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Application of Social Media in Library and Information Science Area: A Bibliometric Study

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Abstract: The report shows the 17-year growth of social media research in library and information science. The goal of the study was to determine the annual growth rate in the field of social media research, the most prominent writers in the field of social media research, and the highest keywords picked by prominent authors when publishing their publications. The Scopus database was utilized to retrieve the raw data of the chosen field of research from 2006-October-4 to 2022. Vosviewer and Biblioshiny were utilized in order to do an analysis on the raw data. Research on social media in relation to library and information science emerged for the first time in the year 2006, and it has progressively increased over the years, reaching its maximum annual growth rate of 400% in 2007. It was discovered that the number of citations does not proportionally increase with the number of publications, and Library Philosophy and Practice was the publication with the largest number of citations overall. The United States of America had the largest total number of publications in the subject of study that was chosen, with India coming in second and the United Kingdom taking the third spot.

Keywords: Social-media in library; SNS in library; social media research; Relative growth rate; Doubling time.

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1. Introduction

The ever-evolving era of the internet and technology has resulted in the rise of social media and social networking sites as powerful tools for managing the flow of information in a variety of different industries. The use of the instruments provided by social media platforms within the library and information center is still in its infant stages. Numerous studies have been conducted to evaluate the influence of social media on the field of library and information science, but in comparison to other fields of study, social media is still lagging behind. The use of social media technologies into library activities and library services has the potential to significantly boost the effectiveness of the library's overall operation. Research on social media led to a growth in both knowledge of social media and its application in the field of library and information science (Sahu & Naik, 2019). In today's world, social media platforms are utilized to connect with other individuals, engage in conversations with others regardless of physical location, and exchange information. The usage of social media makes things simpler to operate, makes it easier to interact with others and exchange information, and speeds up the process of receiving information from one location to another (Anwar & Zhiwei, 2019). Therefore, insofar as libraries and information centers are concerned, the utilization of social media platforms has the potential to significantly improve the activities of libraries and information centers. Therefore, increasing the amount of research done on social media in relation to libraries and information centers would likely result in an increase in the use and use of social media inside such institutions.

2. Literature review

During the course of their research, Islam and Habiba (2015) came to the conclusion that social media is an important instrument for marketing library services and merchandise. It broadens a library's or information centre’s capacity to serve customers in accordance with the requirements of such users.

Access to library services and resources can also be facilitated with the help of students, staff, researchers, and other library professionals thanks to social media. In addition, the author came to the conclusion that social media platforms such as Facebook, LinkedIn, and RSS are utilised to a significant extent in information and library centres. Specifically referring to books found in academic libraries A'dillah (2016) found that Facebook and Twitter have a substantial effect on library promotional operations. This is due to the fact that these platforms aid in reaching customers faster than other promotional strategies. The author found that the vast majority of students preferred using social networking sites like Facebook and Twitter to obtain information. According to the findings of a bibliometric study on social media research conducted by Leung (2017), which made special reference to hospitality and tourism publications, a total of 406 articles related to social media research were retrieved. Through the use of co-citation analysis, the author was able to determine that Word-of-Mouth is the most important theoretical basis for social media research that is related to business. By putting more of an emphasis on the drawbacks of social networking sites According to Prabhakar (2017), some of the most significant issues regarding the utilisation of social networking sites include a lack of knowledge on how to use them, a lack of privacy and security, a lack of time to utilise social networking sites, and a lack of time to utilise social networking sites. On the other hand, the use of social networking websites in the context of libraries and other information centres has a number of potential benefits, some of which include the ability to market library services more effectively, increase library usage, and reach a greater number of potential library users. Ansari (2015) gave a presentation at a conference on the relevance of social networking sites and the usage of those sites within the context of libraries and other information centres. The author emphasised the settings and contexts in which social networking sites may be used most properly, as well as the many application domains in which social networking sites may be utilised. A study on the influence of social media on disaster preparation and response was carried out by Houston et al. (2015). This study focused on the usage of

social media. According to the findings of Author, social media is an excellent instrument for rapidly disseminating a wide variety of information to its users, especially when compared to other information distribution channels.

3. Objectives of the study

The study aims to accomplish the following major objectives.

- To measure the chronological development of social media research with respect to library and information science.
- To find out co-authorship pattern as per countries and author.
- To find out the top 10 prolific authors and sources.
- To identify the most trending topic in the research area.
- To find out most bibliographically coupled journals.
- To categories the journals as per zone by using Bradfords law.

4. Methodology

The starting year for this analysis's data was determined to be 2006 after scraping Scopus on October 4, 2022. Scopus is the largest citation indexing database, with most of its content coming from the fields of science, technology, and the social sciences (Schotten et al., 2017). The author employed a combination of phrase search, truncation, and Boolean search techniques to get the pages of social media research in the LIS field. Papers with both terms in the title, abstract, or keyword section were retrieved by the system. Only research papers and conference papers will be included in the final selection, since this will further ensure that only documents relating to research will be included. It looks like this is the right search string,

TITLE-ABS-KEY (“Libra* AND “Social Media”) AND (LIMIT-TO (DOCTYPE, “ar”) OR LIMIT-TO (DOCTYPE, “cp”))

Summary statistics and other key data are included in Table 1. It reveals that from 2006 and 04-10-2022, a total of 1674 documents were retrieved. Total article counts were 1230, with 434 being presented at conferences. The

Vosviewer program was used for clustering and network visualization, while Biblioshiny was utilized to create the 3D plot and word cloud figure. Some statistical analysis was performed in MS-Excel.

Table 1. Main information of raw data

Section	Sub-section	Value
Overview	Sources (Journals, Books, etc)	613
	Documents	1674
	Annual Growth Rate %	38.58
	Document Average Age	4.29
	Average citations per doc	7.729
	References	50351
Document contents	Keywords Plus (ID)	4720
	Author's Keywords (DE)	4071
Author details	Authors	4086
	Authors of single-authored docs	367
Authors Collaboration	Single-authored docs	402
	Co-Authors per Doc	2.86
	International co-authorships %	14.64
Document type	Article	1230
	Conference paper	434

5. Analysis and Result

5.1 Publication growth and citation impact over the past year

Over the past sixteen years, Table 2 depicts the rise of literature in the field of social media as it relates to library and information science. It was determined that the first publication appeared in 2006 with one document and an average of five citations per article. In the top spot, 2021 had the greatest number of publications (249) with a mean TC per article of 2.56 and a mean TC per year of 2.56. This represents 14.9% of the total number of publications. 2020 saw the release of 208 (12.5%) documents with a mean TC per article of 6.45 and a

mean TC per year of 3.23, followed by 2022 with 186 (11.1%) publications, and so on.

Table 2. Publication growth and citation impact over the past year

Rank	Year	TP	% TP	Mean TC per article	Mean TC per year	Citable years
1	2021	249	14.9	2.56	2.56	1
2	2020	208	12.5	6.45	3.23	2
3	2019	185	11.1	4.93	1.64	3
4	2022	186	11.1	0.56	0	0
5	2018	162	9.7	6.98	1.75	4
6	2017	123	7.4	13.26	2.65	5
7	2015	121	7.2	11.4	1.63	7
8	2013	108	6.5	14.21	1.58	9
9	2016	107	6.4	13.88	2.31	6
10	2014	72	4.3	13.26	1.66	8
11	2012	68	4.1	11.9	1.19	10
12	2011	39	2.3	13	1.18	11
13	2010	27	1.6	10.81	0.9	12
14	2009	6	0.4	15.83	1.22	13
15	2007	5	0.3	12.2	0.81	15
16	2008	3	0.2	3	0.21	14
17	2006	1	0.1	5	0.31	16

TP= Total publication, TC= Total citation

5.2 Annual Growth Rate (AGR)

The growth rate of literature published in social media under the umbrella of library and information science is shown in Table 3. 2007 had the highest yearly growth rate of 400, followed by 2010 with a growth rate of 350 and 2009 with a growth rate of 100. In the years 2008 and 2014, negative growth rates of -40 and -33.3 respectively were observed.

Using the formula provided by Kaliyaperumal (2015), the annual growth rate of publications was calculated as follows:

AGR

Table 3. Annual growth rate of publication

Year	TP	AGR
2006	1	0
2007	5	400.0
2008	3	-40.0
2009	6	100.0
2010	27	350.0
2011	39	44.4
2012	68	74.4
2013	108	58.8
2014	72	-33.3
2015	121	68.1
2016	107	-11.6
2017	123	15.0
2018	162	31.7
2019	185	14.2
2020	208	12.4
2021	249	19.7
2022	185	-25.7

5.3 Relative Growth Rate (RGR) and Doubling Time (DT) of publications

The formula given by Mohapatra (1985) has used to calculate the Relative Growth Rate (RGR) of literature published in social media with respect to library and information science during the 16 years.

$$RGR = \frac{W2 - W1}{T2 - T1}$$

Where,

RGR = Relative Growth Rate

W1 = log of initial contribution

W2 = log of final contribution

T1 = initial time

T2 = final time

Over the past 16 years, Table 4 displays the relative growth rate and doubling time of social media-related library and information science literature. According to the table, the relative growth of rate was greatest in 2007 (1.79), followed by 1.03 in 2010, 0.65 in 2011, and so on. In contrast, the doubling time was greatest (5.77) in 2022, followed by 3.85 in 2021, 3.65 in 2020, and so forth. Figure 1 depicts a diagrammatical perspective of both relative growth rate and doubling time.

The doubling time has been calculated by using the formula,

$$DT = \frac{0.693}{R}$$

Where,

DT = Doubling Time

R = Relative growth rate

0.693 is constant

Table 4. Relative growth rate and doubling time of literature

Year	Publication frequency	Cumulative frequency	W1	W2	RGR	DT
2006	1	1	--	0.00	0	0
2007	5	6	0.00	1.79	1.79	0.39
2008	3	9	1.79	2.20	0.41	1.69
2009	6	15	2.20	2.71	0.51	1.36
2010	27	42	2.71	3.74	1.03	0.67
2011	39	81	3.74	4.39	0.65	1.07
2012	68	149	4.39	5.00	0.61	1.14

2013	108	257	5.00	5.55	0.55	1.26
2014	72	329	5.55	5.80	0.25	2.77
2015	121	450	5.80	6.11	0.31	2.24
2016	107	557	6.11	6.32	0.21	3.30
2017	123	680	6.32	6.52	0.2	3.47
2018	162	842	6.52	6.74	0.22	3.15
2019	185	1027	6.74	6.93	0.19	3.65
2020	208	1235	6.93	7.12	0.19	3.65
2021	249	1484	7.12	7.30	0.18	3.85
2022	185	1669	7.30	7.42	0.12	5.77

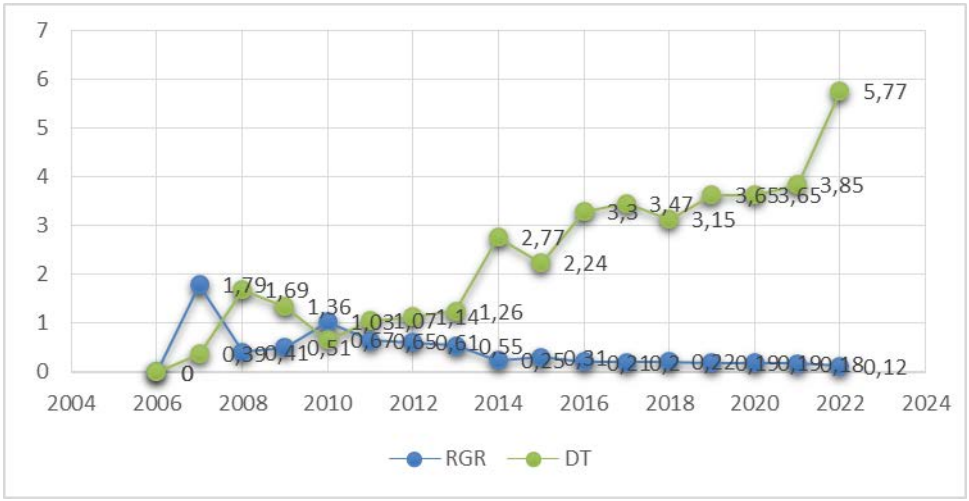


Figure 1. Relative growth rate and doubling time

5.4 Top 10 relevant sources

The top ten journals in social media research within the field of library and information science are listed according to their total number of publications in Table 5. The Journal named Library Philosophy and Practice had the maximum number of 134 (8 percent) publications with a total of 174 citations, placing it in first place. In second place is Lecture Notes in Computer Science with 62 (3.70%) publications and 370 total citations, followed by Proceedings of the

ACM/IEEE Joint Conference on Digital Libraries with 48 publications and 284 total citations, etc. It was discovered that the quantity of publications does not affect the quality of the publication, as journals such as Journal of Academic Librarianship published just 33 pieces of literature and received 610 total citations with the highest h-index of 15. These top ten journals contributed 24.67 percent of all social media research publications.

Table 5. Top 10 relevant journals as per total publication

Rank	Journal	TP	% TP	TC	H-index	G-index	M-index
1	Library Philosophy and Practice	134	8.00	174	5	9	0.45
2	Lecture Notes in Computer Science	62	3.70	370	10	16	0.62
3	Proceedings of the ACM/IEEE Joint Conference on Digital Libraries	48	2.87	284	11	15	0.92
4	Journal of Academic Librarianship	33	1.97	610	15	24	1.5
5	Journal of Web Librarianship	26	1.55	177	8	12	1.5
6	Library Hi Tech	26	1.55	441	12	20	0.92
7	Evidence Based Library and Information Practice	22	1.31	28	3	4	0.3
8	Library Hi Tech News	22	1.31	105	5	9	0.38
9	CEUR Workshop Proceedings	21	1.25	30	3	4	0.3
10	BMJ Open	19	1.14	59	4	7	0.5
Total		413	24.67	2278	76	120	7.39

5.5 Bibliography coupling between sources

Figure 2 depicts the bibliographically coupled sources as a network. According to Boyack (2010), bibliographic coupling happens when two works reference a third word, at which time they are considered bibliographically coupled and the strength of their relationship may be determined. During the preparation of the network visualization, the minimum number of documents for a source was set at 5, and only 70 out of 608 sources fit the criterion. Again, part of the network's 70 sources were not connected to one another; the greatest set of connected

sources, as shown in figure 1, consists of 68 sources. The entirety of the analysis was divided into five clusters, with each cluster containing a variety of circles representing each source. The size of the circle is proportional to the time of bibliographic coupling, and the lines between the circles indicate their relationships.

The first cluster (red) is comprised of 25 bibliographically related sources, including ACM International Conference Proceeding Series, Advances in Intelligent Systems and Computing, ASLIB Journal of Information Management, CEUR Workshop Proceedings, Communications in Computer and Information Science, Global Knowledge, Memory and Communication, Journal of Documentation, etc. The second cluster (green) includes eighteen sources, including Art Documentation, College and Undergraduate Libraries, Digital Library Perspectives, Emerald Emerging Markets Case Studies, IFLA Journal, Information Technology and Libraries, etc. The third cluster (blue) has eleven sources, including Electronic Library, Information and Learning Science, Information Development, Malaysian Journal of Library and Information Science, Preservation, and Digital Technology and Culture, among others. The cluster four (yellow) has eleven items, including DESIDOC Journal of Library and Information Technology, Journal of Librarianship and Information Science, Library Hi Tech News, Library Philosophy and Practice, and Library Review, among others. The fifth cluster (violet) consists of three sources: Library Quarterly, Online Information Review, and Serials Librarian.

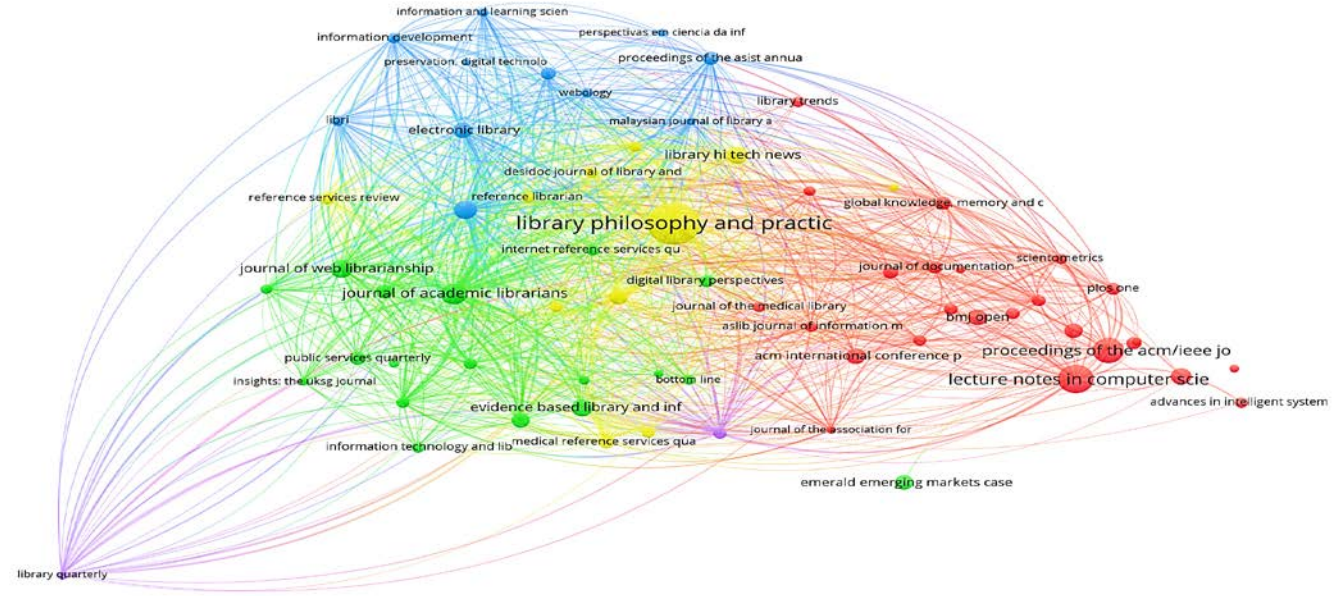


Figure 2. Bibliographic coupling of sources

5.6 Top 10 prolific authors

Table 6 lists the ten most productive social media researchers in the library and information science discipline. Author Abrizah A. holds the top spot in the field of social media, with 9 publications, 187 total citations, and an h-index of 7. In second place was Alhoori H, who produced nine publications with a total citation count of fifty-one and an h-index of four. In third place, an author named Chen Y wrote nine works with 73 total citations and an h-index of 4. It was also discovered that authors who submitted fewer publications received more citations than those who provided more.

Table 6. Top 10 prolific authors in the area of social media

Rank	Author	h-index	g-index	m-index	TC	TP	PY Start
1	Abrizah A	7	9	0.7	187	9	2013
2	Alhoori H	4	7	0.4	51	9	2013

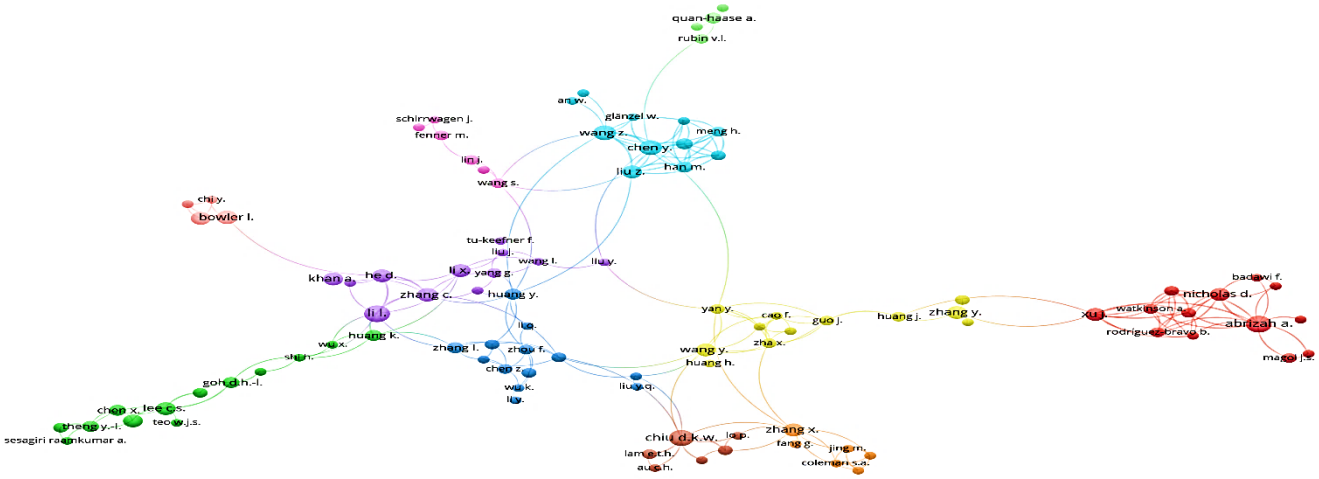
3	Chen Y	4	8	0.308	73	9	2010
4	Li L	3	5	0.429	35	9	2016
5	Chiu Dkw	7	8	0.875	157	8	2015
6	Bhatti R	4	7	0.364	221	7	2012
7	Nelson Ml	3	7	0.273	58	7	2012
8	Wang Z	2	4	0.25	19	7	2015
9	Al-Daihani Sm	6	6	0.75	107	6	2015
10	Bowler L	4	6	0.308	47	6	2010

5.7 Author collaboration network

The author's co-authorship network is depicted in Figure 3. At the time this network was built, the minimum number of documents an author needed to have been set at 2, and 436 out of a total of 4038 authors met this threshold. Once again, several of the 436 authors had no prior association. Figure 1 displays the 100-item greatest collection of associated authors. Eleven clusters with a total link strength of 382 were used to organize the entire analysis. Each author is represented as a circle within their respective cluster; the size of the circle is proportional to the number of publications on which both authors have collaborated. The arrows connecting the various circles in this graphic are meant to symbolize the author's relationships with other people. Abrizah A., Aspura M.K.Y.I., Badawi F., Herman E., Jamali H.R., Magoi J.S., etc. are among the 13 authors who make up the first cluster (shown in red). In cluster two (green), thirteen writers including Chen X., Chua A.Y.K., Erdt M., Goh D.H., Huang K., Lee C.S., etc. are represented. Thirteen authors, including Chen Z., Cheng Y., Huang Y., Li Q., Li Y., Liu Y.Q., etc., make up cluster three (deep blue). Cluster 4 (yellow) includes 12 authors, including Cao F., Guo J., Huang H., Huang J., Liu K., Wang Y., and others. Twelve different writers make up cluster five (violet): Du J.T., He D., Khan A., Li L., Li X., Liu J., Liu S., and so on. Eleven different writers, including An W., Chen Y., Glänzel W., Han M., Jin

M., Liu Z., Meng H., etc., are all part of cluster six (shallow blue). S.A. Coleman, G. Fang, M. Jing, M.T. Mcginnity, et al. are just a few of the authors who make up the orange-colored cluster seven. Cluster 8 (brown) has six authors, including Au C.H., Chiu D.K.W., Ho K.K.W., Lam A.H.C., and others. There are six authors in cluster nine (pink), including Michael Fenner, Nathaniel Jahn, Jonathan Lin, John Schirrwagen, and others. There are a total of four authors that make up the tenth cluster (light pink), and their names are Acker A., Bowler L., Chi Y., and Jeng W. Authors Burkell J., Collins G., Quan-Haase A., and Rubin V.L. make up the eleventh cluster (light green).

Figure 3. Author co-authorship network



5.8 The most pertinent affiliations

Figure 4 illustrates the most fruitful affiliation in social media study. It was discovered that Nayang Technological University produced a total of 50 works in the field of social media to the discipline of library and information science. Second, the University of Pittsburgh provided 31 publications to the chosen research field, followed by the University of Malaya with 29 publications, Wuhan University with 23 publications, and so on.

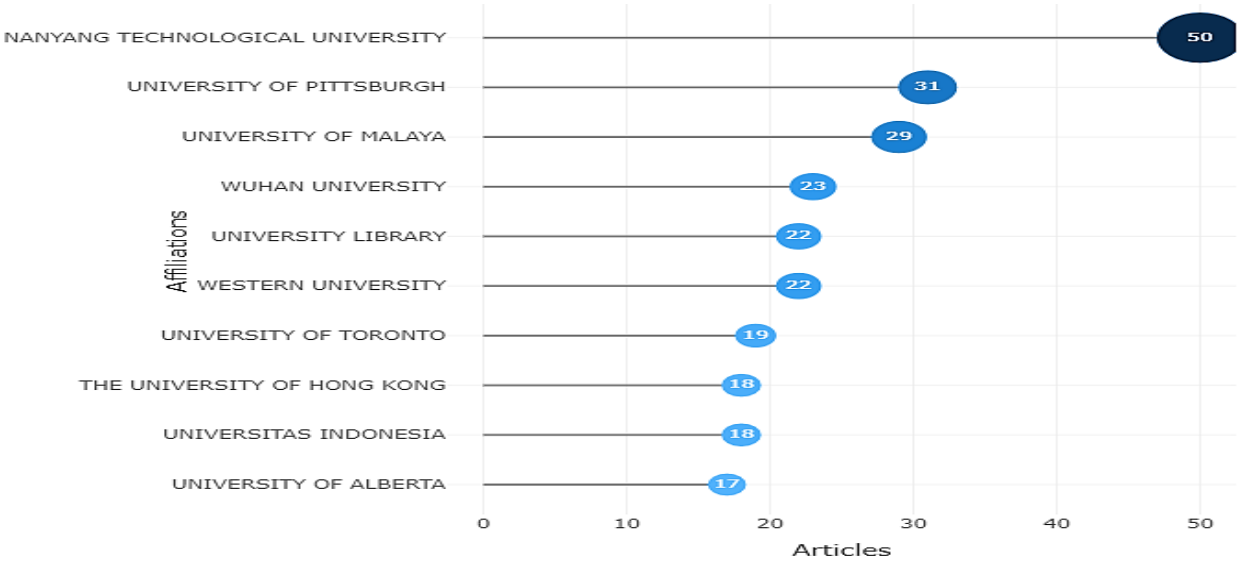


Figure 4. The most pertinent affiliations

5.9 Top 10 most productive countries

Table 7 illustrates the most productive nations in the area of study chosen. The SCP and MCP were calculated by using Biblioshiny software in order to distinguish between documents written by authors from their own nation and those written by foreign authors. It was discovered that the United States provided 308 literatures in the field of social media research with a total citation count of 2,890, placing it in first place. The United States had 284 single country/intra country publications and 25 multi country/inter country publications. India occupied the second position with 62 total articles and 191 total citations. India's SCP and MCP were 58 and 4, respectively. The United Kingdom ranked third with 55 total publications and 710 total citations. The UK's SCP was 43 and its MCP was 12, respectively.

Table 7. Top 10 countries performance in the area of social media

Rank	Country	TP	TC	Average citation per article	SCP	MCP	Frequency	MCP ratio

1	USA	308	2890	9.38	284	24	0.184	0.078
2	India	62	191	3.08	58	4	0.037	0.065
3	UK	55	710	12.91	43	12	0.033	0.218
4	Canada	51	500	9.8	35	16	0.031	0.314
5	China	49	477	9.73	33	16	0.029	0.327
6	Nigeria	44	132	3	41	3	0.026	0.068
7	Australia	28	450	16.07	20	8	0.017	0.286
8	Spain	26	189	7.27	23	3	0.016	0.115
9	Indonesia	22	49	2.23	21	1	0.013	0.045
10	Singapore	22	140	6.36	19	3	0.013	0.136

SCP= Single Country Publications, MCP= Multiple Country Publications.

5.10 Relation of authors with regards to countries and affiliations

The relationship between authors, nations, and affiliations is depicted in Figure 5 using a three-field plot. This graph was created with Biblioshiny, a program that operates in the R environment. The three-field plot illustrates the relationship between objects, which may include source, title, reference, author, and nations, among others. Here, the analysis was conducted utilizing author, country, and affiliations as the three objects. The entire analysis has been separated into three fields or sections. The area on the left represents the author's

nation, the section in the middle represents the author's name, and the section on the right shows the author's affiliation. The width of the line between the items determines the linking strength, and the size of the rectangular box is proportional to the number of publications. The bulk of authors are touched by the line originating from the United States, indicating cooperation with American authors such as Ahori H., Naeem SB., Acker A., etc. According to the width of the curved line, He D supplied numerous documents in both the United States and China. The majority of records from the University of Pittsburgh were supplied by Abrizah A.

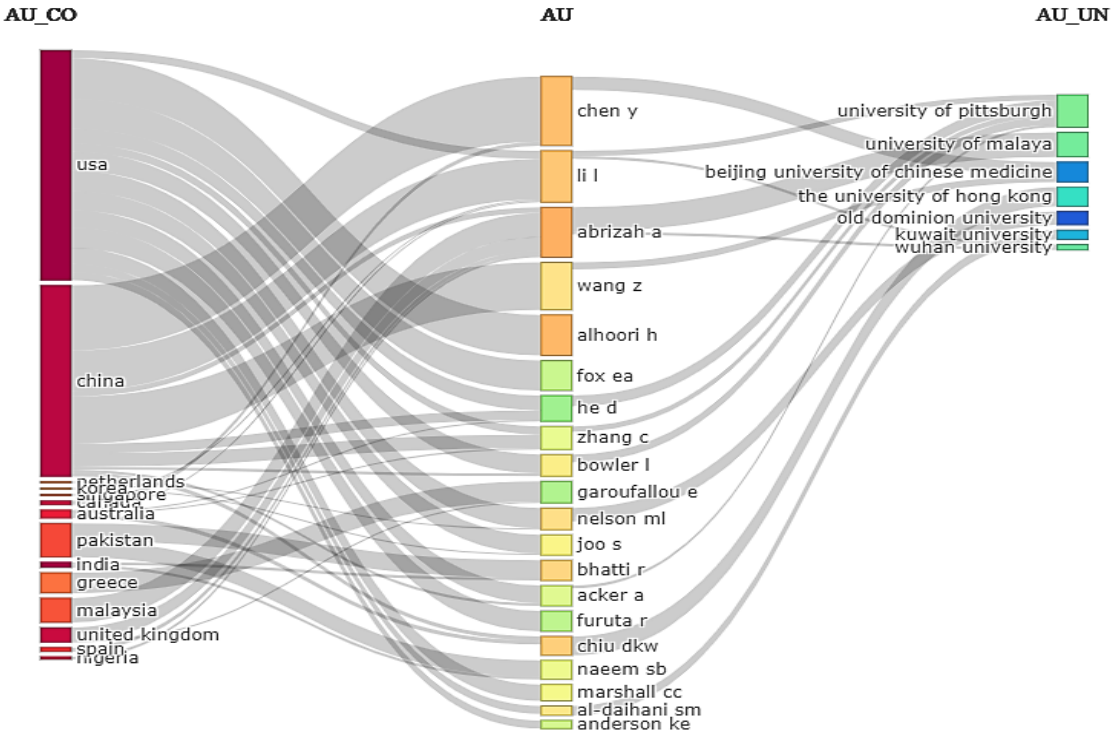


Figure 5. Three-field plot showing countries, authors and affiliation

5.11 Impact of top 10 papers

Table 8 illustrates the top ten works in the field of social media within the subject of library and information science. The list is organized according to the

number of local citations obtained by each publication. Del Bosque D.'s 2012 document received the highest number of local citations (35) and global citations (56) with a ratio of 62.5% falling under the top place. The second paper authored by Khan Sa in 2012 received 31 local citations and 73 global citations for a ratio of 42.47 percent, followed by Harrison A in 2017 with 26 TC and 50GC for a ratio of 52 percent, and so forth. The paper published by Harrison A in 2017 had the highest normalized local citation with a normalized global citation of 3.77, followed by the document produced by Young Swh in 2015 with a normalized Lc of 21.61 and a normalized GC of 4.20, and so on.

Table 8. Top 10 papers with local and global citation

Rank	Author-Year-Source in short form	DOI	LC	GC	LC/GC Ratio (%)	Normalized LC	Normalized GC
1	Del Bosque D, 2012, Ref Serv Rev	10.1108/00907321211228246	35	56	62.5	14	4.71
2	Khan Sa, 2012, Webology	NA	31	73	42.47	12.4	6.14
3	Harrison A, 2017, J Acad Librariansh	10.1016/j.acalib.2017.02.014	26	50	52	28.05	3.77
4	Young Swh, 2015, Inf Technol Libr	10.6017/ital.v34i1.5625	25	48	52.08	21.61	4.21
5	Luo L, 2013, Libr Hi Tech	10.1108/LHT-12-2012-0141	22	41	53.66	19.32	2.88
6	Xie I, 2014, Online Info Rev	10.1108/OIR-11-2013-0261	20	38	52.63	8.57	2.86
7	Palmer S, 2014, J Acad Librariansh	10.1016/j.acalib.2014.08.007	18	40	45	7.71	3.02
8	Jones Mj, 2019, J Librariansh Inf Sci	10.1177/0961000616668959	17	34	50	42.5	6.9
9	Stvilia B, 2014, Libr Inf Sci Res	10.1016/j.lisr.2014.07.001	17	33	51.52	7.29	2.49
10	Ezeani Cn, 2012, Libr Philos	NA	17	45	37.78	6.8	3.78

	Pract						

LC= Local Citation, GC= Global Citation

5.12 Most prominent keywords

Figure 5 depicts a tree map view of the most commonly used keyword in social media research in relation to library and information science. Biblioshiny software was used to form the tree map, and the rectangular boxes indicate each keyword and its occurrence frequency. The size of the rectangular box depends on the frequency with which the specified keyword appears. To create the graphic, the keywords were taken from the titles, abstracts, and keyword sections of each article. The data reveals that "Social Media" is the most frequent term, occurring 532 times and accounting for 17% of all keywords. In the second position, the keyword "Social Networking (online)" appears 311 times and accounts for 10 percent of all keywords, followed by the keyword "Human" which appears 199 times and accounts for 6 percent of all keywords.

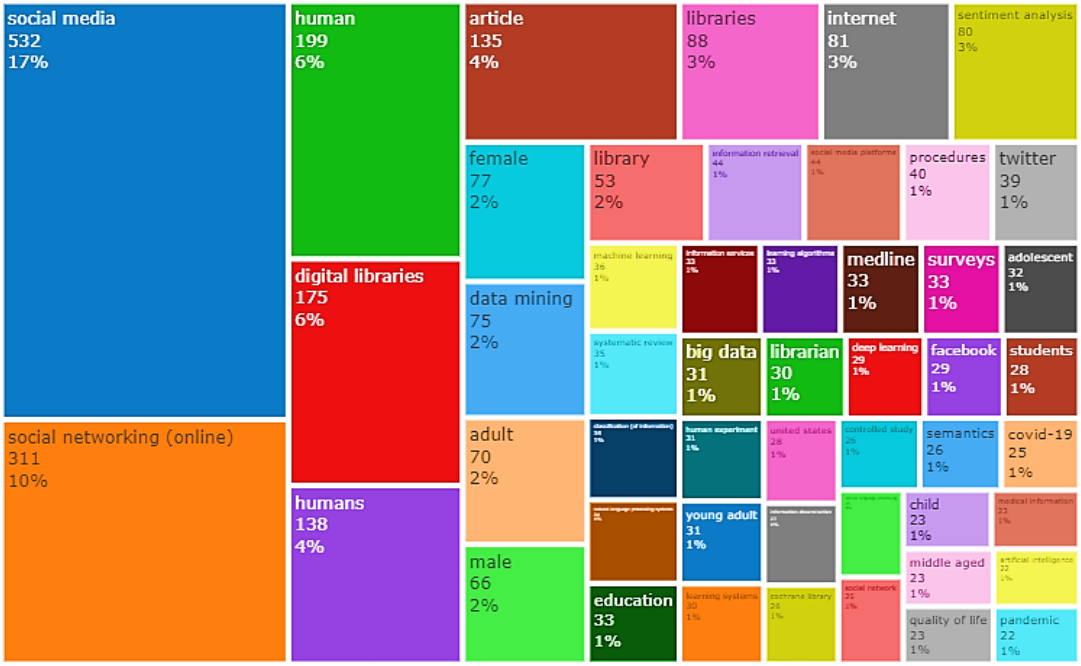


Figure 5. Tree map of prominent keywords

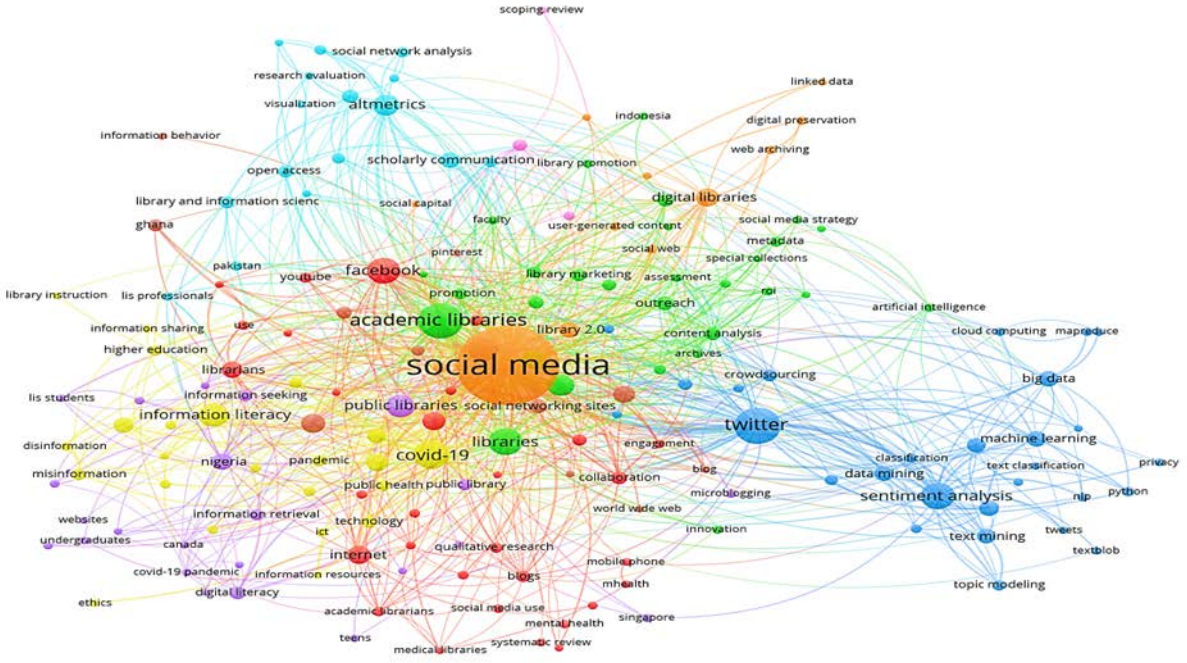
5.13 Co-occurrence of author keywords

Figure 7 depicts the co-occurrence of author-selected keywords in social media research literature within the library and information science discipline. According to Weismayer & Pezenka (2017)13, by studying the keywords of any particular research field, one may create a map of developing trends in that field. To improve comprehension, an author keyword analysis was conducted in which keywords were extracted from the keyword section of each document. The minimum number of keyword occurrences was set to 5, and out of 4037 keywords, 176 meet the requirement. The complete analysis has been sorted into ten clusters of various hues. Each circle represents a distinct keyword, and the size of the circle in each cluster is proportional to the keyword's co-occurrence frequency. The lines between each keyword indicate the relationship between each keyword.

The first cluster (red) is comprised of thirty keywords, including Academic Librarians, Awareness, Blogs, Collaboration, Digital Library, Engagement, Evaluation, Facebook, and Health Education, among others. The second cluster (green) includes 29 keywords, including Academic Libraries, Academic Library, Advocacy, Archives, Artificial Intelligence, Assessment, and Content Analysis, among others. The blue cluster contains 28 keywords, including Big Data, Classification, Cloud Computing, Crowdsourcing, Cultural Heritage, Data Mining, and Deep Learning, among others. The cluster number four (yellow) has 23 terms, including Communication, Coronavirus, Covid-19, Disinformation, Ethics Fake News, Health Information, etc. The cluster five (violet) has 23 terms, including Bangladesh, Canada, Covid-19 Pandemic, Digital Literacy, and India, among others. The cluster number six (pale blue) contains sixteen terms, including Altmetrics, Article-Level Metrics, Australia, Bibliometrics, Instagram, Library and Information Science, etc. The cluster seven (orange) has a total of twelve terms, including Digital Humanities, Digital

Libraries, Digital Preservation, Grounded Theory, Library 2.0, Library Users, etc. The cluster number eight (brown) has eleven terms, including Blog, Ghana, Information Behavior, Information Technology, Social Networking Sites, and Social Networks, among others. The cluster nine (pink) has three keywords: China, Scope Review, and Wechat. The cluster ten (light pink) has one Pinterest term.

Figure 7. Co-occurrence of author keywords



6. Conclusion

The objective of the research was to provide a numerical representation of the growth of the body of work devoted to the study of social media within the discipline of library and information science. This finding demonstrates that

research in this area is developing consistently at a pace of 38.58 percent every year, and there are hopeful signs of international collaboration among academics. During the period of 2006–2022, the relative growth rates pointed to a slowdown in research in the selected field, but the doubling time lengthened during this same time period. On the other hand, the quantity of research that is published by a journal or source is not indicative of its quality. The majority of sources published fewer documents but received the highest total number of citations, indicating that the quality of the source is not determined by the quantity of research that is published. There is a bibliographic connection between the sources, which provides evidence of their interconnection. It has been found that the total number of citations received by an author is not related to the number of documents the author has written. Authors who have produced fewer documents have earned a greater number of citations than those who have produced a greater number of documents. Within the field of library and information science, there is a growing trend toward increased collaboration among writers who are contributing to research on social media. The fact that a large number of scholars from a wide variety of countries and institutions have contributed to scholarly publications is evidence of the international cooperation of the authors. The United States of America made the greatest contribution to research out of all the countries, putting it in first place, with India coming in second place. In terms of the overall quality of the study, the United States ranks highest in terms of the number of citations it has got, followed by the United Kingdom, Canada, China, and so on. In contrast to the publication that was limited to a single country, the one that was limited to several countries includes a negative indicator. On the other hand, documents that have been published within the chosen areas are receiving a greater number of global citations in comparison to local citations. This indicates a rapid use of foreign documents when carrying out social media research within the library and information science discipline. In the realm of social media research carried out within the realm of library and information science, some of the most commonly occurring keywords include things like "Human," "Digital Library," "Data Mining," and

others. When it comes to producing research in the chosen field, authors typically favor terms such as "social networking" (online), "academic library," "social networking sites," and so on.

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