



Mapping the Landscape of Research Collaboration in Library and Information Science: A Bibliometric Review

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ABSTRACT

Purpose

Area of mapping in the landscape with research alliance in library and Information Science, there is the significant role of the research collaboration. From these perspectives, the major purpose of this paper is based on depth analysis of the metric evaluation of citation, publication, and documentation of research in LIS. Design and approach in the research work as focused as metric measuring about mapping in the landscape of research collaboration into LIS in varied since 1991 -2023 about citation, publication, and documentation of study materials of LIS. Research work focused on the metric evaluation of the research-based activities under the process of citation, publication, and documentation of mapping of landscape of study collaboration with LIS. Findings also give a base for developing an understanding of the depth of study in LIS.

Keywords: Library and Information Science, Bibliometrics, Research Collaboration.

INTRODUCTION

In the study of the landscape in research alliance in Library and Information Science (LIS), the meaning and concept of the mapping of the landscape can be defined as a way to ensure the phenomena of conducting research-based activities in LIS. Consequences as both LIS give a significant function in mapping the landscape in study collaboration (Janssens *et al.*, pp.1614-1642). In the aspect of the use of theories and methods in current research collaboration in library and information science, it gives phenomena to understanding a base for retrieving information in the view of technology-based in the study of LIS. These perspectives are associated with the nexus of mapping of landscape in the study of collaboration in LIS (Lapatovska & Arapakis, 2011, pp.575-592). Bibliometric analysis of research association in LIS in the middle east, there is significant importance and role in LIS in mapping in research collaboration (Siddique *et al.* 2023, pp.138-159). In the case of the research of description and brunt of grant-funded studying LIS, it is realized that Library and Information Science are associated with online digital platforms regarding providing

mapping of the landscape of research collaboration (Zhao, 2010, pp.293-306). In the case of the United States of America, it is recognized that there is significant importance in the mapping of the landscape of research tools in the area of LIS (Cyr & Smith, 2004). According to Sun *et al.* (2021), the role and function of LIS give significant importance in the area of mapping of research. The study of Syed *et al.* (2019) shows a realistic picture of the role of LIS in the context of globalization of research in the periphery of technology.

Ghazni (2012), offers a significant role in LIS in the mapping of research collaboration in both developed and developing countries. Additionally, the study also reveals that science and technology-based revolution is an important core in developing an understanding of the process, determinants, and consequences in the mapping of LIS. In these perspectives, the findings of Olmeda *et al.* (2017) shows that the process of mapping the landscape of research collaboration in Spanish information science literature gives a scientific-based approach to the analysis of Bibliometric analysis in the periphery of the research collaboration because it is well known that European literatures give space to the discussion concerning around the mapping in the landscape of research alliance in LIS. In a similar study conducted by Hicks *et al.* (2022), there is a need to give space to conduct a discussion about the mapping of the landscape of research collaboration in the perspective of retrospective to the prospective manner of the study design under the approach of the mapping of the research collaboration. According to Kim *et al.* (2020), Unified Medical Language System (UMLS)-based research collaboration is an important phenomenon in the mapping of the landscape of research alliance in LIS. Additionally, the study of Kim *et al.* represents a science-based approach with a discussion of tools of LIS in research collaboration. According to Subramanyam (1983), Bibliometric analysis gives a scientific-based approach to conducting research collaboration in LIS in India. Accordingly, study collaboration can be analyzed concerning the debate on the mapping of a research-based landscape. From this perspective, the study of Tanaka *et al.* (2019) shows that globalization gives an important role in the mapping of research in LIS. A study by Islam and Agarwal shows that the consequences of globalization should be measured in the context of research in LIS. The findings of Cosmos *et al.* (2020) show that role and function of LIS can give a direction to the mapping of research in LIS. Sieber (2006) shows that technology gives an important role in the mapping of LIS. In this perspective, science-based metric evaluation is an important part of the research of LIS according to a study by Naveed and Anwar (2022) in South Asia. A study by Mejia *et al.* (2021) shows that semantic analysis is an important part of research in bibliometric analysis in LIS.

Based on the above concise description of the study of the mapping of the landscape of research collaboration in LIS, it is summarised that the aspect of the mapping of the landscape is the result of the positive role of the research collaboration in retrieving research-based information with the help of research-based activities on the grassroots level according to the nature and research related problem in the consequences of globalization. In the perspective of globalization of mapping of landscape of research collaboration under the approach of investment of science and technology, it is realized that the process of mapping the landscape of research collaboration is based on the measuring of the number of citations and publications concerning the Bibliometric analysis. The bibliometric-based analysis is an important tool for the study of the research-based activities about mapping in the landscape in research collaboration in LIS. Therefore, the next section of the paragraph is based on the discussion of mapping the landscape of research

collaboration in Library and Information Science for developing an understanding of the review of the literature. Therefore, it is also realized that the entire above discussion provides a platform to develop an approach to the study of mapping the landscape of study as collaboration in LIS as the context of globalization.

Conceptual Framework

According to Velez *et al.* (2022), in the context of a research alliance, papers from global associations get more citations due to the high-level quality of a study in LIS across the globe. Wani and Ganie (2022) show that due to incessant proficient progress study as the creation of based knowledge with library and information science, these consequences pave the way for the availability of high-quality papers for citation in papers. The findings of the study of Sun and Yuan (2020) evaluated the essential science indicators database of published papers in LIS, it gives a base for analyzing the publication and metric of citations in research. A study by Kumar (2013) showed that open-access journals are an important source for the retrieval of information on processes, determinants, and consequences of mapping the landscape study collaboration in LIS. These perspectives give a base for conducting research-based activities in the study area of information and library science. Wani *et al.* (2023) suggested that there is a need to map research in LIS as the creation of a research domain. According to Liu *et al.* (2016), the geographical trend of research, publication, and citation of information-based study on a global level; Bibliometric analysis presented a significant picture of the phenomena of the global platform of LIS. Rafols (2020) offer that there is a need to conduct a research-based policy concerning the mapping of the landscape of study in collaboration with LIS. Additionally, findings research recommends that there is also need a for management concerning the measuring of citations and publications concerning the approach of the Bibliometric analysis. According to the study of Rorissa and Yuan (2012), the process of visualization and mapping of the landscape of study alliance LIS, the process of measuring quantitative metrics of citation and publication gives a direction to Bibliometric analysis in research-based activities. Additionally, both visualization and mapping are part of the process of functioning of Bibliometric analysis in mapping the landscape of research alliance in LIS. In a study by Otte & Rousseau (2002), the networking-based approach is an important tool concerning the mapping in the landscape of study collaboration in LIS. Apart, it gives a base as the collect basic information about mapping in landscape as a study collaboration in LIS. Similar research concerning the mapping of the study materials in the perspective of mapping of landscape of study alliance in LIS. Lamba & Madhushudhan (2019) give an approach-based study about developing an understanding of the mapping of the landscape of research collaboration under the perspective of Bibliometric analysis. It is also realized that the study covers a broad aspect of the phenomena-based study in the mapping of research collaboration. Dixon (2006) shows the process, determinants, and consequences of the mapping of the landscape of study alliance in LIS, there needed to the mapping of citations, and publications concerning LIS, under the approach of the Bibliometric analysis. Kansihka *et al.* (2021) show that there is a need to develop a sustainable approach in the study of mapping the landscape of research association in LIS in India because a sustainable-based approach is an important tool in the mapping of the e-library.

Based on the above concise description of the study of mapping the landscape of research collaboration in library and information, there are the following summary points regarding conducting a critical based analysis of the review of literature in the next section:

- i. The background is the study of the function with importance in LIS in the mapping of the landscape of research collaboration in India across the globe. From the perspective of India, there is a significant role and importance of the LIS in the creation of research-based domains in India. These consequences give research-based collaboration in the mapping of the landscape of research in India.
- ii. Mapping the landscape of research collaboration is based on promoting the use and implementation of information-based technology in retrieving resources from the library in the consequences of globalization.

REVIEW OF LITERATURE

Based on the above introduction and background of the study, the review of literature is categorized into sections including to conceptual framework and theoretical framework regarding developing an understanding of the mapping in the landscape in research alliance in LIS under Bibliometric analysis. Therefore, there are following steps are implemented in the review of the literature section:

- i. Searching review of the literature
- ii. Reviewing review of related literature
- iii. Developing a Theoretical Framework
- iv. Developing a Conceptual Framework

The above four sections, give a stepwise function in Bibliometric analysis in this review paper.

Theoretical framework

According to Sweeney *et al.* (2019), organizational theory has been an important phenomenon in the context of creating a space for the function of LIS in mapping in landscape in study collaboration as context in the globalization of LIS. The approach of Olechnika *et al.* (2019) presented organizational concepts and theories in the function of LIS. Additionally, as get a cordial association between organizational theory and LIS from the perspective of creating an environment in the research-based domain. The study of Whitworth (2020) explored there is a need to develop a methodological-based theory concerning the mapping in the landscape of research alliance in LIS. According to Miller (2005), the approach and method of measurement theory give an important role in the function of mapping of landscape of research-based domains in LIS. Chen (2017), science-based mapping in LIS, is a way of creating new knowledge in the study area of LIS as a consequence of the globalization in the mapping of the research domain. A similar study conducted by Urquhart (2010), shows that there is an important role of the organizational theory in LIS because mapping in the landscape in research collaboration is focused on as a systematic approach concerning the better function of resources of LIS. From a theoretical perspective, Lee & Butler's (2019), theory of local information landscapes organizes the mapping of the landscape of research collaboration under the approach of empirical investigation in the perspective of grounded theory. Therefore, Organizational theory better advocates the function of LIS. Above the theoretical framework, it is realized that the theoretical perspective gives a better approach to developing

an understanding of the process, determinates, and consequences of mapping the landscape of investigating collaboration in LIS from the perspective of grounded theory. Additionally, it is also better to advocate that there is a lack of theoretical implication in the mapping of resources in LIS from the perspective of India. These consequences generate hurdles in the process of compiling resources related to mapping the study collaboration in LIS in India.

Conceptual Framework

The findings of the study of Costello *et al.* (2013), showed that there is a need to develop an understanding of the innovation-based information system in library and information science for mapping of landscape in research collaboration. Bystorm and Hansen (2005) also presented a metric of the role and function of the research-based function in the LIS in both developed and developing countries. Additionally, the nexus of information and library science gives a base for enhancing the mapping of the landscape of research collaboration. Hicks *et al.* (2022) suggested that there was a positive influence of LIS on the appropriation of information literacy in other disciplinary landscapes. These consequences created a cordial nexus between LIS under the Bibliometric approach in research mapping. A study by Bojrneborn and Ingwersen (2004), showed that the use and implementation of advanced information technology were enhancing the webometrics for better enhancement in the function of research collaboration. Based on the findings of the study conducted by Saha & Ghosh (2023) under primary field survey, major problems are opened about the lack of accurate conceptual information about the mapping of the study collaboration in LIS in India. Apart, findings also suggest conducting an empirical-based survey concerning the LIS. The analytical research of Basak and Roy (2023) gives an analysis-based approach in the mapping of the landscape of research collaboration in India because there is a lack of such kinds of empirical-based research about the role and function of LIS. Asubiaro & Badmus (2020), show that there is a need to conduct a study about the broad classification of resources of LIS in India because there may significant role in the mapping of the study collaboration in LIS in the conceptual framework. A recent study conducted by Sahoo et al (2021) shows that there is an important role in the process of visualization of the mapping of the landscape of research collaboration during the pandemic of COVID-19 as well as post scenarios conditions of COVID-19. Further, findings also suggest accessing resources from e-libraries in post-COVID-19 pandemic phenomena.

Based on a critical review of the conceptual framework for the mapping of the landscape of research collaboration, it is realized that the conceptual framework gives an approach for developing a base for the depth analysis under the horizontal and vertical axis under Bibliometric analysis.

Based on the above concise critical review of literature, there are the following arguments concerning the above topic:

- i. Firstly, it is realized that the selected review of literature gives an approach for developing an understanding of the mapping of landscape in research collaboration in LIS, but the literatures are silent in studying as role and function of mapping of the research-based domain in LIS in India.
- ii. Secondly, needed for a methodological approach for the depth study of Bibliometric analysis about the mapping in the landscape of research collaboration in LIS concerning the current debate.

- iii. Thirdly, it is also realized that there is a need to develop a proper mechanism for enhancing the conceptual framework for the mapping of landscape research collaboration in LIS under methodology in Bibliometric analysis in India.
- iv. Finally, it is summarised, there is the availability of enough resources in the Western world about the mapping in the landscape of research alliance in LIS compared to the lack of such kinds of research works in India in the consequences of globalization in the twenty-first century. Therefore, it is needed to conduct a study about related concepts under Bibliometric analysis.

Based on the above critical analysis of the conceptual and theoretical framework of the related literature, a major gap in the review of literature is existing around little information about the mapping in the landscape of research alliance in LIS from an Indian perspective. Therefore, it is realized that the major statement of the research problem is based on trying to give an answer about unfolding facts about the research domain in LIS under bibliometric analysis from an Indian viewpoint and the entire process of the Bibliometric analysis covers these disciplines by publication and citation in the data range from 1991 to 2023.

Unanswering Problem

Focused asexisting gap between the re-examine of the literature and the statement of the research problem, there are two problems:

- i. What are the consequences of publication and citation of mapping of the landscape of research alliance in LIS?
- ii. How should citation and publication manage the research-based domain with publication and citation in research work concerning the LIS?

Objectives of The Study

Based on the above research questions, there are the following objectives:

- i. To recognize the most productive sources with authors in study work, in the mapping of landscape of study collaboration in LIS.
- ii. To analyze the trend of the publication, citation about the research work.
- iii. To carry out an in-depth analysis to represent it in a summarized form.
- iv. To recommend policies for future research direction in the mapping of the landscape of research collaboration in LIS.

ANALYTICAL FRAMEWORK

In total, three fields from each record were searched by Scopus (1) the Author's name, (2) the Journal Name in which the article was recorded, (3) Total citations. The analytical framework of the Bibliometric analysis represents a phenomenal and multidimensional approach in the process of metric analysis of citation, publication, and documentation concerning the study of LIS. It is used AVOS viewer graph for a better representation of the citation and publication in the matrix (Van Eck & Waltman, 2010).

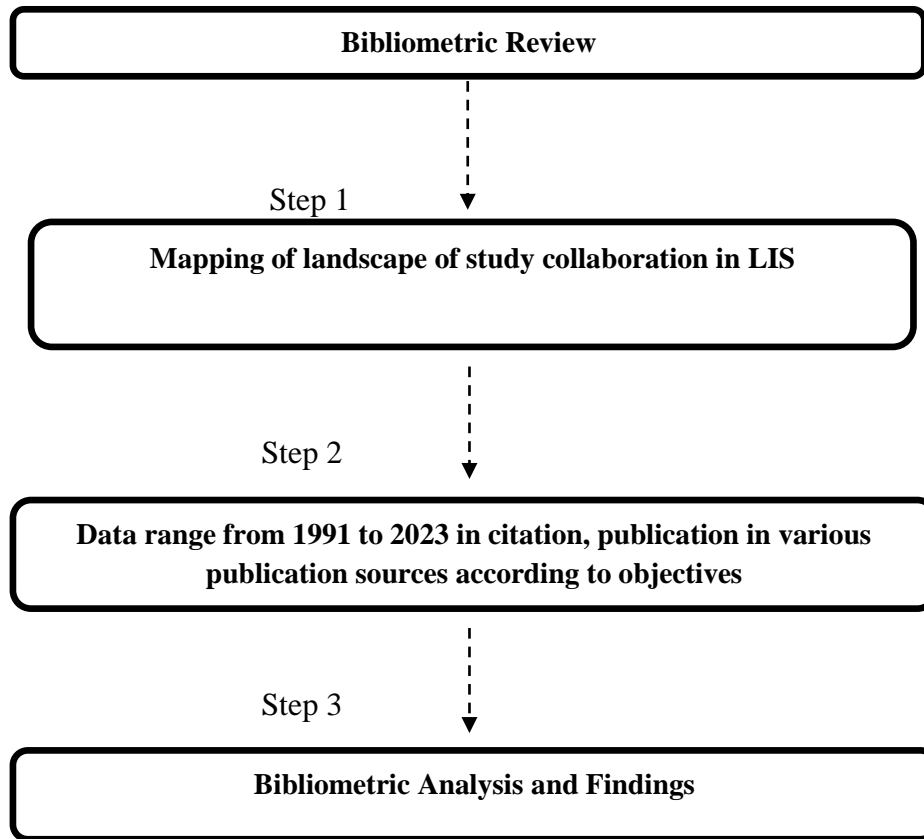


Figure 01: Stepwise process of Bibliometric analysis

DATA ANALYSIS

The output of the research focused on the bibliometric examination approaches indicated above, is presented below. The WOS cumulative estimations will be shown first, followed by the quotation results.

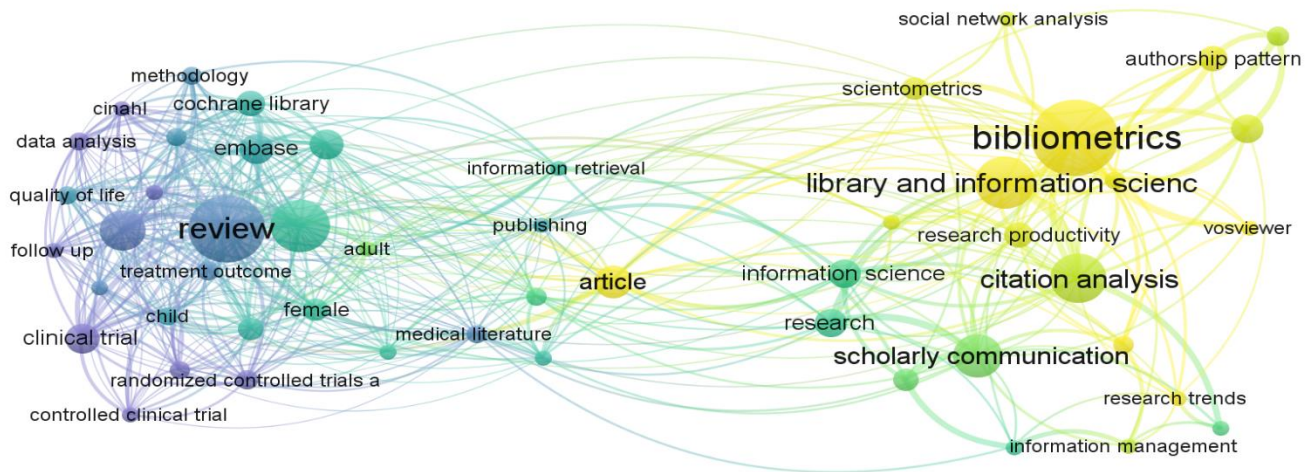


Figure 2: VOS Viewer Graph

The above VOS viewer graph reveals that the research-based activities are conducted in library and information science for different domains, and also helped in scholarly communication, Research evaluation, Citation analysis, and Research productivity.

Table 1: Publisher-Wise Citations on Mapping the Landscape of Research Collaboration in Library and Information Science from 1991-2023

Year	Name of Publishers				
	Springer	Wiley Blackwell	Emerald	Taylor & Francis	Elsevier
1991	397	0	0	0	629
1992	433	0	0	0	570
1993	402	0	0	0	526
1994	475	0	0	0	522
1995	544	0	0	0	551
1996	658	0	0	0	488

1997	728	0	0	0	465
1998	750	0	0	0	542
1999	908	0	0	0	576
2000	906	0	0	0	745
2001	1056	0	0	0	680
2002	1279	1	0	0	658
2003	1378	1	1	0	752
2004	1584	1	1	0	759
2005	1766	3	1	1	836
2006	1908	3	3	0	923
2007	2117	0	0	0	954
2008	2018	2	3	0	892
2009	2579	3	2	1	1064
2010	2544	2	1	1	1104
2011	2946	7	2	1	1123
2012	3190	4	2	1	1305
2013	3335	4	6	1	1571
2014	3977	4	9	1	1459
2015	4010	4	14	0	1681
2016	4699	8	8	1	1938
2017	4883	4	16	2	1864
2018	5429	5	16	4	1977
2019	6746	5	18	2	2139
2020	7343	14	31	8	2121
2021	11133	10	46	18	2169
2022	14932	10	110	10	2253
2023	8943	13	82	9	2087
Total	105996	108	372	61	37923

Publisher Wise Documents on the Mapping the Landscape of Research Collaboration in LIS Science from 1991-2023

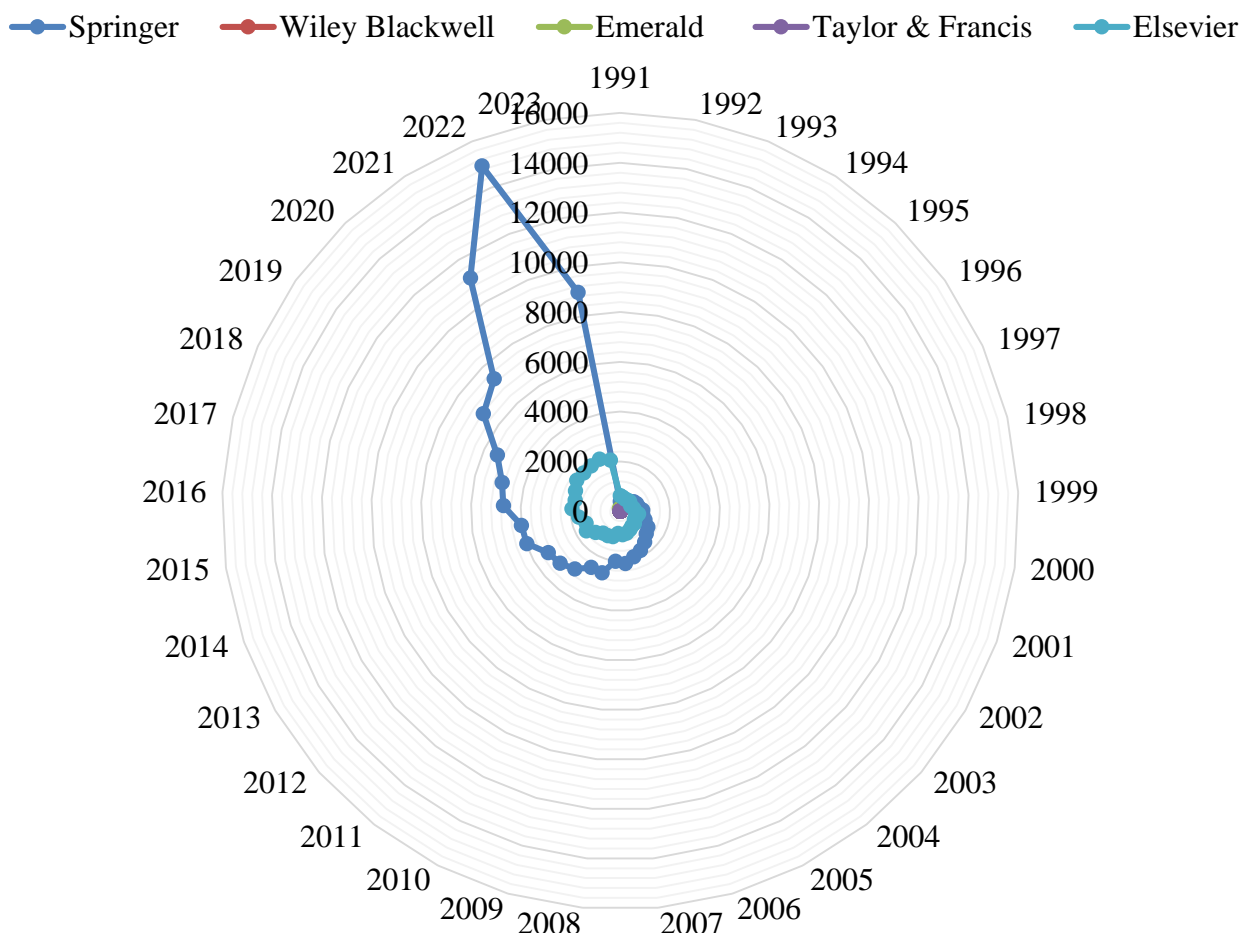


Figure 3: Radar Diagram Regarding Publishers and their Documents on Mapping the Landscape of Research Collaboration in LIS from 1991-2023

Table 1 and Figure 3 show the total number of publications published by various publishers about the statement "Mapping the Landscape of Research Collaboration in LIS" from 1991 to 2023. The years are given at the top, followed by the publishers down the side. The figures in the table show the total number of documents published by each publisher that year. Figure 3 and Table 1 show that Springer-105996, Wiley Blackwell-108, Emerald-372, Taylor & Francis-61, and Elsevier-37923 received the most documents published on mapping the Landscape of Research Collaboration in LIS from 1991 to 2023. According to the observation, Springer has a greater number of publications than the other publishers, with a total of 105996 publications, while Taylor & Francis has a lower number of publications than the other publishers, with a total of 61 publications.

Table 2: Citation Overview

Sr.no	Authors	Source/journal	Total Citations
1	“Byström, K., & Hansen, P”	“ <i>Journal of the American Society for Information Science and Technology</i> ”	443
2	“Hou, J., Yang, X., & Chen, C.”	“ <i>Scientometrics</i> ”	238
3	Zhao, D.	“ <i>Scientometrics</i> ”	114
4	“Olmeda-Gómez, C., Ovalle-Perandonos, M. A., &Perianes-Rodríguez, A.”	“ <i>Scientometrics</i> ”	67
5	“Liu, G., & Yang, L.”	“ <i>The Journal of academic librarianship</i> ”	37
6	“Sun, J., & Yuan, B. Z.”	“ <i>Malaysian Journal of Library & Information Science</i> ”	35
7	“Kumar Satpathy, S., K. Maharana, R., & Kumar Das, A.”	“ <i>Collection Building</i> ”	27
8	“Asubiaro, T. V., &Badmus, O. M.”	“ <i>Journal of Librarianship and Information</i> ”	24
9	“Siddique, N., Ur Rehman, S., Ahmad, S., Abbas, A., & Khan, M. A.”	“ <i>Global Knowledge, Memory, and Communication</i> ”	15
10	“Kumar, P.”	“ <i>International Journal of Information Library and Society</i> ”	14
11	“Velez-Estevez, A., García-Sánchez, P., Moral-Munoz, J. A., &Cobo, M. J.”	“ <i>Scientometrics</i> ”	13
12	“Wani, J. A., Ganaie, S. A., & Rehman, I. U.”	“ <i>Information Discovery and Delivery,</i> ”	5
13	“Zhang, Y., Ge, L., Xiao, L., Zhang, M., & Liu, S.”	“ <i>Journal of Global Information Management (JGIM)</i> ”	5
14	“Panahi, S., Lotfi, M., &Ouchi, A.”	“ <i>Library Philosophy & Practice.</i> ”	4
15	“Chaparwal, N., Teli, N. K., & Rajput, P. S.”	“ <i>Library Philosophy and Practice</i> ”	3
16	“Gupta, S., & Gul, S.”	“ <i>Global Knowledge, Memory, and</i> ”	2

		<i>Communication</i>	
17	“Kamińska, A. M., Opaliński, Ł., & Wyciślik, Ł.”	<i>“Sustainability”</i>	1

Table 2 begins with a citation overview, highlighting the leading 18 most widely cited papers in the field, which will provide the quantitative foundations for an analytical evaluation of the Mapping of the Landscape of Research Collaboration in LIS from the year 1991 to 2023.

Examination of author citations gives just a round corner into the Mapping the Landscape of Research Collaboration in LIS; researchers are primarily interested in the issues addressed in these papers. Author-based evaluation provides preliminary perspectives of potential effects on the research area. Byström, K., & Hansen, P (2005) issued an article with 443 citations that centered on “Conceptual framework for tasks in information studies.” Hou, J., Yang, X., & Chen, C. (2018) emphasize “Emerging trends and new developments in information science: a document co-citation analysis (2009–2016)” granted 238 citations. An article by Zhao, D. (2010) study of the characteristics and impact of research in the library and information science (LIS) field, which was funded through research grant programs, and compares it with research that received no extra funding was published alongside 114 citations. A Manuscript published by Olmeda-Gómez, C., Ovalle-Perandones, M. A., & Perianes-Rodríguez, A. (2018) discusses the thematic backdrop for Spanish library and information science output. It draws from Web of Science records on papers authored by researchers at Spanish institutions and published under the category ‘Information Science & Library Science’ between 1985 and 2014 which received 67 citations. Liu, G., & Yang, L. (2019) issued an article with 37 citations that centered on “Popular Research Topics in the Recent Journal Publications of Library and Information Science.” Sun, J., & Yuan, B. Z. (2020) published research in which they analyzed top papers published in the field of LIS published between 2009 and 2019 and included in the Web of Science (WoS), generating 35 citations for a study. Kumar Satpathy, S., K. Maharana, R., & Kumar Das, A. (2013) investigated scholarly communications in open-access journals of library & information science and to study the key dimensions of these publications. & received 27 citations. The study by Asubiaro, T. V., & Badmus, O. M. (2020) aims to understand the trends in the scope and subject classifications of library and information science research from authors that are affiliated with institutions in Africa alongside 24 citations. In light of this crucial consideration, the study by Siddique, N., Ur Rehman, S., Ahmad, S., Abbas, A., & Khan, M. A. (2023), aims to investigate the research productivity of library and information science (LIS) authors affiliated with the 22 countries of the Arab League. It also identifies the top countries, organizations, authors, journals, natures of collaboration, and frequently used keywords in LIS research in the Arab world, and has earned 15 citations. “A Bibliometric Study on Open Access Journals in Library Science Discipline in DOAJ” published by Kumar, P. (2013) consist of 14 citations. Likewise, the study “Why do papers from international collaborations get more citations? A bibliometric analysis of Library and Information Science papers” by Velez-Estevez, A., García-Sánchez, P., Moral-Munoz, J. A., & Cobo, M. J. (2022) earned 13 citations. Zhang, Y., Ge, L., Xiao, L., Zhang, M., & Liu, S. (2021) investigated portray and visualize the panorama of the evolutionary process of IS research with two powerful bibliometric tools, including both CiteSpace and VOSviewer & received 5 citations. An article by Wani, J. A., Ganaie, S. A., & Rehman, I. U. (2023) investigated to examine the research output on the “library and information science” (LIS) research domain in

South Africa was published alongside 5 citations. The study by Panahi, S., Lotfi, M., & Ouchi, A. (2022) aimed to determine the research trends on the Library and Information Science (LIS) in the Scopus database during 2011-2020 and specify the hot topics in this field from July 2020 to July 2021 was cited by 4. "Mapping of research papers in Malaysian journal of library and information science 2010-2019: A Bibliometric study" published by Chaparwal, N., Teli, N. K., & Rajput, P. S. (2020) consists of 3 citations. Gupta, S., & Gul, S. (2022) aims to present an insight into the research landscape of Library and Information Science (LIS) in India using a bibliometric visualization tool. alongside 2 citations. Kamińska, A. M., Opaliński, Ł., & Wyciślik, Ł. (2021) issued an article with 1 citation that centered on "The Landscapes of Sustainability in the Library and Information Science: Systematic Literature Review."

Table 3: Top Countries and Regions in Research on Documents regarding Mapping the Landscape of Research Collaboration in LIS from 1991-2023

Country/Territory	No. of Documents	Country/Territory	No. of Documents	Country/Territory	No. of Documents
India	40	Bangladesh	2	Finland	1
United States	29	Egypt	2	Hong Kong	1
United Kingdom	20	France	2	Indonesia	1
Spain	14	Germany	2	Israel	1
China	12	Mexico	2	Italy	1
Australia	7	Norway	2	Macao	1
Canada	7	Poland	2	Oman	1
Pakistan	5	South Africa	2	Peru	1
Iran	4	South Korea	2	Philippines	1
Netherlands	4	Switzerland	2	Slovenia	1
Russian Federation	4	Brazil	1	Taiwan	1
Greece	3	Colombia	1	Tanzania	1
Malaysia	3	Croatia	1	Thailand	1
New Zealand	3	Cuba	1	Turkey	1
Nigeria	3	Cyprus	1		
Saudi Arabia	3	Denmark	1		

Top Countries and Regions in Research on Documents regarding Mapping the Landscape of Research Collaboration in Library and Information Science from 1991-2023

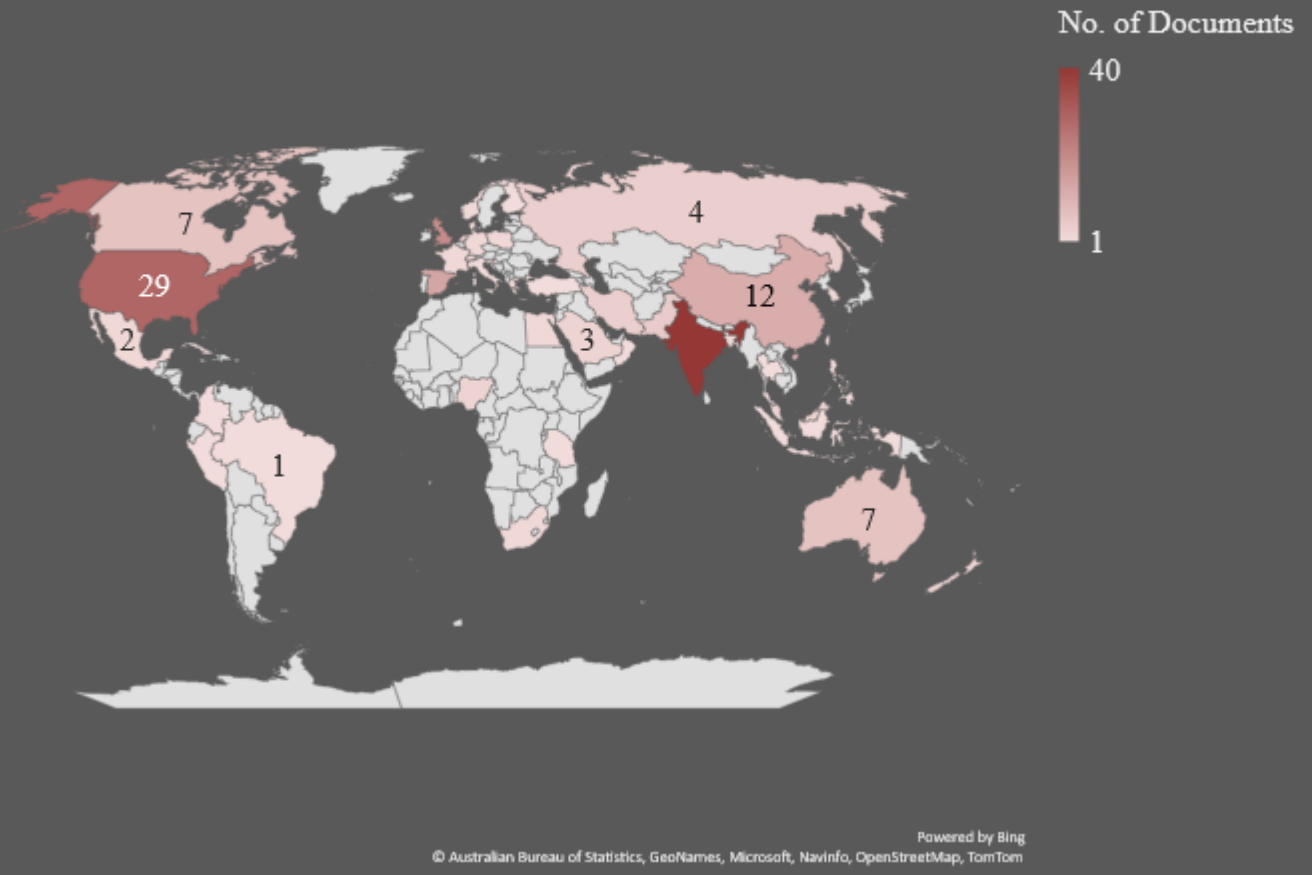


Figure 4: Geographical Distribution of Documents Regarding Mapping the Landscape of Research Collaboration in LIS from 1991-2023

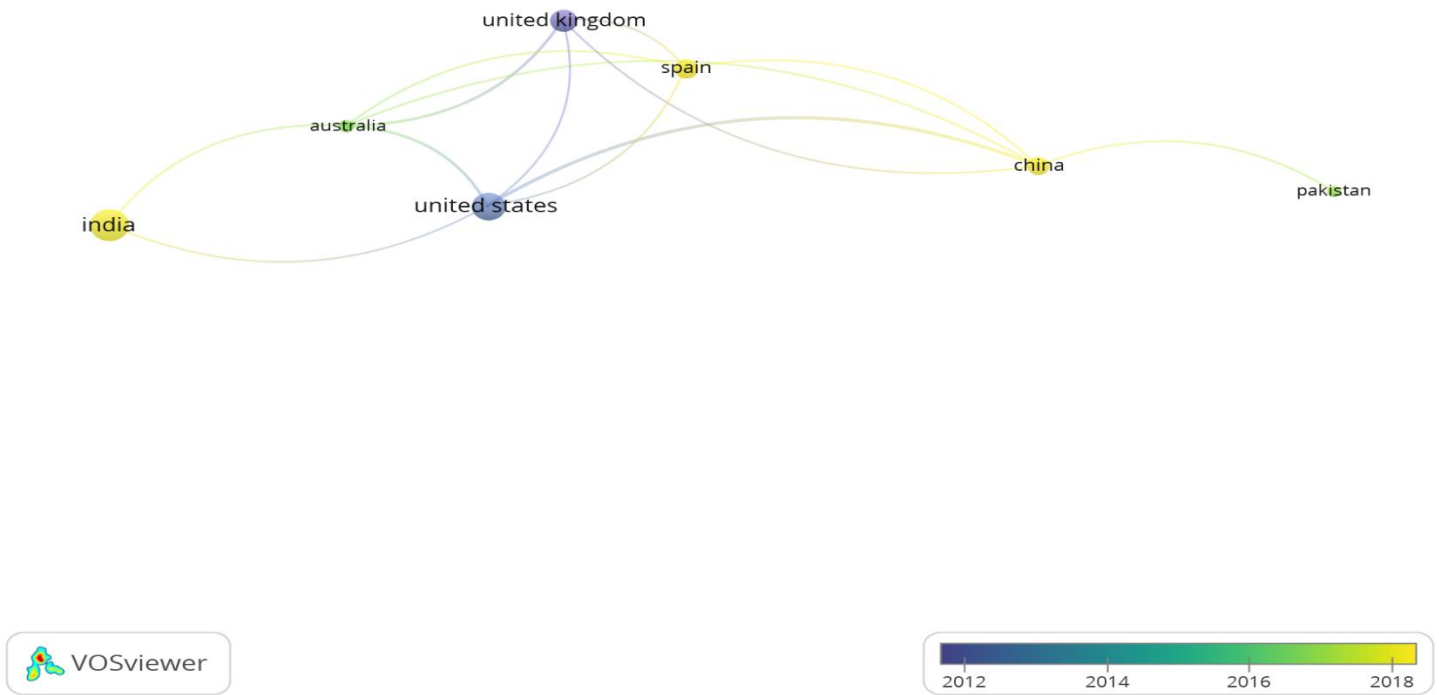


Figure 5: VOS Viewer Graph

Table 3 and figure 4 and 5 illustrates the Top Countries and Regions in Research on Documents published by the researchers throughout the period (i.e., 1991-2023) regarding Mapping the Landscape of Research Collaboration in LIS. Through Figures 4 and 5 and Table 3, it can conclude that 40 papers were published by researchers from India, 29 from the United States, 20 from the United Kingdom, 14 from Spain, 12 from China, and 7 from Australia and Canada. 5 papers were published by researchers from Pakistan, 4 from Iran, the Netherlands, and Russian Federation, and 3 from Greece, Malaysia, New Zealand, Nigeria, and Saudi Arabia. 3 papers were published by researchers from Bangladesh, Egypt, France, Germany, Mexico, Norway, Poland, South Africa, South Korea, and Switzerland. 1 paper was published by researchers from Brazil, Colombia, Croatia, Cuba, Cyprus, Denmark, Finland, Hong Kong, Indonesia, Israel, Italy, Macao, Oman, Peru, Philippines, Slovenia, Taiwan, Tanzania, Thailand, Turkey.

Table 4: Types of Documents published on Mapping the Landscape of Research Collaboration in LIS from 1991-2023

DOCUMENT TYPE	
Document Type	No. of Documents
Article	115
Review	31
Conference Paper	11

Conference Review	7
Book	1
Book Chapter	1
Editorial	1

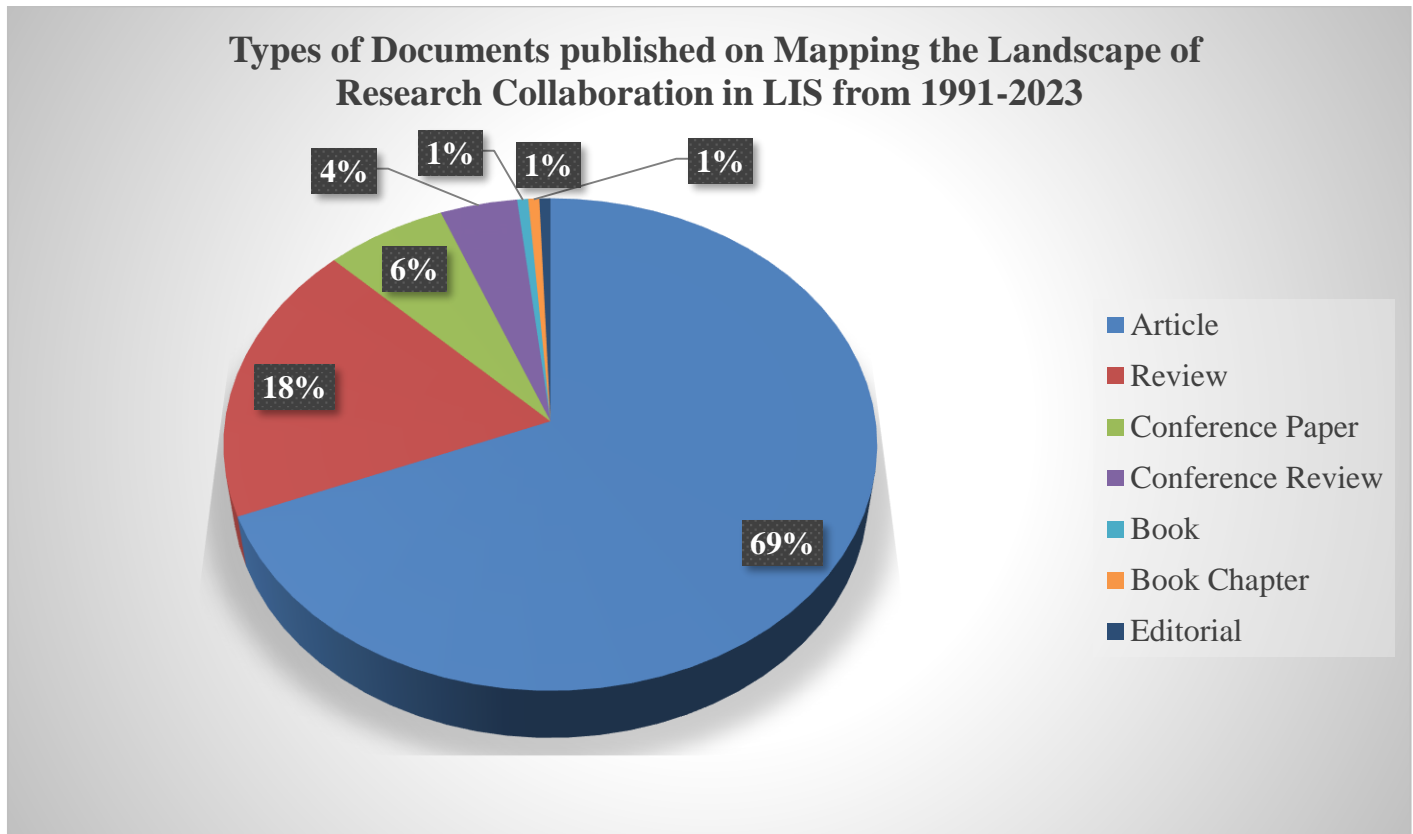


Figure 6: Distribution of Publication based on Document published on Mapping the Landscape of Research Collaboration in LIS from 1991-2023

Table 4 and Figure 6 below illustrate the Distribution of Publications based on Documents published by the researchers throughout the period (i.e., 1991-2023) regarding Mapping the Landscape of Research Collaboration in LIS. Through Figure 6 and Table 4, it can be concluded that for conducting bibliometric analysis the data is from various documents i.e., Articles, Conference papers, Book chapters, Reviews, Conference Review, Books, Book chapters, and Editorials. The analysis consists of 115 Articles, 31 Review papers, 11 Conference Papers, 7 Conference reviews, 1 Book Chapter, 1 Editorial, and 1 Book.

Table 5: Types of Subject Areas in which documents are published on Mapping the Landscape of Research Collaboration in LIS from 1991-2023

SUBJECT AREA	
Subject Area	No. of Documents
Social Sciences	109
Computer Science	57
Medicine	37
Arts and Humanities	16
Decision Sciences	14
Engineering	7
Mathematics	7
Biochemistry, Genetics, and Molecular Biology	4
Business, Management, and Accounting	3
Agricultural and Biological Sciences	2
Health Professions	2
Earth and Planetary Sciences	1
Economics, Econometrics, and Finance	1
Environmental Science	1
Immunology and Microbiology	1
Materials Science	1
Physics and Astronomy	1

TYPES OF SUBJECT AREAS IN WHICH DOCUMENTS ARE PUBLISHED ON MAPPING THE LANDSCAPE OF RESEARCH COLLABORATION IN LIS FROM 1991-2023

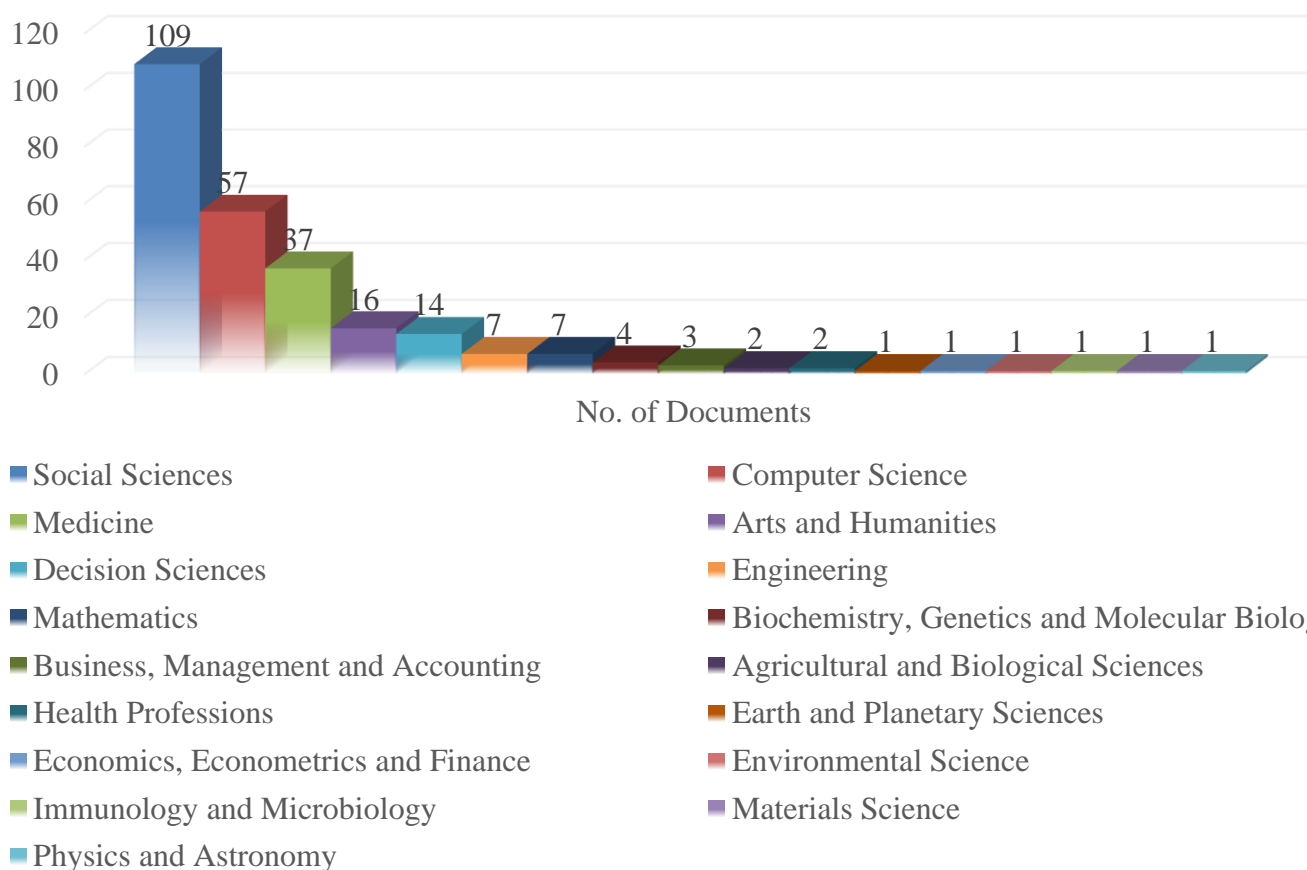


Figure 7: Distribution of Subject Area based on Document published on Mapping the Landscape of Research Collaboration in LIS from 1991-2023

The table provides information about the number of documents available in different subject areas. There are 109 documents published in the field of Social Sciences from 1991-2023, 57 documents published in the field of Computer Science, 37 documents published in the field of Medicine, 16 documents published in the field of art and Humanities, 14 documents published in the field of decision Sciences, 7 documents published in the field of engineering and Mathematics, 4 documents published in the field of Biochemistry, Genetics, and Molecular Biology, 3 documents published in the field of Business, Management, and Accounting, 2 documents published in the field of agricultural and Biological Sciences and Health Professions, and 1 document is published in the field of earth and Planetary Sciences, Economics, Econometrics and Finance, Environmental Science, Immunology and Microbiology, Materials Science, and Physics and Astronomy.

DISCUSSION

Figure 2 shows a VOS viewer graph as a metric measurement of the research-related activities in library and information science. This figure gives the role and function of research-based activities such as publications, citations, and research evaluation. Table 1 and Figure 3 show an analytical framework for the publication of research-related resources in various publication houses including Springer, Taylor & Francis, Wiley Blackwell, Emerald, and Elsevier. Table 2 presents an analytical measurement of citations of 18 reputed

published papers by scholars in various journals in mapping study collaboration in LIS. Table 3 and Figures 4, and 5 show a regional analysis of the resources of research-based papers in mapping the landscape of research collaboration in LIS in Asia, Africa, and Europe. It is also found that India is a top-ranked country in the publication of investigating LIS. Table 4 and Figure 6 show the analytical framework for the publication of research in LIS in articles, reviews, conference papers, conference reviews, book chapters, and editorials. These consequences show that publications are included by various sources of publication. Table 5 and Figure 7 show metrics of analytical framework about the documentation of research published in the area of mapping of the landscape of research collaboration in LIS in the fields of Social Area, Medicine, Decision Science, Mathematics, Business, Management and Accounting, Health professional, Economics, Econometrics, and Accounting, etc.

Based on the above concise discussion, there are the following summary points:

- i. It shows that there are various sources of publication to access research published in the area of mapping in the landscape of research alliance in LIS across the globe. It is well known that the process of mapping the landscape of research is based on giving significant importance to the role and function of LIS in the era of an e-library in the consequences of globalization.
- ii. Secondly, the discussion part also shows that India has a proper mechanism of analysis of metric evaluation of a publication, citation, and documentation of the research's resources about mapping in the landscape of research alliance LIS. Apart from this, there are regional variations in publication, citation, and documentation about mapping in the landscape of research collaboration in LIS because Asian with European countries are leading countries in the area of LIS.
- iii. Finally, important to discuss the data range is varied from 1991 to 2023 regarding publication, citation, and documentation of mapping of the research collaboration in LIS across the globe. It also represents the role of globalization in research-based activities in India in the context of globalization as well as the situation of the pandemic of COVID-19 in the twenty-first century. These consequences lead to the phenomena of developing an understanding of the sustainable approach of methodology in mapping the landscape of study collaboration in LIS.

CONCLUSION

Focused on the above concise discussion concerning the mapping in the landscape of research alliance in LIS, it is realized that there is the availability of various research-based sources of depth information about the LIS. There are regional variations in the trend of publications, citations, and documentation about research-based activities in library and information science from the selective years from 1991 to 2023. From these perspectives, it is also realized that mapping the landscape of study collaboration in LIS is a depth analysis of measuring quantitative metrics about publication, citation, and documentation under the method and approach of Bibliometric analysis. In this paper, it is also found that India is an emerging country in the process of conducting research-based activities in the field of mapping in the landscape of research collaboration in LIS. It is also realized that there is a broad concept being emerged concerning the depth study and analysis of the process, determinants, and consequences of the mapping in the landscape of research collaboration in LIS. Therefore, it is realized that conceptual and theoretical framework about the library and information science

gives a broad view of developing an understanding of the phenomenal analysis of the metrics of citation, publication, and documentation of research-based activities in LIS. Study materials exploring the broad concept of the mapping of the landscape in research collaboration in LIS, it is also realized that metric evaluation of the trend analysis of publications, citations, and documentation is based on the manner of study design of retrospective to the prospective manner of study design. Additionally, it is also found that these consequences lead to the process of implementation of a sustainable approach to accessing e-resources from the e-library during and after the pandemic of COVID-19 in India and abroad. These perspectives can be understood as opportunities in the process of mapping the landscape of study collaboration in LIS.

Above concise concluding remarks, there are the following recommended policies for better enhancement of mapping in the landscape of research collaboration in LIS:

- i. There is a need to conduct metrics-based research activities concerning the depth study of the role and function of LIS in the consequences of globalization. It is also well known that these consequences are associated with phenomena of the realistic-based study on the grassroots level concerning the.
- ii. From the perspective of India, it needs to conduct a depth analytical-based study about the study of process, determinants, and consequences of the mapping in the landscape of research collaboration in LIS after the post-pandemic of COVID-19.
- iii. It is also realized that there is needed to the analysis of the Bibliometric approach in the research area of LIS because this method and approach are based on the metric-based evaluation of the publication, citation, and documentation about the research-based activities in the area of mapping in the landscape in research collaboration in LIS.

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