

Analysis of the Research Status in the **International Information Science Field** in the Past Decade

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How to cite this paper: Wang, F. Y. (2024). Analysis of the Research Status in the International Information Science Field in the Past Decade. Voice of the Publisher, 10, 251-267.

https://doi.org/10.4236/vp.2024.103021

Received: July 6, 2024 Accepted: August 27, 2024 Published: August 30, 2024

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Abstract

Research on international publications, research hotspots, and disciplinary frontiers in the field of library and information science helps promote the development of the discipline and enhance academic discourse. This paper uses journal articles included in the top 20 journals ranked by impact factor in the 2023 Journal Citation Reports in the field of library and information science as data sources and employs Citespace to analyze the development status of the field over the past decade (2014-2023) from aspects such as research status, knowledge base, research hotspots, and frontier analysis. The study found that the number of publications in this field is steadily increasing, with the main core authors and prolific institutions primarily located in Europe and the United States. Current research focuses mainly on information services, knowledge management, and technological innovation, with research methods emphasizing the use of emerging technologies such as big data and artificial intelligence. With the continuous development of information technology, the research themes in the field of library and information science have shifted from traditional user experience-focused information service research to new knowledge service research.

Keywords

Library and Information Science, Fronts Analysis, Knowledge Mapping

1. Introduction

With the rapid development of information technology, the new technological revolution has provided new challenges as well as fresh opportunities for the field of library and information science. Studying the current status and development trends of the global library and information science field is conducive to maintaining integrity and innovation, providing research ideas for China's library and information science discipline, and guiding further research in the field (Jie, 2022).

The field of library and information science was formed in the 1970s through the merger of library science and information science. As early as 1808, Sauperl and Saye (1999) first introduced the field of library and information science, describing the knowledge required for library work. The journal "Library and Information History," established in 1967, is the only UK journal dedicated to the study of library history, book history, and the emerging field of information history, and includes a substantial amount of review literature related to library and information science. In 1998, Price Award winner Crowley (2005) conducted a quantitative analysis using co-citation analysis on papers published in 12 journals in the field of library and information science from 1972 to 1995, systematically reviewing and studying the current state, development trajectory, and trends of the discipline.

In 2005, White and McCain (1998) discussed the emergence of the gap between academia and practice in library and information science by reviewing the theoretical perspectives of key scholars. In 2007, Janssens et al. (2006) used bibliometric methods to analyze over 1,000 articles published in five library and information science journals between 2002 and 2004. In 2014, Tuomaala et al. (2014) from the School of Information Sciences at the University of Tampere analyzed research articles published in core library and information science (LIS) journals from 1965 to 2005, finding that the proportion of studies on library and information service activities declined during the study period, while research on information seeking and scholarly communication gained popularity.

In 2015, Chang et al. (2015) from the Department of Library and Information Science at Taiwan University used keyword analysis, bibliographic coupling analysis, and co-citation analysis to track changes in research themes in library and information science over four periods (each lasting five years) from 1995 to 2014. The results showed a decreasing trend in the percentage of articles related to information seeking (IS) and information retrieval (IR), while the percentage of articles focusing on bibliometrics increased. In the same year, Lee (2015) from Kyonggi University in Korea conducted a co-citation analysis of the Korea Citation Index (KCI) data, accurately identifying the research frontiers and hot topics in the field of library and information science (LIS) in Korea from 2004 to 2013. He found that the characteristics of research frontiers in interdisciplinary research fields in Korea have great potential. In 2020, Sahu and Parabhoi (2020) from the Indian Institute of Technology analyzed the development status of library and information science education (LIS) in India using literature from the Scopus database. Their study indicated that LIS professionals in India tend to collaborate in writing research papers.

In China, Zhu and Yuan (2014) used national social science fund projects in the library and information science field from 2005 to 2010 as samples and employed social network analysis to explore the relationships and structures reflected among

research project team members, investigating and verifying the existence of "differential order patterns" in research projects. Li and Wen (2017) categorized papers published in core journals of the library and information science field in 2011 into three groups: national social science fund papers, other funded papers, and unfunded papers. They analyzed the academic impact of each group of papers based on the citation frequency of funded papers, the citation frequency of different categories of funded papers, and the journal funding h-index. Li (2012) used knowledge mapping methods to conduct multi-dimensional quantitative and qualitative analysis of relevant literature in the international library and information science field from 2001 to 2011, depicting the recent research status and frontiers in the field. Zhao et al. (2021) analyzed journal articles to study the progress in the library and information science discipline during the 13th Five-Year Plan period, suggesting that integrating theory and practice has become an important trend in the research of the field. Chen et al. (2018) conducted a comparative analysis of the relevance and differences in research themes between Chinese and foreign library and information science fields, highlighting the connections and distinctions in big data research.

In consideration of this, this paper uses journal articles included in the top 20 journals ranked by impact factor in the 2023 Journal Citation Reports in the field of library and information science as data sources, and uses the Citespace tool to explore the academic research achievements and research hotspots in the field of library and information science from aspects such as research status, knowledge base, research hotspots, and frontier analysis, aiming to reveal the development and characteristics of the library and information science discipline from a scientifically quantifiable perspective.

2. Data Source

The data for this article comes from the Social Science Citation Index (SSCI), a globally renowned comprehensive social science literature database established by the American Institute for Scientific Information. This database is the most important global index of social science journals, capable of statistically analyzing the number of social science papers from different countries and regions. It covers 55 fields, including anthropology, law, economics, history, and also includes the field of library and information science. The literature it includes not only presents the current situation and frontier of international library and information science research, but also reveals the multi-faceted, comprehensive, and interdisciplinary cross-development trends of the field. However, due to the comprehensive and diverse nature of research in the library and information science field, the collection of complete data faces significant challenges in research (Li, 2021). Therefore, in the process of data collection, this study referred to the Journal Citation Reports (JCR)¹ published annually by the American Institute for Scientific Information (ISI), which evaluates leading academic journals worldwide with quantitative statistical information based on the authoritative citation database of Web of Science, covering over 11,000 journals from more than 2,000 publishers in over 230 disciplines from 83 countries and regions (Lian, 2022). This study selected the top 20 journals in the field of library and information science in the Journal Citation Reports for the year 2022 as the primary source of data collection. Please refer to **Table 1** for specific rankings.

Table 1. Sources of data from journals.

ID	Journal Name	Country/Region	Total Citations	2023 JIF	JCI zone
1	International Journal of Information Management	United Kingdom	19,865	21	Q1
2	Information & Management	Netherlands	13,809	9.9	Q1
3	European Journal of Information Systems	United Kingdom	5473	9.5	Q1
4	Information Processing & Management	United Kingdom	10,883	8.6	Q1
5	Telematics and Informatics	United States	8586	8.5	Q1
6	Government Information Quarterly	United States	6753	7.8	Q1
7	Journal of Management Information Systems	United States	9097	7.7	Q1
8	MIS Quarterly	United States	29,364	7.3	Q1
9	Journal of Computer-Mediated Communication	United States	5312	7.2	Q1
10	Journal of Strategic Information Systems	Netherlands	3517	7	Q1
11	Journal of Knowledge Management	United Kingdom	9844	7	Q1
12	Journal of Organizational and End User Computing	United States	1362	6.5	Q1
13	Journal of Enterprise Information Management	United Kingdom	3684	6.5	Q1
14	Information Systems Journal	United Kingdom	3865	6.4	Q1
15	Quantitative Science Studies	Netherlands	968	6.4	Q1
16	Journal of the American Medical Informatics Association	United Kingdom	15,068	6.4	Q1
17	Information and Organization	United Kingdom	1389	6.3	Q1
18	Journal of the Association for Information Systems	United States	4885	5.8	Q1
19	International Journal of Geographical Information Science	United Kingdom	8901	5.7	Q1
20	Telecommunications Policy	United Kingdom	3907	5.6	Q1

Looking at the top 20 journals ranked by impact factor in the field of library and information science, they all belong to Q1 in the JCI zone, with a 2022 JIF ranging from 5.6 to 21. From a national perspective, half of the top 20 journals are from the UK, while the remaining include 7 journals from the United States and 3 from the Netherlands.

Literature retrieval was conducted in the core collection database of Web of Science, selecting specific journals within the time range from 2012 to 2022, yielding a total of 16,367 articles. This study selected 95.1% of the literature, comprising Articles and Review Papers, as the analytical sample, totaling 15,570 records.

3. Bibliometric Analysis

3.1. Literature Information Quantity Statistics

Statistical analysis of literature information plays a crucial role in scientific fundamental research, to some extent, reflecting the research activity level in the discipline (Li, 2021). Looking at the annual number of publications from core journals in the field of library and information science over the years, the average annual publications for core journals in the field are 1378 papers. The number of publications shows a gradual increasing trend, and since 2020, the growth momentum has become pronounced. Overall, attention to the field of library and information science is continuously increasing. **Figure 1** illustrates the annual number of publications over ten years for the selected 20 core journals in the field.



Figure 1. Annual publication volume of core journals in the field of library and information science.

The data presented in **Figure 2** are the publication counts over ten years from the source journals. In terms of the number of published articles, the research outcomes in the field of library and information science are mainly published in the Journal of the American Medical Informatics Association (JAMIA) and Information Processing & Management (abbreviated as INFORM PROCESS MANAG)². JAMIA, the journal of the American Medical Informatics Association, is a leading peer-reviewed journal in the biomedical and health informatics field and ranks first in the impact factor ranking of medical informatics journals. JAMIA covers comprehensive content in the field, including articles on clinical nursing, clinical research, translational science, implementation science, imaging, education, consumer health, public health, and policy. INFORM PROCESS MANAG was founded in 1963 and is published by ELSEVIER SCI LTD. Its main focus covers engineering - computer science: the entire field of information systems. This journal is considered an excellent SCI journal in this specific field and has significant academic influence in the industry segmentation³.

²https://www.shengsci.com/sci/8521.html. ³https://www.haotougao.com/sci/03064573.html.



Figure 2. Distribution of publication volume among core journals in the field of library and information science.

3.2. Authorship Statistics Analysis of Academic Papers

The number of publications and citation frequency of authors can be used to identify core authors in specific fields and their academic influence. This paper selects the top ten authors ranked by publication count and citation frequency as core authors and highly cited authors in the field, and the statistical results are shown in **Table 2** and **Table 3**.

Т	able	2.	Top	10	authors b	v number	of	publications.

ID	Author	Number of Publications	Country	Affiliation	High Citation Scholar	h-index
1	Ohno-Machado, Lucila	67	USA	University of California	No	28
2	Bates, David W.	57	USA	Harvard Medical School	Yes	129
3	Grover, Varun	38	USA	University of Arkansas	No	15
4	Dwivedi, Yogesh K.	36	UK	Swansea University	Yes	83
5	Lowry, Paul Benjamin	35	USA	Virginia Tech University	No	45
6	Pan, Shan L.	33	Australia	University of New South Wales	No	41
7	Xu, Hua	31	USA	University of Texas	No	30
8	Wright, Adam	29	USA	Brigham and Women's Hospital	No	38
9	Kim, Seongcheol	28	South Korea	Korea University	No	18
10	Thatcher, Jason Bennett	28	USA	Brigham and Women's Hospital	No	38

ID	Author	Number of Publications	Country	Affiliation	High Citation Scholar	h-index
1	Venkatesh, Viswanath	7136	USA	Virginia Tech and State University	Yes	67
2	Thong, James Y. L.	5997	China	Hong Kong University of Science and Technology	No	32
3	Dwivedi, Yogesh K.	4343	UK	Swansea University	Yes	83
4	Chiang, Roger H. L.	2959	Singapore	Nanyang Technological University	No	13
5	Chen, Hsinchun	2636	USA	University of Arizona	No	20
6	Kock, Ned	1914	USA	Texas A&M International University	No	37
7	Rana, Nripendra P.	1876	Qatar	Qatar University	Yes	58
8	Alalwan, Ali Abdallah	1663	Qatar	Qatar University	Yes	23
9	Henseler, Jorg	1508	Netherlands	University of Twente	Yes	38
10	Lu, Yaobin	1482	China	Huazhong University of Science and Technology	No	46

Table 3. Top 10 authors by citation frequency.

From the table above, Ohno-Machado, Lucila from the University of California, with 65 publications, ranks first in terms of publication volume, while Venkatesh, Viswanath from Virginia Tech and State University, with a citation frequency of 7136, becomes the most cited author in this field. Ohno-Machado, Lucila is the inaugural chair of the Department of Biomedical Informatics at the University of California, San Diego, with research interests in computer science biomedical informatics, health care sciences and services, information science and library science, and gastroenterology and hepatology, having published a total of 191 publications in the Web of Science core collection⁴. Viswanath Venkatesh is a distinguished scholar at the Pamplin College of Business at Virginia Tech⁵, widely regarded as one of the most influential scientists, with significant contributions in major journal publications and citation impact, primarily focusing on business and economics, information science and library science, as well as computer science psychology engineering, with a total of 145 publications in the Web of Science core collection.

It is worth noting that Dwivedi, Yogesh K. from Swansea University in the UK has entered the top 10 in both publication volume and citation frequency ranking. Yogesh K. Dwivedi is a professor of Digital Marketing and Innovation at the School of Management, Swansea University, UK, and the founding director and research co-director of the Emerging Markets Research Centre (EMaRC). Professor Dwivedi currently serves as the editor-in-chief of the International Journal of Information Management⁶. He is mainly engaged in research in disciplines such as business and economics, computer science, information science and library

⁴https://www.nature.com/articles/nj7255-655a.

⁵https://dl.acm.org/profile/81375604594. ⁶https://www.swansea.ac.uk/staff/y.k.dwivedi/. science, and operations research and management science, with high publication volume and citation frequency.

3.3. High-Yield Institution Analysis

This article conducted statistical analysis of the data based on the institutions of the article authors, and a total of 113 different research institutions were found to have published articles in the field of information science and library science. **Table 4** shows the top ten institutions in terms of the number of published articles.

ID	Institution	Number of Publications	Region	Proportion (%)
1	Harvard University	1052	United States	4.56
2	University of Texas	997	United States	4.32
3	Pennsylvania State University	851	United States	3.69
4	University of California	826	United States	3.58
5	University System of Georgia	694	United States	3.01
6	University of Florida	556	United States	2.41
7	Indiana University	535	United States	2.32
8	University of Illinois	495	United States	2.14
9	Wuhan University	490	China	2.12
10	University of Michigan	470	United States	2.04

Table 4. Distribution of top 10 institutions by number of publications.

In terms of the number of papers published, the top three institutions are Harvard University, the University of Texas, and the Pennsylvania State University in the United States, with proportions of 4.56%, 4.32%, and 3.69% respectively. It is evident that these three institutions have conducted more in-depth research in the field of library and information science, demonstrating a higher academic level. Other institutions ranking higher include the University of California, the University of Georgia, the University of Florida, and Indiana University.

In terms of regional distribution, 90% of the top ten institutions in terms of the number of papers published in the field of library and information science are universities in the United States. This indicates that the United States has a significant academic influence in this field, driving the progress and development of library and information science. Wuhan University, ranked ninth, is the only non-American university, located in China. This suggests that Chinese library and information science also has a place in the international arena, but there is still a considerable gap compared to the leading institutions.

4. Content Analysis of Literature

4.1. Research Hotspots

Keywords represent the highly refined and summarized expression of the paper's theme by the authors, accurately reflecting the core and essence of the text content. By studying high-frequency keywords in a disciplinary field, one can gain insight into the research hotspots and frontiers of that field, which is highly representative (Abasi, 2021). In this study, the downloaded data was imported into Citespace software, with the network node type selected as "Keyword". The time segmentation option was set to 1, dividing the 10 years of data into 10 time slices by year. The threshold was set to the top 50 keywords by frequency, and the software was run to generate a keyword co-occurrence map. By clicking on nodes in the map, the frequency of occurrence of high-frequency keywords can be obtained. The specific data is shown in **Table 5**.

ID	Keyword	Frequency	ID	Keyword	Frequency
1	model	1560	11	innovation	666
2	impact	1348	12	behavior	578
3	technology	1203	13	framework	574
4	system	1174	14	knowledge	565
5	information technology	1068	15	information system	540
6	management	1057	16	trust	505
7	performance	1048	17	internet	502
8	information	1026	18	communication	482
9	social media	835	19	network	461
10	adoption	672	20	quality	458

Table 5. List of high-frequency keywords.

From **Table 5**, it can be seen that the top 5 high-frequency keywords are model, impact, technology, system, and information technology. The most frequent keyword is "model," indicating that in practical applications, it often requires the establishment of specific models to solve real-world problems. Next is "impact," indicating that research in the field of library and information science pays attention to impact, such as academic impact of journals, etc. Ranking third is "technology," reflecting that research in the field of library and information science should rely on technological methods, tools, etc., to achieve good research results. The fourth keyword is "system," indicating that research in the field of library and application. The fifth keyword is "information technology," similar to the third-ranked keyword "technology," highlighting the importance of information technology in research in the field of library and information science such as "management," "performance," "information," and "social media" also reflect different research tendencies in the field of library and information science.

In order to better analyze the research topics represented by high-frequency words, this paper used Citespace software to cluster the parsed keywords according to the closeness of their associative relationships, obtaining the following three clustered themes, as shown in **Figure 3**.



Figure 3. Research themes derived from clustering of high-frequency keywords.

From **Figure 3**, it can be observed that the research topics reflected by high-frequency keywords mainly focus on the following three aspects:

4.1.1. Information Service

The key terms of this theme mainly include behavior, user acceptance, firm performance, capability, quality, satisfaction, information technology, e-commerce, and trust. This theme indicates that with the advancement of social informatization, an increasing number of information services are oriented toward the needs of users and companies, with particular emphasis on the quality of information services and user satisfaction (Lee, 2015). The goal of information services is to deliver valuable information to users and achieve optimal allocation of information resources, which is also the core research theme in the field of library and information science. Information services in the field are central to knowledge dissemination and acquisition, with profound effects on user satisfaction, trust, as well as academic and research performance. Providing high-quality information services and adopting modern information technology are among the key challenges and opportunities in this field.

The library's information services are primarily tailored to meet the needs of readers. These services include digital library information services, virtual reference consultations, and public information dissemination. When designing and organizing the library's information services, the information needs of users are considered a key factor in formulating service plans (Lian, 2019). Various user-oriented platforms such as WeChat, Weibo, and digital libraries have attracted widespread attention, aiming to meet the needs of users. This trend reflects the continuous development and innovation in the field of library information services. For example, the Information Technology Department of the National

Library, in collaboration with China Knowledge Network, revamped and upgraded the National Digital Library APP. They adopted a flat design style to redesign the client interface, making the interaction design more user-friendly and responsive, and added bookshelf functionality to make reading more convenient. In July 2023, the Digital Public Library of America (DPLA) launched the Banned Books Club to address the large number of books banned or questioned in the United States. This online resource allows readers to access books banned by local libraries. The service utilizes GPS to locate users and enables them to access banned books locally for free.

4.1.2. Knowledge Management

High-frequency keywords in this topic include knowledge management, knowledge sharing, big data, artificial intelligence, machine learning, network, etc. This reflects that library and information science focuses more on mining and discovering potential knowledge, and then effectively managing and applying it with technology. Among the high-frequency keywords, many technologies related to data management and data mining are involved, such as big data, artificial intelligence, and machine learning. In recent years, many emerging technologies have opened up new avenues for knowledge management in the library and information science field. AI artificial intelligence technology is also a major revolution for the library and information science field. With the continuous development of technology, the way enterprises acquire knowledge is gradually shifting from traditional literature to relying on emerging technologies such as big data and artificial intelligence in cyberspace. This shift means that enterprises are no longer confined to the scope of traditional literature but are accessing the necessary knowledge and information through various means in the vast world of the internet. This transformation not only enriches the avenues of knowledge acquisition but also provides enterprises with more opportunities and challenges.

Knowledge management in the library and information science field is a dynamic and diverse area, involving the management of information resources, the promotion of knowledge sharing, and the application of modern technologies. Emerging technologies such as big data, artificial intelligence, and machine learning are continuously changing the way knowledge management is conducted, enabling library and information institutions to better meet the needs and expectations of users. Networks and collaborative platforms are also driving the development of knowledge sharing and collaborative work.

The emergence of ChatGPT marks the advent of the era of large language models in artificial intelligence. For the library and information science field, artificial intelligence large language models will serve as a universal technology to promote the better development of the field and continuously change the way knowledge management is conducted. The emergence of large language models will revolutionize the way literature information is organized, shifting it from superficial surface information organization to deep semantic content organization. With the development of artificial intelligence technology, we can more accurately extract detailed knowledge objects from scientific literature, enabling information organization to delve into the internal content of literature and achieve the organization and revelation of detailed knowledge objects. The emergence of large language models will also change the way literature information services are provided, shifting from traditional information retrieval mode to a more intelligent knowledge question-answering mode. Artificial intelligence technology can understand the content of papers at the semantic level, identify detailed knowledge points, integrate literature viewpoints, construct vast knowledge networks, and thus support more intelligent knowledge services (Zhang et al., 2023).

4.1.3. Technological Innovation

The high-frequency keywords in this topic include innovation, technology, performance, impact, model, social media, word of mouth, absorptive capacity, perspective, etc. In the field of library and information science, especially in the digital age, the role of innovation has become increasingly crucial. The rapid development of technology has changed the way information is accessed, stored, and disseminated, thereby enhancing the performance level of information resources. This transformation has had profound effects on the operations and services of libraries and information institutions, forcing them to continuously adjust their business models. Social media and word of mouth disseminate information about library and information services within online communities, which is crucial for attracting users and promoting resources. Meanwhile, the ability to collect information is essential for library and information professionals so that they can continually absorb and adapt to emerging technologies and information resources, and meet user needs from different perspectives to provide better services. Therefore, the field of library and information science needs to actively pursue innovation, keep pace with the trends in technology development, to improve performance and generate greater social impact.

4.2. Prominent Word Analysis

To identify the current research frontiers in this field, this paper conducted keyword analysis, resulting in 15 highlighted terms as shown in **Figure 4**.

From Figure 4, it can be observed that since 2012, the keywords with longer highlighted years include "acceptance," "user acceptance," and "design." It is evident that the previous research focus was on the perceived usefulness of information systems, as reflected in papers concerning users' recognition of the value and acceptability of information systems, with attention to the quality of information system design and the flexibility of system functionality.

In addition, the emergence of salient words such as "big data," "machine learning," and "Science" in the past five years indicates that research in library and information science has increasingly emphasized the integration with modern technology. These represent the current research frontiers in this field. The advent of these emerging concepts and technologies, such as big data and machine learning, has had a profound impact on library and information science, reflecting the

current status and	deve	lopment	trends	of t	he	field.
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Keywords	Year	Strength	Begin	End	2012 -2022
acceptance	2012	45.06	2012	2016	
user acceptance	2012	34.33	2012	2018	
design	2012	17.06	2012	2017	
knowledge management	2012	11.27	2012	2013	
organization	2012	7.01	2013	2014	
care	2012	18.26	2014	2017	
electronic health record	2015	2.7	2015	2017	
implementation	2012	19.95	2016	2017	
perspective	2012	14.33	2017	2018	
antecedent	2013	23.77	2018	2020	
determinant	2014	10.76	2018	2020	
big data	2017	30.34	2019	2022	
machine learning	2020	66.5	2020	2022	
challenge	2020	50.52	2020	2022	
science	2020	44.86	2020	2022	

Top 15 Keywords with the Strongest Citation Bursts

Figure 4. Analysis Chart of Salient Words in the Field of Library and Information Science.

Big data technology has transformed the way information is managed and analyzed in library and information science. Libraries and information institutions can accumulate and store vast amounts of digitized information resources, from which valuable knowledge can be extracted. Big data analytics is widely applied to understand user behavior, optimize resource allocation, and improve information services.

Machine learning technology has been extensively used in library and information science. It can be applied to automated classification, information retrieval, personalized recommendations, and information filtering. Machine learning algorithms can enhance the accessibility of information resources and help users access the desired knowledge more efficiently. Specifically, the emergence of large language models, represented by ChatGPT, has further propelled the development of the intelligence field. The integration of large language models with the intelligence industry is transforming the way and processes of intelligence collection, processing, analysis, and services.

Digital technology and open access models have made a significant amount of information resources available online. Libraries and information institutions need to adapt to this trend to provide broader access to information. The open access initiative has also promoted the wider dissemination of scientific research results, contributing to the sharing and utilization of knowledge.

Information visualization tools assist users in gaining deeper understanding

and analysis of multi-source information resources. This helps library and information science convey information better. Visualization technology also contributes to the presentation and sharing of knowledge.

In summary, research in library and information science is actively responding to the challenges and opportunities of the information era, utilizing emerging technologies and concepts to enhance the management, dissemination, and utilization of information resources. Big data, machine learning, scientific information management, and digital technology are all driving innovation in library and information science to better meet the needs of users and researchers.

4.3. Foundation of Knowledge

Through the analysis of co-citation of knowledge bases, this paper delves into the essential characteristics and patterns of relevant research hotspots, gaining insight into the development direction and trends of the discipline. By utilizing the co-citation analysis feature provided by Citespace, a co-citation knowledge map of the collected literature data was generated, with the results shown in **Figure 5**. **Table 6** lists the top 10 highly cited literature, which forms the knowledge base of the field of library and information science.



Figure 5. Co-citation knowledge map of literatures.

Table 6. Classic literatures in the	international field of librar	y and information science
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ID	Citation Frequency	Centrality	Year	Literature
1	340	0.7	2014	Multivariate Data Analysis (7th edition)
2	242	0.39	2018	Qualitative Research in Education: Theories, Approaches and Practices
3	109	0.14	2018	BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding

Conti	inued			
4	100	0.35	2019	Artificial intelligence for decision making in the era of Big Data, evolution, challenges and research agenda
5	79	0.28	2018	Advances in Social Media Research: Past, Present and Future
6	77	0.79	2016	Principles and Practice of Structural Equation Modeling, Fourth Edition
7	74	0.03	2015	A new criterion for assessing discriminant validity in variance-based structural equation modeling
8	69	0.47	2019	Re-examining the Unified Theory of Acceptance and Use of Technology (UTAUT): Towards a Revised Theoretical Model
9	66	0.32	2017	Social media in marketing: A review and analysis of the existing literature
10	63	0.07	2021	Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy

From the highly cited literature, it can be observed that three papers in the top 10 (the first, fourth, and tenth papers) are related to big data and artificial intelligence. This indicates that the continuous advancement of big data and artificial intelligence is driving research and innovation in the field of library and information science. Researchers in the field can utilize large datasets to train more complex AI models, thereby continuously improving the performance of information retrieval and analysis. At the same time, the challenges in the field of library and information science have also spurred the development of new AI technologies and algorithms to address various issues in image and video processing.

5. Conclusion

This study utilized a sample of 15,570 research papers published in international journals in the field of library and information science. Employing bibliometric research methods, it comprehensively analyzed and demonstrated the research hotspots and frontiers in journals of library and information science over the past decade. Through bibliometric analysis, data statistics were conducted on the volume of literature, authors, and prolific institutions in this field. Additionally, utilizing relevant literature analysis software, the study performed content analysis from three aspects: research hotspots, highlighted terms, and knowledge bases, and derived the following research conclusions.

Firstly, in terms of publication volume, the number of publications in the field of library and information science has shown a generally upward trend over the past decade, indicating widespread attention from researchers in this field. This study analyzed scholars with significant influence in the field of library and information science from two key perspectives: publication volume and citation frequency. These scholars have not only promoted the development and progress of the field but also to some extent, led the direction and trends of future research in library and information science. Regarding prolific institutions in the field of library and information science, they are mainly from universities in the United States, with only one institution from China. This suggests that there is still a certain gap between the research level of library and information science in China and the international leading level. It is recommended that domestic scholars enhance international exchanges and collaborate with top research institutions abroad in the future.

Secondly, through research hotspot analysis, three research themes in the field of library and information science were summarized: information services, knowledge management, and technological innovation. Through the analysis of research frontiers, it was found that with the continuous development of information technology and the changing information environment, the research themes in library and information science have also undergone changes. They have shifted from traditional research focusing on user experience in information services to research on new knowledge services. Big data, machine learning, scientific information management, and digital technology have become the research frontiers in the field of library and information science.

Finally, this study conducted in-depth analysis of classic literature in the field, which is closely related to the current research hotspots, providing important references and guidance for research directions in this field. Simultaneously, it was found from classic literature that big data and artificial intelligence are current research hotspots, continuously driving research and innovation in the field of library and information science.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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