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ROLE OF SOCIAL MEDIA IN EMPOWERING WOMEN: A BIBLIOMETRIC STUDY

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Abstract: This study examines the development of scholarly research on social media and women's empowerment over time through a systematic literature analysis. To achieve this, bibliometric data relating to social media and women's empowerment were extracted from the Scopus database, encompassing 684 articles by 1.636 authors published between 1994 and 2024. The study performed citation, co-authorship, and co-occurrence analyses using VOSviewer and MS Excel. Previous studies on women's empowerment have addressed gender equality, measures of empowerment, and policy strategies for women. With the rise of social media and increased participation by women on these platforms, research on this has taken on a new direction. This study examines this emerging trend, identifies existing research gaps, and suggests future possibilities for studies on social media and women's empowerment.

Keywords: women empowerment, social media, bibliometric analysis, Scopus, current trends.

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INTRODUCTION

Women's empowerment is a concept that was first introduced at the Third International Women's Conference in Nairobi in 1985. As a relatively new concept in gender literature, it addresses gender-sensitive issues, including political, economic, educational, social, cultural, and technological factors that contribute to the empowerment of women within a particular society. So, "empowerment" is a broad concept used differently, depending on the context or circumstances (Alkire et al. 2013). On the other hand, Kabeer (2005) says that empowerment can be explored through three closely interrelated dimensions: agency, resources, and achievements. Agency represents the process through which choices are made and put into action; it is, therefore, central to the concept of empowerment. Resources are the medium through which agency is exercised, and achievements refer to the outcomes of agency. Therefore, women's empowerment is the process by which women gain the ability to make and enact strategic life choices (Kabeer 2001). Sharaunga et al. (2019) agreed with Kabeer's theory. They explained that empowerment is better defined as

> the multidimensional process of increasing the capacity/capabilities (i.e., resources and agency) of an individual or group to make choices and to transform those choices into desired actions and outcomes.

These diverse dimensions of empowerment contribute to enhancing women's roles and opportunities in society. With the rise of digital technologies, however, social media has emerged as a transformative space where empowerment is reimagined and rearticulated. Digital platforms not only amplify women's voices but also provide opportunities for solidarity, activism, entrepreneurship, and leadership:

> Social media provides women with a vast platform to prove themselves. Some use it merely for entertainment, while others use it to fulfil their social needs and maintain relationships without having to travel or meet in person (Toshniwal 2019).

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Women's participation in social media should be understood as active engagement in various forms, including content creation, digital entrepreneurship, online advocacy, information sharing, and community building. These platforms have enabled women from all over the world to challenge established traditional gender norms, express themselves, organise movements, raise awareness about social issues, and access both social and economic possibilities. For example, movements like #MeToo, #WomenInSTEM, and regional initiatives such as #StopAcidAttacks in India illustrate how online platforms have increased women's voices. This transformation has led to a shift in how empowerment is conceptualised and examined, moving away from state-led or NGO-driven frameworks and towards bottom-up, technology-enabled participation.

In recent years, academic interest in the intersection of social media and women's empowerment has grown steadily. However, this body of research is still in its formative stage, often fragmented, unevenly distributed across regions, and influenced by varying disciplinary and theoretical priorities. To better understand these developments, bibliometric studies serve as a valuable tool for analysis. They help trace how the field is evolving, identify networks of collaboration, and highlight the thematic directions scholars are pursuing. By applying bibliometric methods, it maps the intellectual growth of the field, highlights its geographical spread, and uncovers the dominant themes shaping the discourse.

So, this study sets out to achieve the following objectives: *a)* to trace how research on social media and women's empowerment has grown and developed between 1994 and 2024; *b)* to identify the leading authors, institutions, and countries that have contributed to this field; *c)* to explore co-authorship and citation networks to understand the intellectual connections within the field; *d)* to analyse recurring keywords and thematic clusters that reveal how the research agenda has evolved; *e)* to uncover the underlying social and digital transformations reflected in the evolution of this research.

In line with the above objectives, the study is guided by the following research questions: in what ways has scholarly work on social media and women's empowerment evolved over the

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past three decades? Which countries, institutions, and authors have emerged as key contributors to this field of study? What themes, concepts, and directions are most prominent in the existing body of literature? What underlying social and digital transformations are reflected in the evolution of research on social media and women's empowerment?

METHODOLOGY

Research design

Bibliometric analysis is a popular and rigorous method for exploring and analysing large volumes of scientific data. It helps to unpack the evolutionary nuances of a specific field while shedding light on its emerging areas (Donthu et al. 2021). It is a popular approach to investigate the available literature on that particular domain. According to Bellardo:

> The bibliometric analysis helps in depicting the history and the general state of the art of a specific research field or topic while considering written production as the major formal channel of communication among scientists (Bellardo 1980).

During the bibliometric analysis phase, VOSviewer is used to define content, criteria, and parameters. The VOSviewer has gained popularity as a bibliometric visual tool, which helps researchers find vital information through data visualisation (Van Eck, Waltman 2018). Bibliometric analysis allows researchers to quantitatively map the structure, dynamics, and trends within a body of academic literature.

In the context of this research, this method enables the identification of influential authors, institutions, journals, and key thematic areas that have shaped the discourse over time. Unlike qualitative methods, bibliometric analysis offers a systematic, objective, and large-scale overview of the research, which is particularly valuable when exploring a broad and evolving field. By using tools such as co-authorship, co-citation, and keyword co-occurrence analysis, this approach reveals con-

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ceptual linkages and emerging trends that may not be immediately apparent through traditional literature reviews. These characteristics make it unique compared to other methodologies.

Data source

With over 25.000 journals, conference proceedings, books, and patents from a broad range of areas, including social sciences, humanities, technology, and medicine, the Scopus database is an extensive academic search platform. The facilities for citation analysis, author profiling, keyword mapping, and co-authorship networks make it especially useful for monitoring research trends, identifying prominent publications, and assessing academic influence. Therefore, to fulfil the objectives of this study, data have been collected from the Scopus database only.

Data collection procedures

More than 20.000 results appeared when searching the keywords "women empowerment" and "empowerment of women." On the other hand, only 4.137 search results appeared when we typed the keywords "social media and women empowerment," "empowerment and social media", "Facebook, Instagram, YouTube, Twitter, LinkedIn and empowerment of women".

This indicates the recent involvement of social media in different aspects of empowerment. The search was conducted in the central Scopus database to refine the inclusion and exclusion criteria for the data. Inclusion criteria include studies published in the last thirty years, i.e., 1994-2024 as the Fourth World Conference on Women in Beijing in 1994 marked a turning point in global efforts for gender equality and women's rights, and the first wave of digital connectedness occurred in the late twentieth century; subject area limited to social science, as understanding the relationships between people and communities is aided by this interdisciplinary approach, which also addresses contemporary global issues and enriches historical and cultural contexts; document type limited to article only; in

ISSN 2283-7949
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the language section, articles published in English are included. It excludes other document types such as proceedings papers, meeting abstracts, editorial materials, early access articles, review articles, letters, book reviews, news items, book chapters, and studies from subject areas other than social science.

After setting the criteria, only 298 documents were extracted from the 726 articles found in the "social media and empowerment" category. The keyword "empowerment and social media" yielded 2.806 documents, but only 1.016 articles were extracted after exclusion. While using the keywords "social media, gender, and empowerment", 441 pieces of literature were found, and 197 were extracted. Similarly, the phrase "Facebook and women empowerment" shows 48 documents, of which 22 have been extracted. "Instagram and women empowerment" contained 42 documents, from which 25 were extracted. "YouTube and women's empowerment" has 33 articles, but only 15 documents meet the criteria. Thirty-six documents on "Twitter and empowerment of women" were found, and 18 were extracted. Only three articles meet the requirements when it comes to "LinkedIn and women's empowerment".

A total of 1.594 articles were extracted separately in CSV (Comma-Separated Values) format. The dataset has several similar entries. By using MS Excel's conditional formatting with unique values for author, year, title, and source, the 684 articles dataset was finalised. To identify and understand the underlying research themes, the output of the "VOSviewer" has been used for comprehensive bibliometric analysis. It visualises the links between the units of analysis, such as sources, authors, organisations, and countries, and various bibliometric indicators, including citation, co-citation, co-occurrence, co-authorship, and bibliographic coupling. Some of the statistical analysis was conducted using MS Excel. These analyses were used to generate graphs and tables for a clearer understanding of the concepts.

RESULTS AND DISCUSSION

This section presents the results of the data analysis, including trends in publications, citations, the top ten authors and

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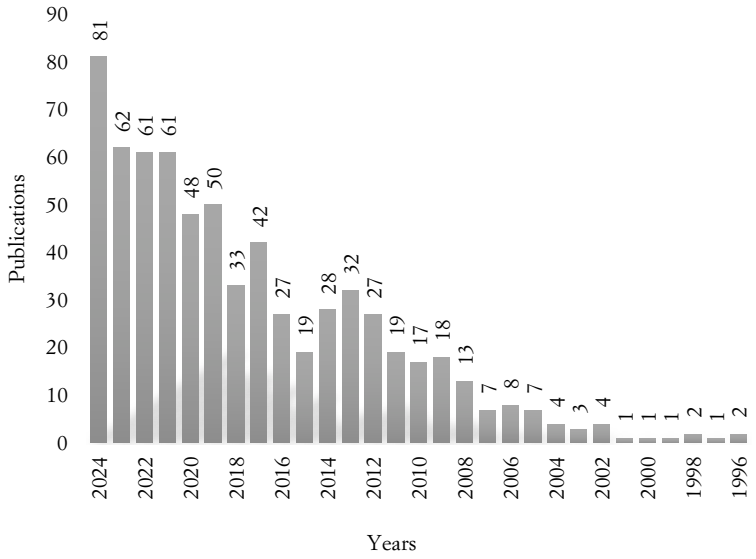

Fig. 1. *Trends of publication per year.*

publications, journals, organisations, and maps showing country-wise publications. While organising the dataset, it was observed that the research area is both multidimensional and multidisciplinary. More than 50% of the articles belonged to disciplines of social science (53,87%), arts and humanities (10%), business, management, and accounting (10%), economics (9,5%), medicine (8,3%), environmental science (5%), and 3,33% belonged to other domains.

Trends in publication

In 1995, the United Nations hosted the Fourth World Conference on Women in Beijing. The Beijing Declaration and Platform for Action has been adopted as a comprehensive policy agenda, which became a cornerstone of women's empowerment initiatives around the world and marked a turning point

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in global efforts for gender equality and women's rights. Additionally, the initial wave of digital connectivity in the late 1900s helped determine the timeframe of 1994–2024.

The publication years of all 684 papers are displayed in Fig. 1. The strong correlation coefficient of 0,9272 between research on social media and women's empowerment, as well as the rise in publications, reflects more than a statistical coincidence; it mirrors a profound social transformation. The rapid expansion of social media since the mid-2000s has created new spaces for women to access information, build supportive networks, and challenge traditional socio-cultural constraints. These digital platforms have not only amplified women's voices but also made their struggles and achievements more visible, fueling a rise in academic interest. The growth from just four publications in 2002 to 81 in 2024 parallels this shift, as scholars increasingly explore the intersection of technology, gender, and empowerment. Global and local movements, such as #MeToo and Beti Bachao Beti Padhao, have demonstrated how online mobilisation can influence public discourse and policy, further reinforcing the scholarly relevance of the topic. Thus, the strong link observed in the data represents a mutually reinforcing cycle: the digital sphere empowers women, and the resulting social change inspires more in-depth academic inquiry.

Citation analysis of authors, organisations, countries, and sources

Citation analysis is a fundamental method of scientific mapping that examines the frequency and patterns of citations among scholarly works. It is based on the assumption that citations represent intellectual connections between publications, as one work acknowledges, builds upon, or critiques another (Small 1973; Garfield 1979). In this study, citation analysis is employed to explore the intellectual structure of research on social media and women's empowerment. Using VOSviewer, we analyse citation networks across units, authors, journals, organisations, and sources to identify influential contributors and the flow of knowledge within this field. VOSviewer generates

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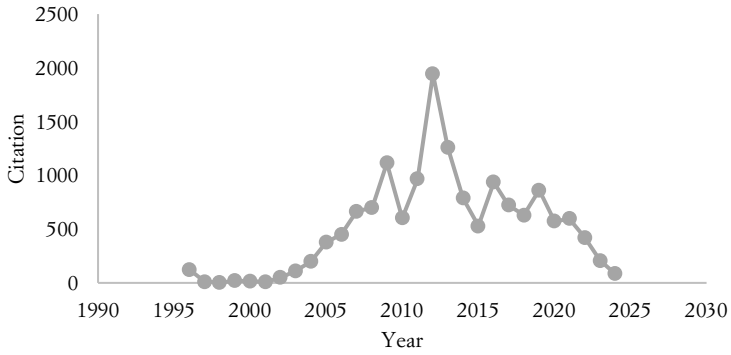

Fig. 2. *Trends of citations year-wise.*

visualisations of countries, organisations, documents, and topics, facilitating the identification of crucial themes within each cluster. The theme colour represents the relationship between authors, publications, organisations, and countries, whereas the direction and distance between themes reflect research flow and closeness.

Year-wise trends in citations

The term "year-wise trends in citations" refers to the changes in the number or frequency of citations for a particular topic, author, journal, or field of study over time. Such patterns provide insights into the shifting scholarly relevance and impact of research across different periods. In Fig. 2, the year-wise distribution of the most cited articles illustrates how the terms "social media and women's empowerment" have gained prominence in scientific research, highlighting the evolving academic interest in this intersection. It is depicted in Fig. 2 that, after the emergence of popular social media platforms like Facebook in 2004 and Twitter in 2006, the research on social media and issues related to women, the digital divide between men and women, rich and poor, and rural and urban composition has been of interest to many scholars. Though the citation level

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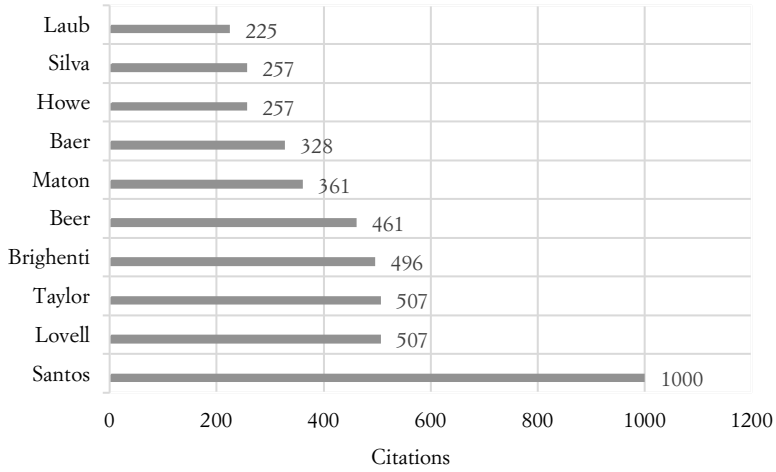

Fig. 3. *Top 10 highly cited authors*.

grew slowly at first, between 2010 and 2015 it reached its peak. The citations appear to stabilise over time as the study gains wider acceptance.

Highly cited authors

The top 10 leading authors on social media and women's empowerment are ranked according to the number of citations. Filipe M. Santos emerges as the most influential contributor in the Scopus database, with a total of 1.000 citations from a single article. Sarah Taylor Lovell ranks second with 507 citations, followed by John R. Taylor, who has also received 507 citations. Other notable contributors include Andrea Brighenti; David Beer; Keeneth I. Maton; Hester Baer; P. David Howe; Carla Filomena Silva; and Carolyn Laub, each with citations ranging between 500 and 200.

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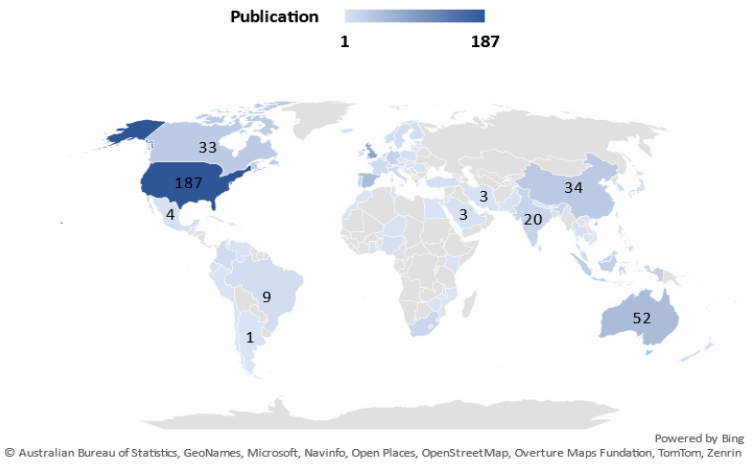

Fig. 4. *Map of countries generated through Microsoft Excel.*

All the listed authors are first authors. Most of them have contributed a single publication each, while the authors ranked eighth and ninth have two publications. Based on the number of citations calculated using VOSviewer software, it can be concluded that these authors are among the most influential contributors in the domain of social media and women's empowerment.

Top countries and collaborations

Based on total publications by country (TPC), Fig. 4 highlights the most productive nations contributing to the global expansion of research on social media and women's empowerment. The United States leads the field with 187 publications and 5.457 global citations, followed by the United Kingdom, which holds the second position with 82 publications and 2.979 citations. Australia ranks third, contributing 52 publications

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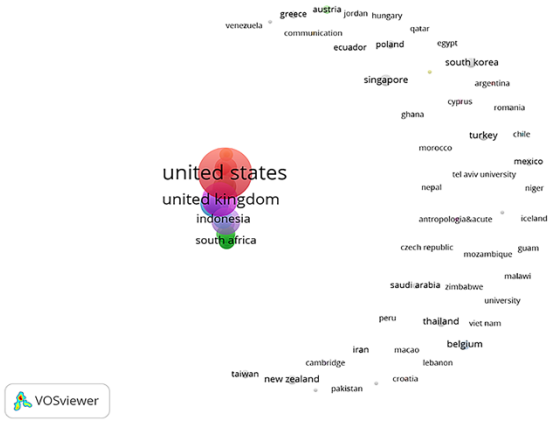

Fig. 5. *Map of countries generated through VOSviewer.*

with 1.291 citations. Beyond the top three, other active contributors include Canada, Indonesia, Germany, India, Spain, and China, each with between 20 and 34 publications. Notably, India ranks 10th, with 20 publications and 149 citations, reflecting its emerging but still limited presence in this research domain.

Using the criteria of at least one publication and a minimum of two citations, VOSviewer generated a country-level citation map to visualise global contributions to the field. Out of 83 countries, 72 met these requirements, demonstrating that research on social media and women's empowerment has gained visibility across a wide geographical spectrum.

As depicted in Fig. 5, the map illustrates not only which countries are publishing in this domain but also how their work is being acknowledged through citations. This helps reveal the global flow of academic influence, where certain countries emerge as central hubs while others occupy more peripheral positions. Such visualisation highlights both the expansion of interest in the topic worldwide and the persistent inequalities in knowledge production, with core countries dominating citations. At the same time, contributions from many developing regions remain less visible.

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DOI: 10.54103/gjcpi.2026.28120

Tab. 1. *Top ten organisations*

Rank	Organisations	Publications	Citations	Average
1	University of Calgary, Canada	3	19	6,33
2	Department of Tourism, University of Otago, Dunedin, New Zealand	2	185	92,50
3	University of Southern Denmark, Denmark	2	85	42,50
4	Western Sydney University, Australia	2	48	24,00
5	Macquarie University, Australia	2	29	14,50
6	Drexel University, United States	2	13	6,50
7	University of Fort Hare, South Africa	2	12	6,00
8	Monash University, Australia	2	11	5,50
9	School of Management, Huazhong University of Science and Technology, Wuhan, China	2	11	5,50
10	Brock University, Canada	2	10	5,00

Top organisations

Organisations can play a crucial role in research and development. It can provide resources, platforms, and collaboration opportunities through which in-depth studies related to the topics can be analysed scientifically. The table ranks the top 10 academic institutions among the world's top 1.000 universities. The inclusion of these organisations reflects their increasing interest and contributions to gender studies and technological development.

With three publications, the University of Calgary, Canada, ranks first in terms of output. The other institutions in the dataset have two publications each. Interestingly, the Department of Tourism at the University of Otago in Dunedin, New Zealand, ranks second in publication count but surpasses all others in impact, with 185 citations, making it the most influential organisation in the field. The University of Southern Denmark is followed by more than 85 citations. In comparison, other institutions such as Western Sydney University (48 citations), Drexel University (13 citations), University of Fort Hare (12 citations), Monash University (11 citations), the School of Management at Huazhong University of Science and Technology,

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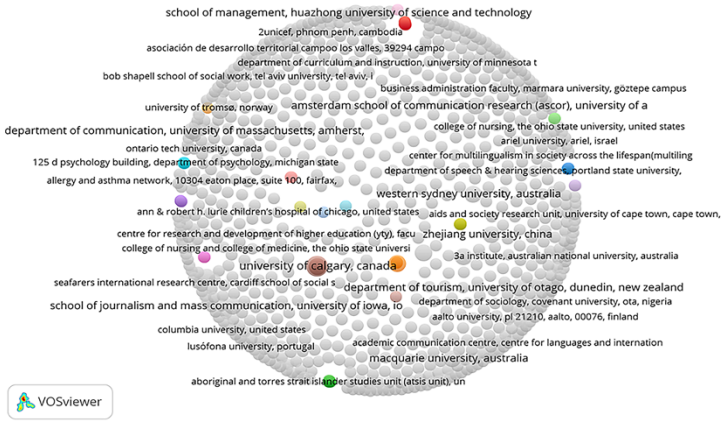

Fig. 6. *Organisations connect with the publication of social media and the empowerment of women*.

Wuhan (11 citations), and Brock University (10 citations) represent a wide geographical spread, highlighting the global nature of research in this area. Regarding organisations, VOSviewer has generated a map based on the citation analysis of the "organisation" unit. If the minimum number of organisations is kept to one and the minimum number of citations is three, then 855 of the 1.255 organisations meet the thresholds. The colourful clusters indicate the highly cited publications of the institutions.

This analysis is sociologically important because it brings attention to the institutional dimension of knowledge creation. Universities and research centres are not just places where studies are conducted; they are the hubs where global conversations about gender, empowerment, and the digital world are shaped, validated, and shared. The fact that institutions from across the globe, North America, Europe, Oceania, Asia, and Africa, contribute to this field represents how deeply women's empowerment in the digital age resonates worldwide.

Yet, the differences in publication counts and citation numbers remind us that not all voices are heard equally. They reflect larger issues such as academic prestige, unequal resources, and varying access to platforms that enhance visibility

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in research. Organisational analysis in this way takes us beyond simple numbers. It helps us understand how power, geography, and academic hierarchies shape whose work becomes influential and whose contributions remain less visible in the broader discourse on social media and women's empowerment.

Top ten journals

The table below presents data on the total number of articles and citations in the top journals publishing on this topic. The leading journals are ranked based on their overall number of publications. Table 2 presents the top 10 leading journals, along with their average citations per article.

These journals cover a wide range of multidisciplinary areas, including science, technology, economics, communication, health, and the environment.

The journal *Sustainability* (Switzerland) published the highest number of papers on social media and women's empowerment, with 15 articles and a total of 194 citations. This is followed by the *American Journal of Community Psychology*, which has 12 publications and the second-highest citation count of 963. *New Media and Society* ranks third with nine publications and 754 citations.

Communicar occupies fourth place with nine publications and 188 total citations. Although the *Journal of Business Ethics* is ranked fifth with eight publications, it has the highest citation count of 1.368. *Feminist Media Studies* follows with six publications and 364 citations, while the *Proceedings of the ACM on Human-Computer Interaction* also has six publications, but with only 45 citations.

The 8th, 9th, and 10th positions are held by *Communication and Sport* (5 publications, 40 citations), *International Journal of Communication* (5 publications, 20 citations), and *Science and Engineering Ethics* (5 publications, 114 citations).

Among these, the *Journal of Business Ethics* recorded the highest average citations per publication (171), followed by *New Media and Society* (83,78) and the *American Journal of Community Psychology* (80,25).

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Tab. 2. *Top ten journals*

Rank	Journals	Publications	Citations	Average citation per article
1	Sustainability (Switzerland)	15	194	12,93
2	American Journal of Community Psychology	12	963	80,25
3	New Media and Society	9	754	83,78
4	Comunicar	9	188	20,89
5	Journal Of Business Ethics	8	1.368	171,00
6	Feminist Media Studies	6	364	60,67
7	Proceedings of the ACM on Human-Computer Interaction	6	45	7,50
8	Communication And Sport	5	40	8,00
9	International Journal of Communication	5	20	4,00
10	Science And Engineering Ethics	5	114	22,80

Top ten cited articles

These articles make significant contributions and serve as a foundation for their respective fields. They help in understanding the key ideas, theories, and approaches used in this area of research. Covering diverse dimensions such as the economy, health, sports, environment, gender, technology, and social change, these articles reflect both the trends and significant advancements that have already been achieved. They also offer researchers opportunities to improve the quality of their work and explore under-researched areas.

Out of 684 documents, 25 have received more than 100 citations, 556 have fewer than 100 citations, and 103 have not yet been cited. With 1.000 citations, *A Positive Theory of Social Entrepreneurship* by Santos (2012), published in the Journal of Business Ethics, ranks at the top.

ISSN 2283-7949
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Tab. 3. *Top ten cited articles.*

Rank	Title	Journals	Year	Citations
1	A Positive Theory of Social Entrepreneurship	Journal of Business Ethics	2012	1.000
2	Supplying urban ecosystem services through multifunctional green infrastructure in the United States	Landscape Ecology	2013	507
3	Visibility: A category for the social sciences	Current Sociology	2007	496
4	Power through the algorithm? Participatory web cultures and the technological unconscious	New Media and Society	2009	461
5	Empowering community settings: Agents of individual development, community betterment, and positive social change	American Journal of Community Psychology	2008	361
6	Redoing feminism: Digital activism, body politics, and neoliberalism	Feminist Media Studies	2016	328
7	Critical health literacy: A review and critical analysis	Social Science and Medicine	2011	311
8	The (In)validity of Supercrip Representation of Paralympian Athletes	Journal of Sport and Social Issues	2012	246
9	Youth empowerment and high school gay-straight alliances	Journal of Youth and Adolescence	2009	225
10	Using methods that matter: The impact of reflection, dialogue, and voice	American Journal of Community Psychology	2005	224

The article *Supplying Urban Ecosystem Services Through Multifunctional Green Infrastructure in the United States* by Lovell et al. (2013), published in Landscape Ecology, has 507 citations and is the second most cited. This is followed by Brighenti (2007), whose article *Visibility: A Category for the Social Sciences,* published in Current Sociology, has 496 citations. Beer (2009) ranks fourth with 461 citations for the *study Power*

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GLOCALISM: JOURNAL OF CULTURE, POLITICS AND INNOVATION
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Through the Algorithm? Participatory Web Cultures and the Technological Unconscious, published in New Media and Society, engages with *Lash's conceptualisation of power in Web 2.0 applications*. *Empowering Community Settings: Agents of Individual Development, Community Betterment, and Positive Social Change* by Maton (2008), published in the American Journal of Community Psychology, has been cited 361 times. Ranking sixth, Baer (2016) published *Redoing Feminism: Digital Activism, Body Politics, and Neoliberalism* in Feminist Media Studies, which has 328 citations.

The last four highly cited works include: *Critical Health Literacy: A Review and Critical Analysis* by Deborah Chinn (2011), with 311 citations. *The (In)Validity of Supercrip Representation of Paralympian Athletes* by Silva and Howe (2012), with 246 citations. *Youth Empowerment and High School Gay-Straight Alliances* by Stephen T. Russell et al. (2009), with 225 citations. *Using Methods That Matter: The Impact of Reflection, Dialogue, and Voice* by Pennie Foster-Fishman et al. (2005), published in the American Journal of Community Psychology, with 224 citations.

Taken together, this analysis provides a broad overview of the origins, trends, and key aspects of research on social media and women's empowerment.

Co-occurrence analysis

Co-occurrence analysis focuses on analysing counts of co-occurring entities within a collection of units.

It is used to study the potential relationship between two bibliographic items that appear in the same dissertation and to explain the collective interconnections of key texts based on their paired presence (Zhou et al. 2022). According to Van Eck and Waltman (2014), co-occurrence analysis is a bibliometric technique that identifies relationships between items, such as keywords, authors, or concepts, by measuring how frequently they appear together in scholarly publications, thereby mapping thematic linkages and research trends.

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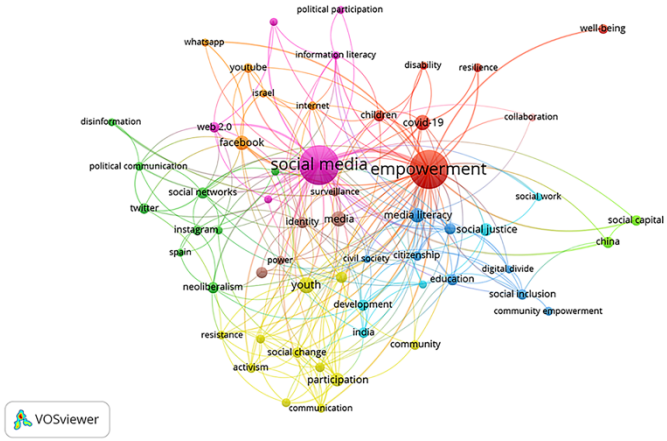

Fig. 7. *Author's keywords analysis.*

The direction of research can be reflected by analysing keywords representing the study's content. This approach can also be used to track the evolution of a research field, identify emerging trends, and ascertain topics covered by collections of publications. VOSviewer was used to conduct a map-based bibliographic analysis of keyword data by applying three criteria: all keywords, author keywords, and index keywords. Each type of keyword analysis adds distinctiveness, making research more accessible, discoverable, and appropriately classified in the academic and professional worlds.

Keywords were visualised and displayed in different colour clusters. Each colour represents a thematic cluster and its subthemes. The size of the node indicates the occurrence of a keyword, the link between the nodes represents co-occurrences between keywords, and the thickness of the link indicates the occurrences of the co-occurrences between keywords.

As shown in Fig. 7, the network visualisation of authors' keywords comprises ten clusters, developed and generated using VOSviewer software (version 1.6.20) based on the identified interconnections. To set the thresholds, only keywords occurring at least five times were considered. Out of 2.411 key-

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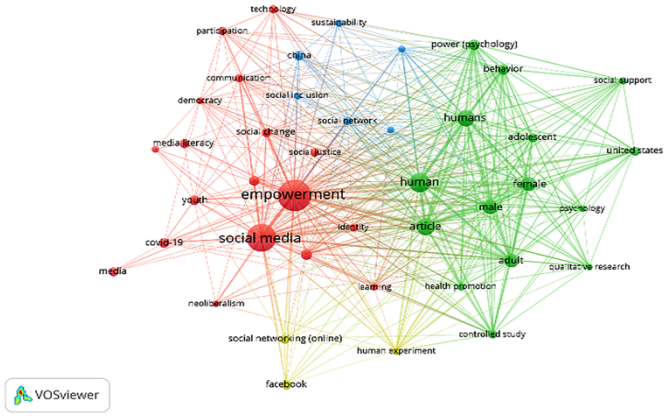

Fig. 8. *All keywords analysis.*

words, 58 met this criterion. Among them, the top ten most frequently occurring keywords are social media, empowerment, youth, COVID-19, media, media literacy, Facebook, participation, social justice, and digital literacy. The total strength of the co-occurrences of these keywords visualised ten clusters. The first cluster contains eleven terms, followed by the second with nine, the third with eight, the fourth and fifth with six each, the sixth with five, the seventh and eighth with five each, the ninth with two terms, and the tenth with just one keyword. A different colour in the figure represents each cluster. Among these, two clusters stand out as the most significant. Cluster one (red), where empowerment is the key theme, shows strong connections with keywords such as children, COVID-19, disability, resilience, and well-being. Cluster two (purple), centred on the theme of social media, includes sub-themes such as Web 2.0, social networking sites, political participation, and information literacy. These keywords were frequently used and demonstrate strong connections with studies on social media and women's empowerment. To visualise all keywords that occurred at least ten times, out of the 3.451 keywords, 41 met the threshold. These are grouped into four clusters.

The first cluster (red) comprises 14 keywords, among which "empowerment" occurs 150 times with a total link

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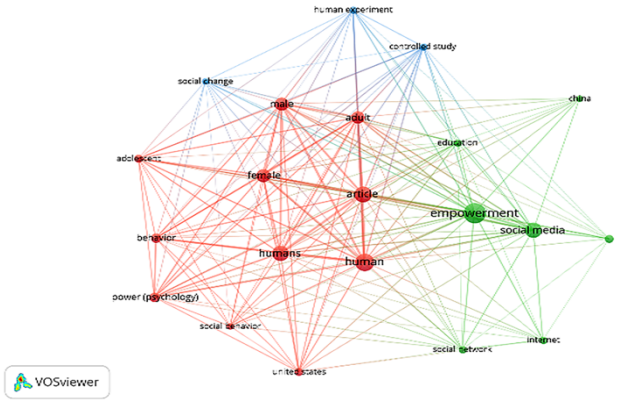

Fig. 9. *Index keywords analysis.*

strength of 292, and "social media" occurs 190 times with a total link strength of 447. The second cluster (green) contains 15 keywords, with *human* occurring 73 times and having the highest total link strength of 477. The third cluster (blue) includes six keywords, with *China* appearing 18 times and a total link strength of 37. The fourth cluster (yellow) consists of only three keywords that appeared more than ten times in the articles. Among them, *social networking* occurs 17 times with a total link strength of 38 (see Fig. 8). Index keywords are terms that help users locate, navigate, and search information in databases and search engines. In this study, 21 out of 1.349 keywords met the minimum occurrence threshold of ten (see Fig. 9).

Transitioning to the discussion of clusters, the first (red) incorporates 11 items: human, adolescent, adult, article, behaviour, female, humans, male, power (psychology), social behaviour, and the United States. Among them, the term human occurred 73 times, with a total link strength of 398. The second cluster (green) includes seven items: China, education, empowerment, the internet, social media, social networks, and social networking. The word empowerment occurred 98 times and had the highest link strength (241) among the keywords in this cluster. The third cluster (blue) contains three items: controlled studies, human experiments, and social change. Among these,

ISSN 2283-7949
GLOCALISM: JOURNAL OF CULTURE, POLITICS AND INNOVATION
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controlled studies occurred the most, with 14 occurrences and a total link strength of 100 (see Fig. 9).

Analysis results of co-authorship

Scientific collaboration networks in academic research involve scientists as participants, seeking solutions to social, political, economic, and technical challenges using interdisciplinary methods. They are no longer independent researchers (Sonnenwald 2007). Researchers' collaboration can lead to the construction of new ideas, innovations, and communication networks, generating knowledge, information, and resources that can enhance productivity and reduce research costs (Wagner 2011).

In the analysis of co-authorship, Lucie Cluver, affiliated with the University of Oxford, United Kingdom, holds the strongest co-authorship network with a total link strength of 22. Cluver and colleagues, including Carine Asnong; Mark Boyes; Angelique Chetty; Lucie Luver; Jenny Doubt; Yasmin Dunkley; Lesley Gittings; and Rebecca Hodes, have made significant contributions to the study, with a total link strength of 22 and an average of 15 citations per document. Additionally, the second cluster (green), with a total link strength of 17, includes 18 authors from various countries. Cluster three (blue) was identified as having collaborative relationships with other authors, with a total link strength of 12. P. David Howe was a top collaborator in this cluster, with 252 citations and two total link strengths.

Overall, 1.255 organisations have contributed to research in this field. The University of Calgary, Canada, had three related articles and 19 citations, with a total link strength of 2. With a total link strength of 16, the AIDS and Society Research Unit at the University of Cape Town, South Africa, demonstrates active engagement in this field. Other highly cited organisations actively engaged in this area include the University of Illinois, United States; the University of Trento, Italy; the University of York, United Kingdom; and Loughborough University, Leicestershire, United Kingdom. The earliest studies in this field were conducted in the United States, Australia, the United Kingdom, Spain, China, and 83 other countries. The United

ISSN 2283-7949
GLOCALISM: JOURNAL OF CULTURE, POLITICS AND INNOVATION
DOI: 10.54103/gjcpi.2026.28120

States and the United Kingdom have the highest number of publications. The United States has produced 187 publications, received 5.457 citations, and achieved a total link strength of 48. It has collaborated with 23 other countries, primarily Australia, the United Kingdom, and Spain. Similarly, the United Kingdom has contributed 82 publications, attained 2.979 citations, and 32 total link strengths. It has collaborated with 32 countries, mainly the United States, Australia, and Spain.

Analysis results of bibliographic coupling and co-citation

Bibliographic coupling, much like co-citation, is a similarity measure that uses citation analysis to assess the relatedness of scholarly works. It occurs when two studies cite the same third source in their bibliographies, indicating that they may address similar subject areas (Martyn 1964). Among individual works, *A Positive Theory of Social Entrepreneurship* by Santos (2012), published in the *Journal of Business Ethics*, stands out with 1.000 citations and a total link strength of 7. Santos's work demonstrates the highest bibliographic coupling (see Fig. 4).

In terms of publication sources, bibliographic coupling reveals that *Sustainability* (Switzerland) is the most strongly coupled journal, with 15 publications, 194 citations, and a total link strength of 48. It is followed by the *American Journal of Community Psychology*, which has 12 publications, 963 citations, and a total link strength of 27. The journal *Comunicar* ranks next with nine publications, 188 citations, and a total link strength of 25.

At the institutional level, the University of Calgary, Canada, contributes three publications with 19 citations and a total link strength of 152. However, in terms of the highest number of citations, the University of Illinois at Urbana-Champaign, Urbana, IL, ranks as the top coupled organisation with 507 citations. Furthermore, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, has two publications and a total link strength of 1.031.

ISSN 2283-7949
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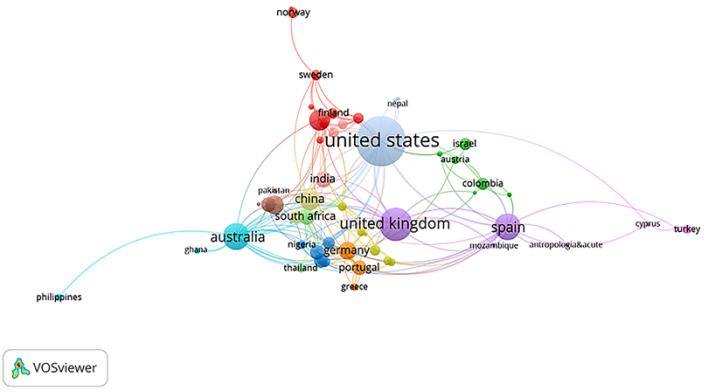

Fig. 10. *Co-authorship analysis of countries.*

Regarding individual contributions, Vanessa Apaolaza, and Paula Fernández have achieved a total link strength of 1.055 from their two publications and 85 citations related to social media and women's empowerment. Sarah Taylor Lovell holds the highest number of citations, with 507, while Syed Ishtiaque Ahmed has the highest total link strength of 1.299.

TOWARDS A SOCIOLOGY OF BIBLIOMETRIC STUDY

The growth of research on social media and women's empowerment, as revealed through bibliometric analysis, highlights deep social and digital transformations that have unfolded over the past three decades. This changing pattern reflects not only the expansion of academic interest but also a broader shift in how societies understand gender, power, and participation in the digital era.

In the early stages, research primarily focused on the digital divide, emphasising how women's limited access to technology constrained their opportunities for participation and visibility. At that time, technology was largely viewed as a tool for development rather than as a social space that could reshape gender relations. As social networking platforms such as Facebook,

ISSN 2283-7949
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YouTube, and Instagram began to dominate everyday communication, research gradually moved away from access-based discussions to exploring agency, identity, and representation. Researchers have begun to examine how women utilise these digital spaces to articulate their voices, establish communities, and challenge traditional power structures.

On a broader scale, this intellectual evolution corresponds to two parallel transformations, social and digital. On the social level, women around the world are increasingly asserting their presence in public discourse, challenging patriarchal norms, and using digital platforms to amplify voices that have long been silenced (Fraser 2013). On the digital level, the rise of mobile connectivity and participatory media has revolutionised communication, shifting it from one-directional information flow to an interactive and inclusive process. Women are no longer just consumers of media; they have become creators, curators, and catalysts of change, using social platforms to share experiences, mobilise collective action, and engage in transnational advocacy (Castells [1996] 2010; Carstensen et al. 2020).

Over time, feminist scholars have applied a more intersectional lens to this discussion. It recognises that women's experiences with digital media are not uniform. They are profoundly shaped by factors such as class, caste, ethnicity, education, and geographic location. For example, while urban, educated women may use social media to promote their work, engage in activism, or expand professional networks, women from rural or marginalised backgrounds often face barriers such as poor connectivity, limited digital literacy, or restrictive social norms that discourage online participation. This intersectional approach highlights the uneven distribution of digital empowerment, reminding us that connectivity alone does not guarantee equality. Rather, empowerment depends on how technology is accessed, interpreted, and used within diverse social contexts (Kabeer 1999; Crenshaw 1991). Another significant transformation evident in the bibliometric patterns is the geographical diversification of research. Euro-American perspectives dominated early research, often treating gender and media through Western feminist frameworks. In recent years, however, scholars from the Global South, particularly from India, Africa, and

ISSN 2283-7949
GLOCALISM: JOURNAL OF CULTURE, POLITICS AND INNOVATION
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Latin America, have contributed new and contextually grounded understandings of empowerment. These contributions have enriched feminist media studies by emphasising local realities, community-based agency, and collective resilience, moving beyond universalised notions of empowerment (Banaji, Buckingham 2013; Dutta 2022).

Drawing a comparison between online and offline forms of activism further deepens this understanding. Traditional women's movements through community meetings, protests, and collective organising have long served as foundations for empowerment and social change. While these offline efforts foster sustained engagement and tangible outcomes at the grassroots level, digital platforms introduce new dimensions of immediacy, visibility, and global interconnectedness. Movements such as *#MeToo*, *#BringBackOurGirls*, and *PinjraTod* demonstrate how online activism can transcend geographical boundaries, amplify voices, and foster solidarity across diverse communities. Nevertheless, these advancements reveal new forms of inequality within digital spaces. Issues such as algorithmic bias, online harassment, and gendered visibility gaps continue to shape whose voices are amplified and whose are marginalised (UN Women 2020).

This duality underscores that social media is not a neutral space of empowerment; it is a contested terrain, where women constantly navigate between opportunity and vulnerability in their pursuit of recognition and agency. Recognising these layered realities helps illustrate that empowerment in digital contexts extends beyond access to technology; it involves the ability to use it meaningfully and safely, in ways that challenge rather than reproduce existing hierarchies. The evolution of scholarship mirrors the transformation of feminist practice from localised struggles to globally networked movements. Empowerment in the twenty-first century is dynamic, intersectional, and continually negotiated. Social media has broadened opportunities for women's participation but has also reflected enduring inequalities. Recognising this complexity is crucial for conceptualising digital empowerment as a continuous process shaped by the intersection of technology, culture, and social structures,

ISSN 2283-7949
GLOCALISM: JOURNAL OF CULTURE, POLITICS AND INNOVATION
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which collectively influence women's opportunities for voice, visibility, and autonomy.

RESEARCH LIMITATION

Despite its efforts to achieve the desired outcomes, this study is not without limitations. First, it relied solely on the Scopus database, whereas incorporating other sources, such as Web of Science or Google Scholar, could have provided a more comprehensive picture by including additional studies in this area. Second, although the keyword search strategy focused on social media, women's empowerment, and popular platforms like Facebook, Instagram, YouTube, LinkedIn, and Twitter, the results may have been influenced by the inclusion or exclusion of specific terms, especially those less significant to the research focus. The selected time frame was designed to capture the rise of social media platforms; however, this may not fully reflect the earlier historical development of the concept of women's empowerment. Similarly, the study concentrated only on the social sciences domain, which, while offering valuable subject-specific insights, may have excluded relevant contributions from other fields. Finally, the analysis was limited to English-language publications, meaning research conducted and published in different languages may have been overlooked.

CONCLUSIONS

This study argues that social media is both a catalyst for and a reflection of structural shifts in women's empowerment, and maps how global scholarship has responded to this phenomenon. Using bibliometric analysis with VOSviewer on 684 Scopus-indexed publications from 1994 to 2024, it identifies the intellectual, geographical, and thematic patterns driving the expansion of this field. Beyond tracking authorship, institutions, and keywords, the findings reveal broader sociological dynamics of knowledge production and diffusion across regions. The dominance of countries such as the United States and the United

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Kingdom reflects not only their advanced academic infrastructures and research funding but also their sociopolitical contexts, where feminist debates and digital activism have historically been strong. Movements such as #MeToo, which originated in these contexts and later spread globally through social media, have amplified both public and scholarly engagement with women's empowerment in digital spaces. This trend aligns with agenda-setting theory, which posits that public discourse has a significant influence on academic inquiry. Meanwhile, the steady growth of contributions from developing nations signals a significant shift toward localising global conversations, where empowerment is being redefined to address region-specific challenges, cultural values, and structural inequalities. The recurring presence of keywords such as youth, media literacy, social justice, and digital literacy indicates that empowerment is now understood as a multi-layered process shaped by technology, identity, and social context. These themes reflect how academic work mirrors lived realities, from online harassment and digital exclusion to the politicisation of women's voices within virtual communities. Patterns of collaboration among authors and institutions also show an increasingly globalised research network. However, power imbalances persist, with Anglophone nations continuing to dominate the field. Taken together, the findings reveal that research on social media and women's empowerment is both a reflection of and a response to broader social transformation. As digital spaces continue to evolve, they are becoming contested yet empowering arenas where women negotiate visibility, agency, and participation. To ensure equitable inclusion in this digital era, policymakers must adopt a multidimensional strategy that integrates infrastructure development with education, regulation, and social awareness. Gender-sensitive digital policies should guarantee women's representation in ICT and innovation frameworks. Education and training initiatives should focus on digital literacy for women in marginalised and rural communities, emphasising critical skills such as online safety, entrepreneurship, and information verification. Collaborative partnerships between academia, NGOs, and technology companies can further enhance these efforts by creating safer, more inclusive online environments that address algorithmic

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GLOCALISM: JOURNAL OF CULTURE, POLITICS AND INNOVATION
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bias and cyber harassment. Through such coordinated actions, digital participation can shift from being a privilege to a right, enabling women across all backgrounds to harness technology as a transformative tool for empowerment and social change. Overall, this study contributes to a growing body of knowledge that views social media as both a site of empowerment and a mirror of inequality. By revealing the intellectual and geographical contours of this evolving field, it underscores the importance of context, access, and agency in understanding digital empowerment. A future-oriented, intersectional, and globally inclusive approach will be essential for ensuring that the opportunities of the digital era are equitably shared among all women, regardless of their geography, socioeconomic status, caste, or cultural background. This work thus provides both a solid foundation and a roadmap for future scholarship, advocacy, and policymaking aimed at creating a more inclusive and gender-just digital world.

FUTURE RESEARCH DIRECTIONS

Building on the bibliometric findings, future research could expand in several key directions: *a)* methodological expansion, incorporating qualitative methods, such as interviews, ethnographies, or case studies, can help uncover the lived realities behind bibliometric patterns; *b)* language and cultural inclusion, examining non-English publications and local-language platforms would make the global discourse more inclusive and representative; *c)* comparative global studies, cross-regional analyses between the global North and South able to uncover how disparities in access, infrastructure, and representation shape women's digital empowerment; *d)* intersectional inquiry, exploring how gender intersects with class, caste, ethnicity, and geography to produce differentiated digital experiences; *e)* impact evaluation: assessing how digital participation translates into tangible social and economic outcomes can help policymakers and organisations design more effective empowerment programs.

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