# Analysis of the Development of Library and Information Science in China Based on Bibliometrics

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## Abstract

**On the basis of massive literature data, the paper makes statistical analysis on the publication time, publication journal, author, author institution and the topic content of the paper, and uses VOSviewer software technology to visualize the development path and key concepts of library and information science. Explore the future development direction of library and information science and make a certain prediction for the trend of the subject.**

## Keywords

**Bibliometric analysis; Library and information science; Is the software; Visual analysis.**

## 1. Introduction

At present, the term LIS (Library and Information science) has been widely used in academic circles and widely recognized by scholars .Since the 1980s, scholars began to write academic papers with the keywords of "Library and Information Management", "Library and Information Integration" and LIS. Many institutions and universities also named their journals as "Library and Information", such as modern Library and Information Technology (NTL for short) founded by LSE. Jiangsu University established the journal Of Library and Information Research, and Wuhan University established the journal of Library and Information Knowledge (DIK for short), thus further strengthening the relationship between library book resource management and information science. [1]. The new national security strategy, economic and social environment and the development of new technology promote the expansion and deepening of the research object of information science in China. Based on the data set of the representative journals of library and information science in China, this paper focuses on scanning and tracking the research hot spots and new trends in the field of library and information science from 2010 to 2020 by using bibliometric analysis and visualization methods. The retrieval time is March 2021, so as to make a certain prediction of the discipline trend.

## 2. Data Sources and Retrieval Methods

The data selected for this study come from CNKI database and are searched professionally. The search formula is as follows: SU=' Library and Information Science 'OR KY=' Library and Information Science' a total of 1198 records were obtained, and the retrieval period was from January 2011 to March 2021.the above bibliographic information was stored in EndNote for further screening. Only the representative journals in the field of library and information science in China as shown in Table 1 were retained as data sources. , deleted "Preface", "He Letter", "Guide to Topic Selection" and other meaningless literature, and finally retrieved 894 bibliography.
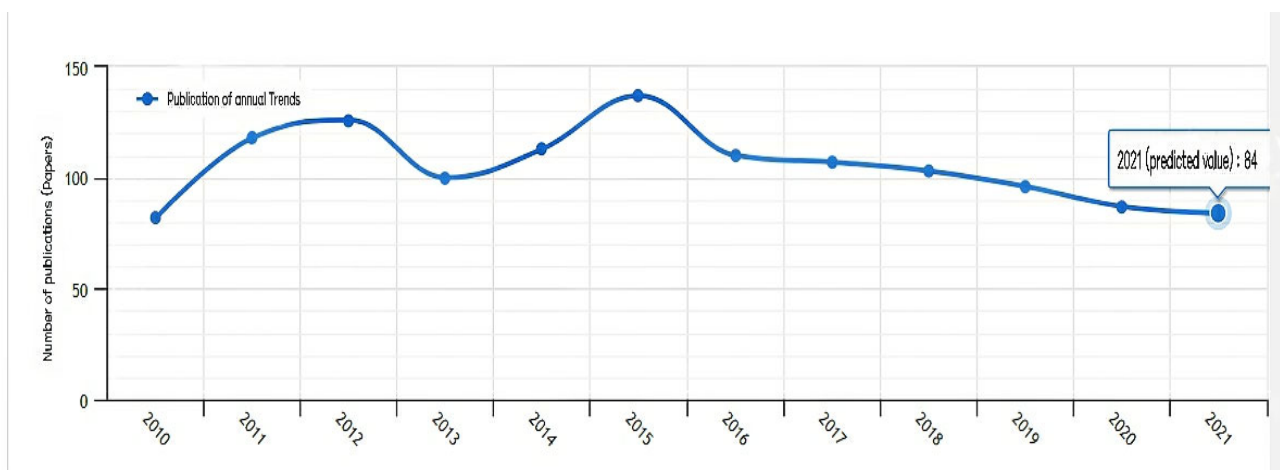
**Table 1.** Representative journals in the field of library and information science in China

| serial number | Journal name |
|---|---|
| 1 | 《Library and Information Work》 |
| 2 | 《Journal of Library science in China》 |
| 3 | 《Information Theory and Practice》 |
| 4 | 《Information Work》 |
| 5 | 《Information Science》 |
| 6 | 《Journal of Information Science》 |
| 7 | 《Library and Information Knowledge》 |
| 8 | 《Library Science Research》 |
| 9 | 《Intelligence Journal》 |
| 10 | 《Books and Information》 |

## 3. Quantitative Visualization Data Analysis

### 3.1. Overall Trend Analysis

As can be seen from Figure 1, the number of research literatures in the field of library and information science in China showed an upward trend from 2010 to 2012 and 2014 to 2015, but it was still relatively flat in the past ten years. Currently, there is not enough attention paid to the theory of library and information science.



**Figure 1.** Literature publication year trend chart (incomplete statistics in 2021)

### 3.2. Distribution of Research Institutions

As shown in Figure 2, the main force of library and information science related institutions in the past ten years is still outstanding universities in related majors. The number of postgraduate entrance exams in this discipline has been increasing year by year, and more and more students have devoted themselves to the research of library and information science. Teaching resources are relatively scattered, there are more schools, and the educational resources are more equal, which is conducive to the balance of visual research development in different regions of China. [2]
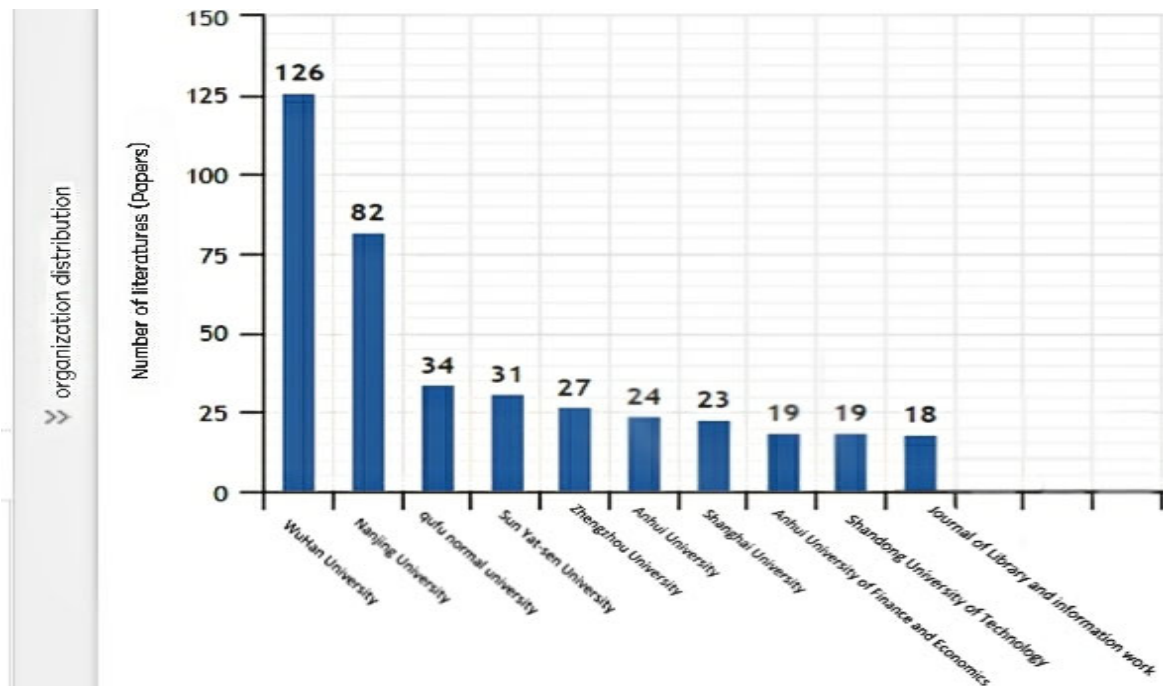
**Figure 2.** Distribution of research institutions

## 3.3. Analysis of Author Publications

A total of 894 papers were collected in this study, and the main distribution of authors in this field in China can be roughly understood through the analysis of researchers. Table 2 shows that the top ten authors published 121 papers in total, four of which were from Wuhan University. It can be seen that Wuhan University pays more attention to the number of published papers and pictures than other universities. On the whole, the number of Chinese authors' publications needs to be strengthened, so as to facilitate the reference of literature in the later period and the study of Chinese library and information science.

**Table 2.** Statistics of author publications

| serial number | author | Number of publications/articles | organization |
|---|---|---|---|
| 1 | R.Y.Zhao | 17 | Wuhan university. |
| 2 | C.L.Li | 16 | Shandong University of Technology |
| 3 | X.M.Xiao | 15 | Wuhan university. |
| 4 | J.P.Qiu | 13 | Wuhan university. |
| 5 | R.B.Wei | 12 | Anhui University of Finance and Economics |
| 6 | X.X.Li | 12 | Qufu Normal University |
| 7 | W.N.Hua | 11 | Nanjing university, |
| 8 | L.Si | 9 | Wuhan university. |
| 9 | J.J.Sun | 8 | Nanjing university |
| 10 | X.F.Ma | 8 | Qufu Normal University |

## 3.4. Analysis of Discipline Distribution

From the graph, it can be seen that the top three disciplines in the research and analysis of library and information science are library and information and digital library, higher education, and publishing. The proportion of library information and digital library is as high as 77.88%. All walks of life pay more and more attention to data analysis ability. Although they are still not perfect and mature, there are many innovative ideas and viewpoints among them, which can serve as a new starting point for further exploration. Some scholars analyze the interdisciplinary characteristics and rules of knowledge diffusion between different disciplines through the perspective of citation [3]. But the information science method needs to integrate

The Times and the actual demand, and derive a new information method system to guide the application and practice of information. [4]
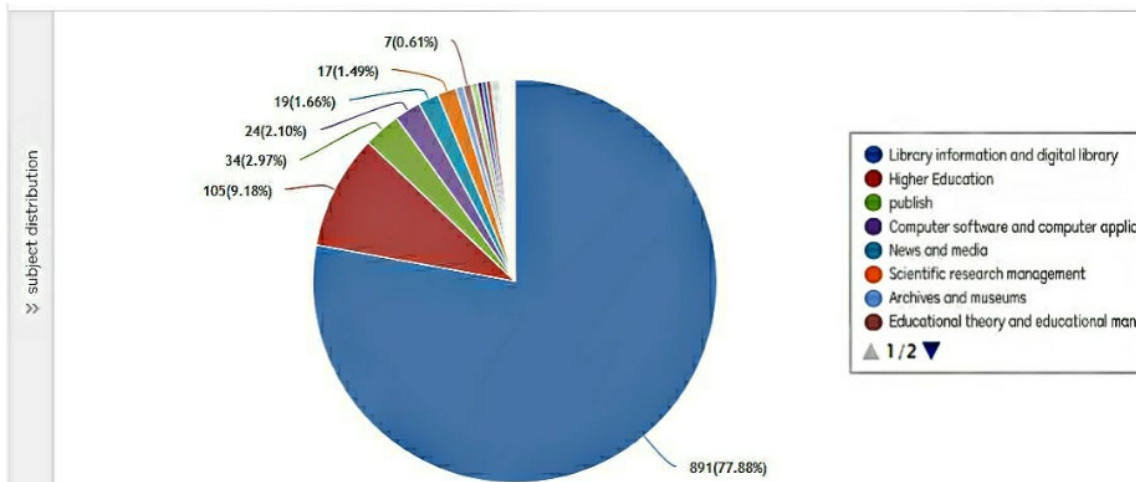


**Figure 3.** Disciplinary distribution

## 3.5. Analyze Key Words

Keywords co-occurrence analysis method is a direct statistics of the current published literature, looking for the topics that the current papers focus on and reflecting the focus and hot spots after the formation of trends [5]. In this study, EndNote was used to transform the format of the screened data, and then VOSviewer software was used for keyword clustering analysis. As can be seen from the figure, bibliometrics is the main research method of information science, focusing on the quantitative study of literature by using mathematical or statistical methods to analyze the rules or complete certain evaluation. Now in the era of big data, due to the amount of information and are extremely to develop in the direction of unstructured, literature metrology method and knowledge map, word analysis, research hotspots, visualization, cluster analysis, strategic coordinate analysis, theme analysis combined with the increasingly close, use different ways to cross, complement each other, the development of intelligence research method fusion, application is more and more rich. [6]
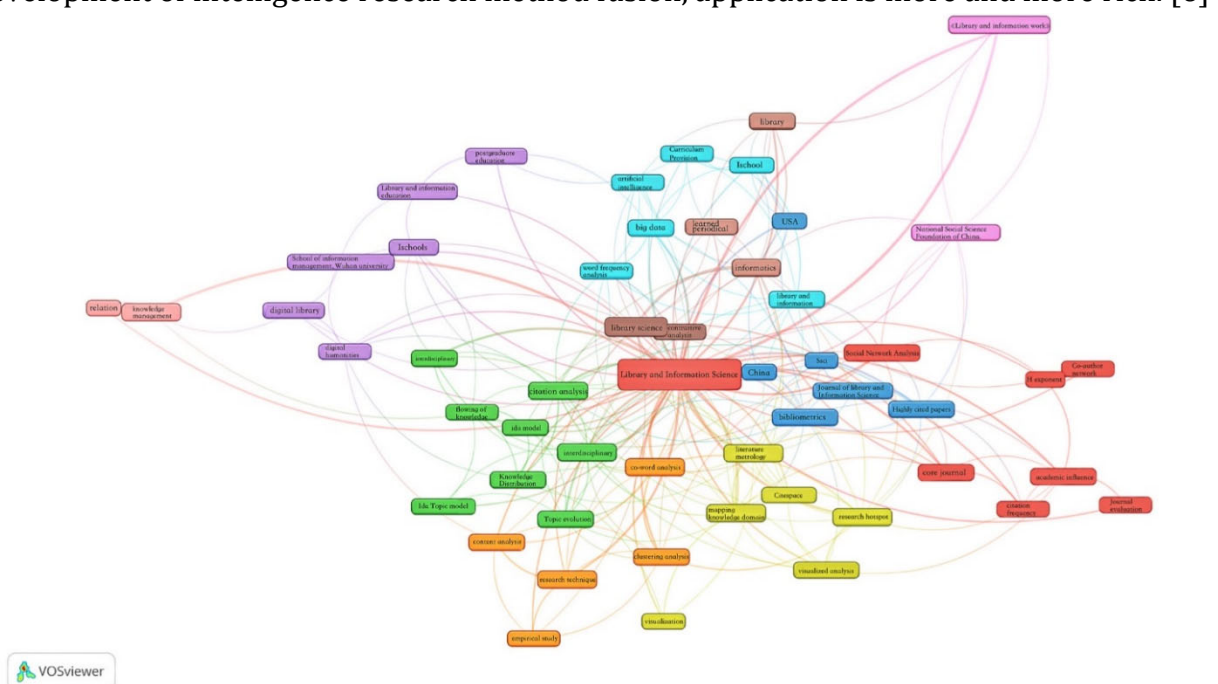


**Figure 4.** Analysis chart of keywords co-occurrence in information science

# 4. Conclusion

Library and information is a compound subject, its core is information. The theme of LIS relies on library as knowledge platform and information hub, with data technology as the technical core and library science, information science and communication theory as auxiliary tools, radiating to related fields. How to better organize and manage the data and coordinate with the big data era is a popular research point of library and information, which is more focused on conceptual and theoretical research. We can make full use of "Internet +" to carry out online platform communication and make good cross-application with other disciplines. The library and information science method needs to combine with The Times and actual needs, and derive a new method system to guide the application and practice activities.

# Acknowledgments

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