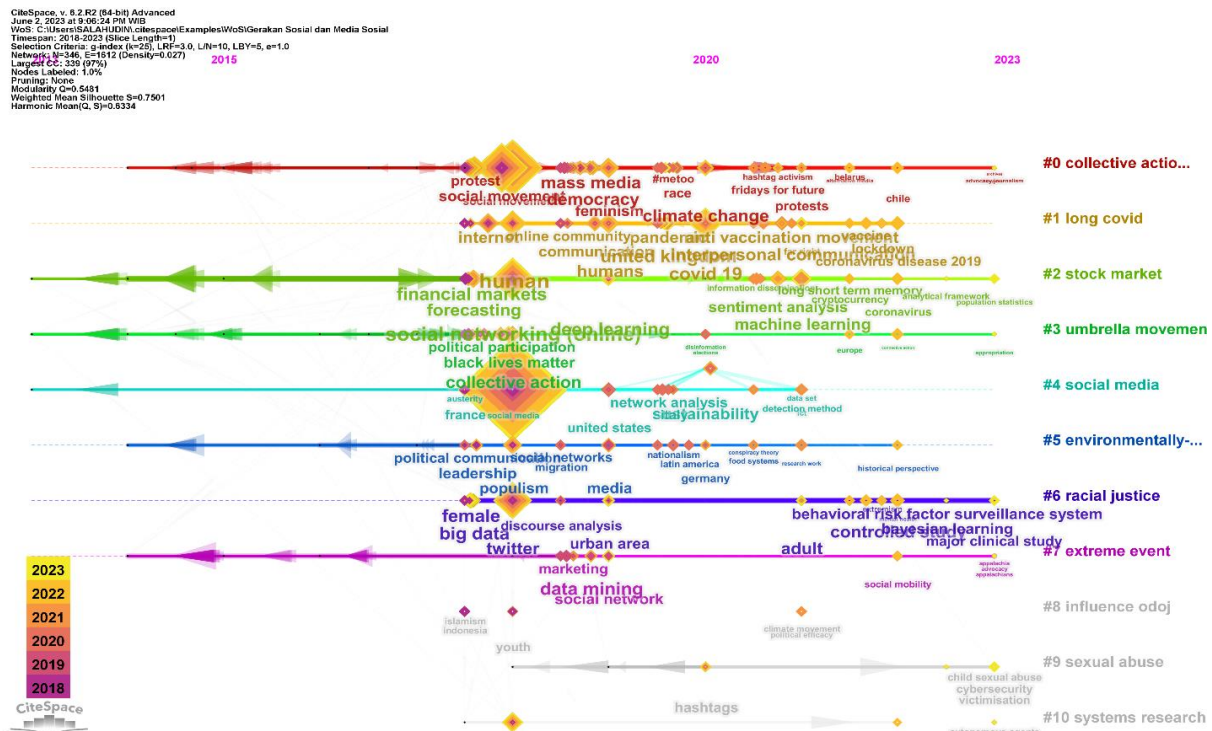


Figure 2. The distribution of sub-topics based on topic clusters in the study of social movements on social media

Thirdly, the stock market cluster (#4) has been covered in 35 articles discussing learning algorithms. The Silhouette value of 0.882 indicates that this cluster is related to the concepts of social networking (online), machine learning, and forecasting. The main article that discussed learning algorithms associated with the concepts of social networking (online), machine learning, and forecasting was an article written by Zhang et al. (2018) about Improving stock market prediction via heterogeneous information fusion. In this article, Zhang et al. (2018) discussed the use of information on social media to predict the stock market. Zhang et al. (2018) affirmed that social media prepares a variety of information to be managed with machine learning so that the valid and right information can be obtained to determine stock market movements in real time. On the political aspect, the concept of learning algorithms was clearly illustrated in an article authored by Chen and Stilinovic (2020) on new media and youth political engagement. Their study asserted that social media algorithms has an important role in increasing youth political participation. Social media algorithms can then be used as a means of political socialization education that runs automatically so that young people who are used to social interaction on social media automatically gain political knowledge that encourages them to participate in various government political issues.

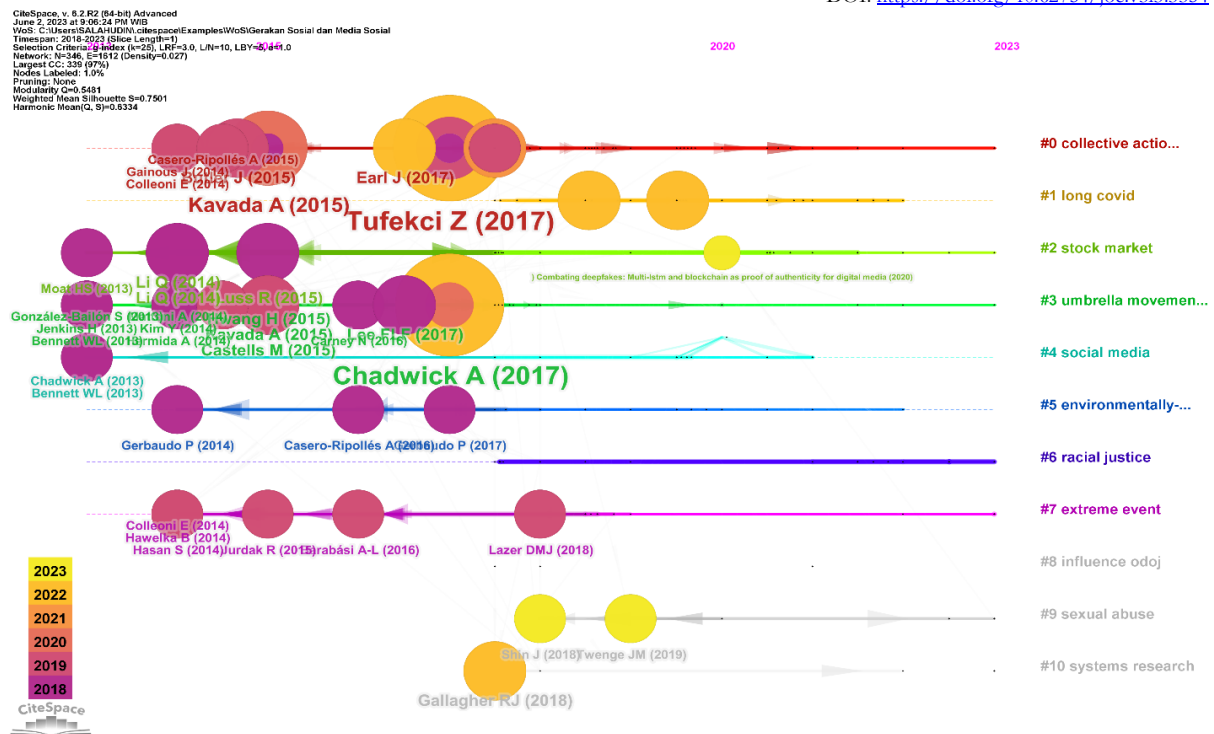


Figure 3. The distribution of authors based on topic clusters in the study of social movements on social media

Fourthly, the Umbrella Movement cluster (# 5) has been studied in 33 articles with the main concept of “Hong Kong” related to the concept of collective action, black lives matter, and political participation. The silhouette value of 0.823 indicates that there is a strong correlation between the Umbrella Movement, Hong Kong, the concept of collective action, black lives matter, and political participation. One of the articles discussing the topic in the Umbrella Movement cluster (#5) was an article on Scaling Social Movements Through Social Media: The Case of Black Lives Matter by Mundt, Ross, and Burnett (2018), published in the journal of Social Media and Society. This article specifically explained that social media can form social movement networks through communication, interaction, and mobilization, collective action, and political participation. Nevertheless, this article emphasized that social movement networking on social media requires movement management that understands digital society’s behavior, orientation, sentiment, and public expectations. Other articles in this cluster were Chu (2018), Pickard and Bessant (2018), Jenzen et al. (2021), and Shafi and Ran (2021). In general, each of these studies explained social movements in Hong Kong, which were executed via social media. They emphasized that in the era of digital society, social media has a significant role as a means of political participation and social movements based on collective values and aspirations to be fought for together.

Furthermore, the social media cluster (#6) has been discussed in 32 articles with a Silhouette value of 0.785, which shows that social media has a strong relationship with young people, social media, and sustainability. The environmentally-related migration cluster (#7) has been discussed in 26 articles with a Silhouette value of 0.834, which emphasizes that environmentally-related migration (#8) is directly related to climate protest, populism, media, and leadership. The racial justice cluster (#9) has been discussed in 25 articles with a Silhouette value of 0.861, which also shows that racial justice is related to the concepts of negative stances, Twitter, big data, and urban areas. The extreme event cluster has been discussed in 21 articles with a Silhouette value of 0.88, which shows that this cluster has a strong correlation with emergency risk communication, social networks, data mining, and social mobility. On average, clusters (#6-#9) show that social movements on social media have been carried out in various ways, including using the hashtag feature (#) as an effective means of mobilizing masses who network in one unit to discuss certain issues that become the concerns of each movement, such as environment, racism, migration, crisis, politics, and socio-economics.

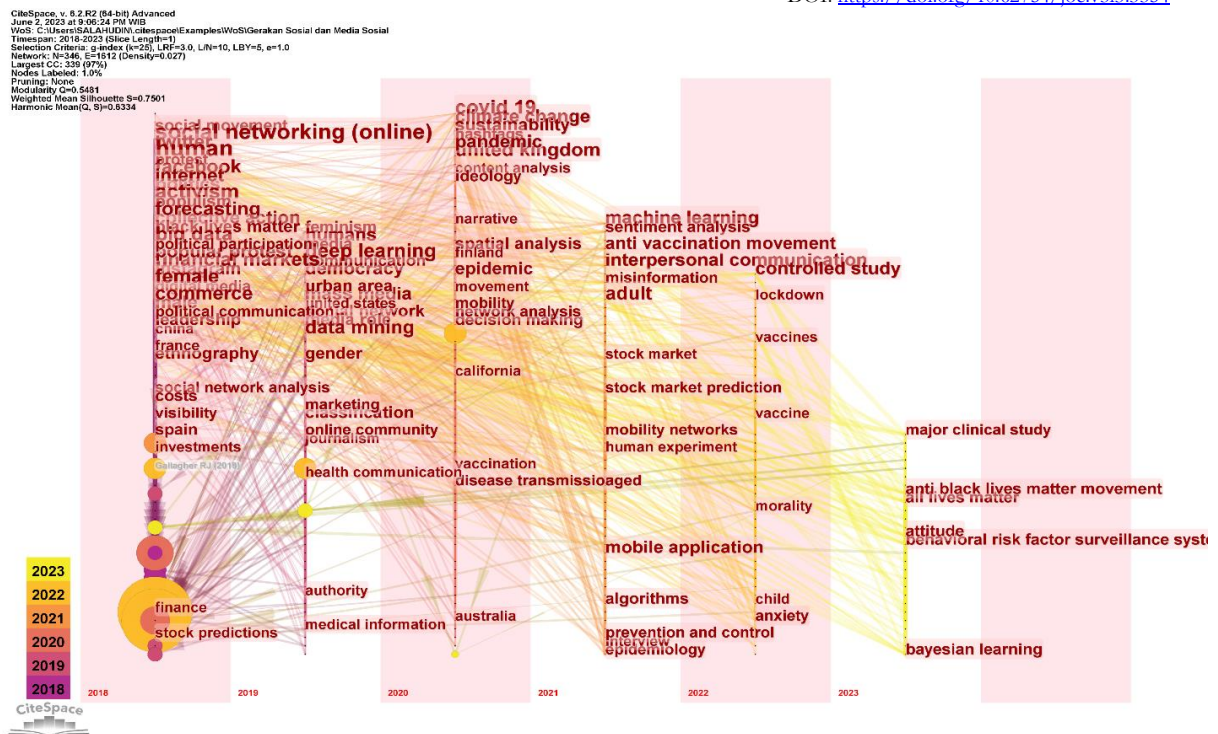


Figure 4. The trends of topics in the study of social movements on social media in the 2018-2023 period

Figure 4 above shows the trend of topics in the study of social movements on social media in the 2018-2023 period with an average modularity value of 0.5481 and an average Silhouette score of 0.7501, indicating that all the topics that appear in the analysis results in Figure 4 are connected to one another. In this case, all the topics that show up are a single topic that is interrelated in the study of social movements on social media. The figure also shows that there was a density of topics in 2018 related to the study of social movements, namely social networking, political communication, leadership, big data, political participation, human mobility, protests, Facebook, and the internet. Some of these topics illustrate that in 2018, the study of social movements has been associated with digital movements, such as the topics of big data, Facebook, the internet, and online social networks, which became an important part of social movement studies. At the same time, these topics show that social movements, digital media, and the internet are one entity that could be conceptualized as a conceptual framework in the study of social movements.

Furthermore, in 2019, there were several topics that were actually a continuation of the study of social movements on social media, i.e., data mining, online communication, health communication, marketing, medical information, feminists, and gender. The topic of study in 2019 led to the study of social movements related to health issues. This was caused by the Corona virus which became the world's attention at that time, which affected a change in the focus of study in all fields of science, including sociology, public health, policy, politics, and socio-culture. At the beginning of the emergence of Covid, all scholars, including sociologists who studied social movements, directed their attention to health issues. The study of social movements on health issues also continued in the 2020-2022 period, which shows that there were several issues that became significant concerns to scholars in the study of social movements, i.e., Covid-19, pandemics, epidemics, vaccines, decision-making, algorithms, interpersonal communication, vaccines, and algorithms. In 2021, there were several topics related to economic matters, which were related to stock market predictions generated from sources of information from various digital means and machine learning applications. Finally, in 2023, the topics in social movement studies were related to the use of digital media as a means of social movements, which shows that the trend of topics in social movement studies were strongly related to digital media, in which the main concept that needed to be discussed in depth was the concept of digital social movements.

Discussion

The study of social movements on social media has received the attention of many scholars from various disciplines, such as social sciences, computer science, environmental studies, arts and humanities, engineering, economics, management, energy, medicine, and psychology. The diversity of these disciplines shows that the study of social movements on social media can use cross-disciplines to examine socio-political, economic, social, and cultural topics and concerns (Rossi and von Bülow, 2016). The results of Cite Space Software analysis reveal that there are ten topic clusters in the study of social movements through social media, namely collective action (#0), long covid (#1), stock market (#2), umbrella movement (#3), social media (#4), environmentally-related migration (#5), racial justice (#6), extreme events (#7), influence odj (#8), sexual abuse (9#), and systems research (10#). Each study used social movements as the main concept to explain the issues being studied in the research. In the first cluster, the concept of social movement is associated with the use of social media as a means of communication, participation and outreach. Therefore, the first cluster is strongly related to the concept of protest, political communication, mass media, and several political hashtags used to campaign issues of racism, environmental sustainability, and upholding justice (Tam, 2018; Wahlström and Törnberg, 2021). Although each cluster has a different focus of study, the concept of social movements and collective actions on social media has become the main reference in explaining research issues in each cluster (Tufekci, 2017).

The concept of collective action is part of the concept of social movements which emphasizes that social movements are related to mobilization, advocacy, campaigns, education, outreach, and participation activities, which aim to build collective strength to fight for the collective values (Gray-Hawkins, 2018). The movement of collective power to fight for and obtain collective values is called collective action. In the context of using social media as a means of social movements, collective action is the output of a process of communication, interaction, discussion, debate, conflict, and competition (Sæbø, Federici, and Braccini, 2020). Therefore, the collective action cluster is the most dominant cluster compared to other clusters. However, the topics of study in other clusters are also directly related to collective actions and social movements. The use of social media for social movements is studied in regard to various issues, such as the issues of Covid-19, politics, democracy, racism, the economy, and digitalization (Hansson, Sveningsson, and Ganetz, 2021). Social media is one of the digital media that can disseminate narratives, and ideas, as well as help communication and participation to take place effectively (Uldam, 2018). The important thing to pay attention to in using social media for social movements is to ensure that social networks that are built on social media have a good mission, vision, values, and understanding of the ideals that are being fought for (Mundt, Ross, and Burnett, 2018).

The results of the Cite Space software analysis show that the study of social movements on social media has referenced several main authors who were concerned with the topic, such as Kavada (2015), Tufekci (2017), and Chadwick (2017). These three authors were concerned about social movements on Twitter as social media and focused on political issues, community resistance, and struggles for justice. Aside from these three writers, other scholars have also discussed social movements on digital media, which have also become an important reference for scholars who discussed social movements and social media (Alonso-Muñoz and Casero-Ripollés, 2018). In this context, the interesting part was that the studies of social movements on social media published in the 2018-2023 period did not reference general theories about social movements. This shows that the study of social movements in the digital era is undergoing transformation on digital issues, namely online social networks, digital social networks, political communication, leadership, big data, political participation, human mobility, online protests, Facebook movements, and internet society. It will also expand to other issues such as artificial intelligence, human mobility, and digital communication.

Conclusions

The study of social movements on social media has received the attention of many scholars from various disciplines, such as social sciences, computer science, engineering, arts and humanities, business economics, energy, medicine, psychology, and the environment. This shows that the study of social movements through

social media can be explained across disciplines, which shows that the study of social movements is no longer related to only social scientific disciplines such as sociology and political science.

There are ten topic clusters in the study of social movements through social media, such as collective action, which is the most dominant topic cluster used in the study of social movements on social media, followed by another cluster, i.e., the Covid-19 cluster, which is part of the focus of social movement studies, particularly in the 2019-2023 publication period. The social media cluster is part of the novelty in social movement studies in the last five years, i.e., studies related to the use of social media for social movements regarding various issues such as political, environmental, health, social and cultural issues. Along with the use of digital media for social movements, the trend of the topics in social movement studies has led to discussions of the use of digital media, the internet, and artificial intelligence as a means of communication, interaction, and participation in building collective power that can be used for political, economic, environmental, health, education, and other issues.

This research contributes to the development of the study of social movements on social media. Future

research can further discuss the topics in social movement studies discussed in this article. While this article has limitations on the aspect of using data only from the Scopus database, the mapping of references and topics in this article can be used as a basis for determining and developing the study of social movements on social media so that, in the next stage, social movement research can get more attention from more scholars. This will then have implications for the development of social movements both conceptually and practically. Indeed, future research needs to use data from other reputable international databases such as Web of Science and EBSCO.

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