# Postprint: Comparative Analysis of Publication Characteristics and Development Trends of "Modern Library and Information Technology" over the Past Decade

**Authors:** Wang Yuefen, Jin Jialin

**Date:** 2017-11-08T00:00:00+00:00

## Abstract

【Objective】 By examining the publication characteristics of *New Technology of Library and Information Service* over the past decade, this study analyzes its distinctive features and development trends to provide recommendations for future advancement.

【Method】 Literature from the past ten years was retrieved from *New Technology of Library and Information Service* and comparable journals in the CNKI, Wanfang, and WOS databases, followed by a comparative analysis of both external and internal publication attributes.

【Results】 Compared with other journals, *New Technology of Library and Information Service* exhibits distinct characteristics, with its published research papers on technical methodologies providing significant support to the library and information science field.

【Limitations】 Topics were derived solely from keyword analysis without utilizing full-text documents as the basis.

【Conclusion】 Amidst the wave of information technology-driven research, *New Technology of Library and Information Service* should maintain its distinctive characteristics, seize existing opportunities, preserve its advantages in library and information technology research, and promote the development of both research and application in this domain.

## Full Text

## Preamble

### Characteristics and Development Trends of Papers from *New Technology of Library and Information Service* Over the Past Decade

Wang Yuefen, Jin Jialin
School of Economics and Management, Nanjing University of Science & Technology, Nanjing 210094

## Abstract

[**Objective**] This study analyzes the characteristics and development trends of papers published in *New Technology of Library and Information Service* over the past 10 years to provide recommendations for its future development. [**Methods**] We retrieved literature from *New Technology of Library and Information Service* and similar journals from CNKI, Wanfang Data, and Web of Science databases over the past decade, comparing both external and internal characteristics of the publications. [**Results**] Compared with other journals, *New Technology of Library and Information Service* exhibits distinct features, with its technology-oriented research papers providing significant support to the library and information science field. [**Limitations**] Themes were determined solely through keyword analysis rather than based on full-text content. [**Conclusions**] Amid the research boom driven by information technology, *New Technology of Library and Information Service* should maintain its unique characteristics, seize existing opportunities, preserve its advantages in library and information technology research, and promote the development of library and information technology research and applications.

**Keywords:** *New Technology of Library and Information Service*; Publication comparison; Characteristic analysis; Co-occurrence analysis; Social network analysis; Topic evolution

**Classification Number:** G350

Academic journals serve as platforms for academic communities to exchange new knowledge. As a representative journal in the library and information science field, analyzing the publication characteristics of *New Technology of Library and Information Service* in recent years and comparing it with other journals can accurately grasp its positioning and distinctive features, providing reliable recommendations for exploring its future development path.

In recent years, few studies have examined the publication characteristics of *New Technology of Library and Information Service*. In 2013, Zhao Jian analyzed its publication patterns from 1998-2010 using scientific knowledge mapping, examining author collaboration, institutional cooperation, journal co-citation, document co-citation, and keywords as indicators. In 2008, Bai Yun et al. analyzed

its academic influence through publication and citation characteristics, selecting four indicators: proportion of papers in the discipline, funded papers, geographical distribution, and international papers. In 2006, He Jing analyzed its 2002-2004 publications from three perspectives: project funding, author statistics, and citation analysis. In 2007, Zhu Xiaoshi conducted a comparative study between *New Technology of Library and Information Service* and *Computer Engineering and Applications* from citation and content analysis perspectives.

Comparison not only helps organize individual cases but also identifies similarities, differences, and features among several comparable entities. Therefore, this paper examines both external and internal characteristics of publications in *New Technology of Library and Information Service* and conducts comparative analysis with similar domestic and international journals in the library and information science field to help the journal clarify its development status and future direction.

## 2 Data Sources and Processing

Using CNKI as the data source, we limited the timeframe to January 1, 2006, to December 31, 2015, with exact journal title matching. We employed three retrieval strategies: First, we retrieved all literature from nine journals over the past decade: *New Technology of Library and Information Service*, *Information Science*, *Information Theory and Practice*, *Library and Information Service*, *Information and Documentation Services*, *Library and Information*, *Knowledge of Library and Information Science*, *Journal of Intelligence*, and *Modern Information*. We downloaded bibliographic information including titles, institutions, years, funding sources, and keywords for all papers to conduct comparative analysis of external characteristics such as publication timing, funding, institutions, and disciplines, as well as keyword hotspot analysis. We also downloaded author and keyword information from all literature in *New Technology of Library and Information Service* for author group analysis, research hotspot co-occurrence, and topic evolution analysis. Second, we retrieved the top 100 cited and top 100 downloaded papers from each journal, downloading bibliographic information including abstracts to compare content category characteristics of highly cited and highly downloaded literature. Third, we retrieved the top 500 cited and top 500 downloaded papers from each journal, downloading bibliographic information containing keywords to compare internal characteristics from an academic influence perspective.

Using Wanfang Data as the source for 2006-2015, with exact journal title matching, we retrieved all literature from *Digital Library Forum* over the past decade, extracting publication numbers and keywords for comparison with similar periodicals.

Using Web of Science as the data source, we selected the Web of Science Core Collection database, targeting publications *Information Processing & Management* (IP&M) and *Journal of the Association for Information Science and Tech-*

*nology* (JASIST) for 2006-2015, retrieving all literature for comparison with similar Chinese and foreign journals.

Data processing involved four steps: (1) We conducted statistics on all literature to obtain annual publication numbers for each journal (excluding all promotional articles, announcements, directories, and indexes), counts of funded papers, author contributions, institutional contributions, and disciplinary distribution, as well as keyword counts. (2) We manually classified overlapping papers among the top 100 cited and top 100 downloaded literature to obtain distribution characteristics of content categories. (3) We compiled keywords from all literature and the top 500 cited/downloaded papers, creating keyword hotspot distribution maps based on frequency. (4) We used CiteSpace III to generate author co-occurrence networks, keyword co-occurrence networks, and keyword temporal evolution maps, and used NEViewer 1.5 to create topic evolution maps based on co-word temporal networks.

## 3.1 Temporal Distribution

Table 1 and Figure 1 [Figure 1: see original paper] show the total publication volumes and temporal distribution of papers from 2006 to 2015 for ten journals indexed by CNKI: *New Technology of Library and Information Service*, *Information Science*, *Information Theory and Practice*, *Library and Information Service*, *Information and Documentation Services*, *Library and Information*, *Knowledge of Library and Information Science*, *Journal of Intelligence*, *Modern Information*, and *Digital Library Forum*. Although *Digital Library Forum* is only indexed in Wanfang Data, its similarity to *New Technology of Library and Information Service* warranted its inclusion in the comparative analysis.

Statistical analysis reveals that *New Technology of Library and Information Service* published 1,941 papers over the past decade. Compared with other journals, it shows stable publication fluctuations similar to *Information Science* and *Information and Documentation Services*. In contrast, *Library and Information Service*, *Information Theory and Practice*, and *Journal of Intelligence* exhibit significant publication fluctuations. Regarding publication cycles and page counts, *Information Theory and Practice* switched from bimonthly to monthly in 2009, and *Library and Information Service* changed from monthly to semimonthly, causing substantial increases in their 2009 publication volumes. *Knowledge of Library and Information Science* and *Journal of Intelligence* increased their page counts by 20-40 pages compared to 2006-2008, leading to a 200-paper surge for *Journal of Intelligence* in 2009. Conversely, *Modern Information* reduced its page count by 50 pages starting in 2010, resulting in a noticeable decline in publication volume.

Comparison with other journals shows that although *New Technology of Library and Information Service* does not have a publication quantity advantage, it has maintained stable development. As information technology permeates all aspects of research and practice in library and information science, particularly

with the increasing demand for various data/information processing and analysis technologies and tools in the big data era, more scholars are choosing to conduct in-depth research combining multiple technologies or theories. This has led to a continuous emergence of relevant research results in the library and information science field, providing robust support for the journal' s manuscript sources.

## 3.2 Funding Distribution

According to statistical data from 2006 to 2015, papers in *New Technology of Library and Information Service* received support from 39 funding sources, the same as seven other journals except *Knowledge of Library and Information Science*. However, the proportion of support from different funds varies among journals. Using CNKI data and sorting by funding amount, with a cumulative support proportion $ $80% as the criterion, we compiled statistics on funding support for *New Technology of Library and Information Service* over the past decade and their proportions (Table 2 ), as well as funding for the other eight journals (Table 3 ).

Tables 2 and 3 show that all journals receive the highest funding from the National Natural Science Foundation of China and the National Social Science Foundation of China. *Knowledge of Library and Information Science* has the highest proportion of these two funds, while *Modern Information* has the lowest. *New Technology of Library and Information Service*, *Information Science*, and *Journal of Intelligence* have higher proportions of National Natural Science Foundation support, while other journals have higher proportions of National Social Science Foundation support. Additionally, at the national level, *New Technology of Library and Information Service* has significantly higher proportions of papers supported by the National Key Technology Support Program and the National High Technology Research and Development Program (863 Program) compared to other journals, while also receiving substantial support from Beijing municipal government and Chinese Academy of Sciences funds. This reflects from the funding perspective that *New Technology of Library and Information Service* has broad funding coverage for its published papers, while also demonstrating clear advantages in technology and methodology aspects of research content.

## 3.3 Author Group Distribution

The National Key Technology Support Program, National High Technology Research and Development Program, and China Postdoctoral Science Foundation provide substantial support. At the regional level, Jiangsu Province and Beijing Municipality offer significant support in the library and information science field. Compared with other journals, we conducted a co-occurrence analysis of authors in *New Technology of Library and Information Service*, resulting in the author co-occurrence network shown in Figure 2 [Figure 2: see original paper] (due to space limitations, no comparative analysis of author groups was performed).

Figure 2 [Figure 2: see original paper] reveals three distribution patterns among high-productivity authors: (1) Strong collaborative relationships among high-productivity authors, with large cooperative groups and high publication volumes. Representative figures include Zhang Zhixiong, Wu Zhenxin, Li Chunwang, and Zhang Xiaolin. These four authors not only have high publication numbers and substantive direct collaborations but also form a closely connected group. In their collaborative networks, other authors with direct cooperation also have relatively high publication volumes, such as Xu Jian (16 papers), Liu Jianhua (16 papers), Gu Liping (15 papers), Qian Li (13 papers), Xie Jing (13 papers), Li Yu (12 papers), and Li Shuning (11 papers). (2) High-productivity authors as core figures, with limited group members and certain connections to other collaborative groups. Representative figures include Zhu Zhongming, Lü Xueqiang, Su Xinning, Wang Huilin, Qiao Xiaodong, and Zhang Chengzhi. Although their cooperative groups have no direct connection with Zhang Zhixiong' s group in the network, indirect associations are established through other authors due to overlapping research content. Some authors also have direct collaborations between these groups, such as Su Xinning with Zhang Chengzhi, Wang Huilin with Zhang Chengzhi, and Wang Huilin with Qiao Xiaodong. (3) High-productivity authors as core figures, with small cooperative groups that are not connected to other author groups in the network. Representative figures include Bi Qiang, Xu Xin, and Ma Ziwei, each forming relatively independent cooperative groups focused on their own teams for academic paper publication.

Additionally, the distribution in the collaboration network shows that most high-productivity authors are senior scholars. Therefore, besides continuing to support these established authors, particular attention should be paid to young scholars who collaborate with them. If *New Technology of Library and Information Service* can continuously track the research status of young scholars through its collaboration network, it can not only make them core contributors but also expand its influence through their growth and promote development in the field.

## 3.4 Institutional Distribution

Statistical analysis of publishing institutions yields the top 10 institutions by publication volume over the past decade, shown in Table 4 and Table 5 (to avoid statistical dispersion, papers from the National Science Library of Chinese Academy of Sciences and the Documentation and Information Center of Chinese Academy of Sciences were combined).

Table 4 shows that *New Technology of Library and Information Service* has high publication volumes from various comprehensive universities, with similarly high volumes from the Chinese Academy of Sciences and science and engineering universities—a pattern only matched by *Journal of Intelligence*. Compared with comprehensive universities, science and engineering universities have relative advantages in more in-depth technology research, reflecting *New Technology of Library and Information Service*' s different focus from other journals and

demonstrating its leading role in technology within the library and information science field.

The statistical results reveal a common phenomenon of geographical or institutional attributes in institutional publication volumes. If a journal' s sponsor belongs to a particular unit or province, it can bring high publication volumes to that unit or province. For example, *New Technology of Library and Information Service* and *Library and Information Service* are sponsored by the Documentation and Information Center of Chinese Academy of Sciences, *Information Science* by Jilin University, *Modern Information* by Jilin Province, and *Knowledge of Library and Information Science* by Wuhan University, resulting in high publication volumes from corresponding regional institutions.

The data also show that major publishing institutions across all journals are universities and libraries, with Wuhan University and Nanjing University appearing in all rankings—Wuhan University consistently in the top three and Nanjing University in the top five—demonstrating their strong academic research capabilities in library and information science.

## 3.5 Disciplinary Distribution

The nine journals retrieved from CNKI involve 41 disciplines. Statistics for the top 10 disciplines by publication volume are shown in Tables 6 and 7 . Table 6 indicates that the top 10 disciplines for *New Technology of Library and Information Service* are: Library and Digital Library Science; Computer Software and Applications; Internet Technology; Journalism and Media; Automation Technology; Scientific Research Management; Computer Hardware Technology; Macroeconomic Management and Sustainable Development; Enterprise Economics; and Information Economy and Postal Services.

Comparing Tables 6 and 7 reveals that overall, all journals' top four disciplines include "Library and Digital Library Science," "Computer Software and Applications," and "Journalism and Media." Except for *Journal of Intelligence*, the cumulative proportion of these three disciplines exceeds 60%, reaching over 80% for *New Technology of Library and Information Service* and *Information and Documentation Services*. This distribution shows that these nine journals are rooted in "Library and Digital Library Science" while closely intersecting with "Computer Software and Applications" and "Journalism and Media." Individually, *New Technology of Library and Information Service* has significantly higher proportions of "Computer Software and Applications" (36.55%) and "Internet Technology" (5.89%) than other journals, highlighting its distinct technical characteristics.

## 3.6 Distribution of Highly Cited and Highly Downloaded Papers and Their Content Category Characteristics

Citation and download counts represent two indicators of a paper' s post-publication impact and attention. We separately counted highly cited and highly downloaded literature from each journal and their publication year distributions, calculated the overlapping portions, and classified the content categories of these overlapping papers to identify usage patterns and differences among readers. Table 8 shows the basic distribution of top 100 cited and top 100 downloaded papers across the nine journals.

The data reveal that *New Technology of Library and Information Service* has a maximum citation count of 235 and maximum download count of 4,194. Its maximum citation count ranks relatively high among the nine journals, while its top 100 total citation count ranks medium. Its maximum download count and top 100 total download count rank lower. Among overlapping papers in the top 100 cited and top 100 downloaded, *New Technology of Library and Information Service* has 64 papers appearing in both lists—the highest among the nine journals—followed by *Journal of Intelligence* with 62 papers, while all others have fewer than 60.

Figure 3 [Figure 3: see original paper] shows the publication year distribution of top 100 cited and top 100 downloaded papers. Analysis reveals that in top 100 cited papers across journals, annual publication numbers generally decrease over time, with only *Library and Information* and *Journal of Intelligence* showing slight increases around 2011. In contrast, top 100 downloaded papers show an initial increase followed by a decrease, consistent with general patterns of high citations and downloads.

We then extracted overlapping papers from the top 100 cited and top 100 downloaded lists, manually classified them, and obtained the results shown in Table 9 . Based on the discipline' s research characteristics and abstract information, we divided overlapping papers into four categories: Business Research, Technology Application Research, Basic Theory and Problem Research, and Review/Commentary. Business Research includes model/process construction, implementation, and empirical studies. Technology Application Research includes specific applications of certain technical methods. Basic Theory and Problem Research includes theoretical studies and discussions of principles, systems, or hot topics. Review/Commentary includes research progress reviews and evaluations. Classification prioritized titles, supplemented by abstracts. For example, papers like "Theoretical Model and Empirical Study on Microblog Users' Continuous Usage Intention" were classified as Business Research, while "Research on Tag Clustering Based on Agglomerative Hierarchical Clustering Algorithm" became Technology Application Research, and "The Future of Digital Libraries —Post-Digital Library Era" was categorized as Basic Theory and Problem Research.

Table 9 shows that among overlapping highly cited and highly downloaded pa-

pers, *New Technology of Library and Information Service* demonstrates distinct usage patterns, ranking first in both influence and attention for Business Research and Technology Application Research papers. Business Research accounts for 20.3% and Technology Application Research for 32.8%, far exceeding corresponding proportions in other journals. However, it lags behind other journals in Basic Theory and Problem Research. Further examination of Business Research papers reveals that those utilized in *New Technology of Library and Information Service* mostly involve model construction, code development, and system implementation, while other journals focus more on case analysis and empirical studies.

## 4.1 Comparative Analysis of Keyword Hotspots

We created visualizations from processed keyword data based on frequency to intuitively examine research hotspots across journals, as shown in Figure 4 [Figure 4: see original paper].

Figure 4 [Figure 4: see original paper] shows that most journals focus on research and business activities of concern in library and information science, with high-frequency keywords generally having broad scopes, such as library, knowledge management, university library, competitive intelligence, and digital library. In contrast, *New Technology of Library and Information Service* and *Digital Library Forum* have more high-frequency keywords related to technical categories, such as metadata, ontology, data mining, knowledge organization, search engine, information retrieval, and big data. Closer comparison reveals that *New Technology of Library and Information Service*' s high-frequency keywords mainly cover specific technical applications, such as domain ontology, text classification, institutional repository, concept lattice, feature selection, open source software, collaborative filtering, conditional random fields, semantic similarity, and semantic annotation, showing clearly refined research granularity and strong technical operability and applicability.

## 4.2 Keyword Co-occurrence Network Distribution

Over the past decade, *New Technology of Library and Information Service* published 1,941 papers involving 283 keywords with a total frequency of 2,127 occurrences. The keyword co-occurrence network is shown in Figure 5 [Figure 5: see original paper].

Overall, the keyword co-occurrence network forms clusters covering four main aspects: data/information representation and association, data/information storage and retrieval, data/information processing and analysis, and data/information productization and application. The research hotspots focus on digital libraries as the core, forming distinct research emphases: data/information representation and association emphasizes ontology, domain ontology, text classification, linked data, and semantic web; storage and retrieval emphasizes metadata, knowledge organization, knowledge base,

information retrieval, and search engines; processing and analysis emphasizes information extraction, feature selection, data mining, collaborative filtering, and concept lattice; productization and application emphasizes institutional repositories, open source software, visualization, and libraries.

The network structure also shows that most research hotspot nodes have direct connections, with a few indirectly linked through other nodes. In other words, any two nodes among these research hotspots can be reached within two steps, indicating close connections among research hotspots, high systematicity, and strong concentration. For instance, digital library, information retrieval, information extraction, data mining, institutional repository, and open source software serve as central nodes, forming not only individual research hotspot domains but also closely connected networks through links with other hotspots, systematically reflecting current technical research in library and information science.

## 4.3 Comparative Analysis of Research Hotspot Co-occurrence Based on Academic Influence

Building on keyword hotspot analysis, we examined hotspot co-occurrence from an academic influence perspective to further compare differences among journals. To simplify data processing, we selected top 500 cited and top 500 downloaded papers from each journal to create keyword co-occurrence networks.

Figure 6 [Figure 6: see original paper] shows keyword co-occurrence networks for top 500 cited papers. *New Technology of Library and Information Service*' s academically influential research hotspots include digital library, search engine, information retrieval, knowledge management, institutional repository, linked data, semantic web, open source software, semantic retrieval, cloud computing, and social network analysis. Research on retrieval, organization, and storage are closely interconnected, while social network analysis research remains relatively independent. *Journal of Intelligence* and *Information Science* show similar influential hotspots including knowledge management, digital library, and cloud computing. Other journals' academically influential hotspots mainly focus on library, university library, information service, and knowledge service. The keyword co-occurrence networks based on academic influence demonstrate that *New Technology of Library and Information Service* has significantly different academic impact and reader attention compared with other journals.

Figure 7 [Figure 7: see original paper] shows keyword co-occurrence networks for top 500 downloaded papers. Compared with citations, *New Technology of Library and Information Service*' s downloaded papers show more dispersed research hotspots. Besides the aforementioned areas, data mining, text mining, patent analysis, DSpace, interoperability, citation analysis, mobile library, and Hadoop have become hotspots. Patent analysis and text mining form relatively independent research systems, DSpace connects with institutional repositories, and semantic web research closely links with information retrieval and linked

data. Unlike highly cited papers, social network analysis is no longer independent but connects with search engines, co-word analysis, citation analysis, and semantic web research within the network. *Journal of Intelligence*' s attention hotspots remain concentrated on knowledge management and network public opinion, *Information Science* on knowledge management and e-commerce, and *Information Theory and Practice* on library, knowledge management, competitive intelligence, big data, and cloud computing. Other journals also show more dispersed attention compared with citations, though concentrated hotspots remain largely unchanged.

## 4.4 Research Topic Evolution Analysis

To dynamically understand the evolution of research topics in *New Technology of Library and Information Service* over the decade, we created temporal keyword co-occurrence networks, keyword hotspot maps, and research topic evolution diagrams. Figure 8 [Figure 8: see original paper] shows keyword co-occurrence networks using two-year time slices. Compared with overall research, digital library studies have gradually declined, and by 2014-2015, digital library was no longer a research hotspot, replaced by various technology studies. The network structure shows decreased centrality, weakened hotspot clustering, and increased dispersion and diversification. Diversified technology research meets researchers' needs for solving various problems in big data environments and marks the gradual transition from theoretical research to application.

Figure 9 [Figure 9: see original paper] shows the evolution of keyword hotspots. Research hotspots have become increasingly specific and in-depth. For example, 2006 hotspots like digital library, information retrieval, information extraction, and knowledge organization covered broad scopes, but around 2010, they shifted to specific technical hotspots such as linked data, institutional repository, concept lattice, feature selection, similarity calculation, log mining, and integration. Big data research emerged in 2011, driving public opinion to become a 2013 hotspot. Early research on complex networks, data mining, and knowledge organization evolved into current hotspots like data collection, topic models, sentiment analysis, and knowledge services. By 2015, research hotspots had become highly specific, transitioning from broad frameworks to operable concrete technologies with increasingly refined granularity.

Figure 10 [Figure 10: see original paper] shows the research hotspot topic evolution map created using NEViewer 1.5 based on co-word temporal networks. Over time, research topics have multiplied, with most topics experiencing differentiation and reintegration, reflecting diversification in library and information science research and continuous integration in technical fields. In Figure 10, block size reflects topic vocabulary scale (larger blocks indicate more vocabulary), and block position reflects research popularity (higher positions indicate hotter topics). Before 2010, popular research focused on foundational and theoretical studies in library and information science. Since 2012, foundational and theoretical research is no longer the focus, with various specific technol-

ogy studies emerging. For example, "library" and "resource integration" from 2006-2007 merged into "library" in 2008-2009, then differentiated into "institutional repository" and "e-government" in 2010-2011. "Resource integration" from 2006-2007 differentiated into "library," "mobile library," "digital library," and "RDF" in 2008-2009. "Digital library," after merging with "resource integration" and "mobile library," differentiated into "cloud computing" and "feature selection" in 2012-2013. Similarly, "search engine" evolved toward "ontology base," "information retrieval," and "text mining."

## 5.1 IP&M Publication Temporal Distribution and Research Hotspots

**(1) Temporal Distribution**

Figure 11 [Figure 11: see original paper] shows the annual publication distribution of *Information Processing & Management* (IP&M) from 2006 to 2015. Statistical analysis reveals that IP&M published 875 papers during this period, peaking at 141 papers in 2007. Compared with pre-2007 levels, recent publication numbers have declined but remained stable after the decrease.

**(2) Research Hotspot Analysis**

Figure 12 [Figure 12: see original paper] presents a word cloud and keyword co-occurrence network generated from IP&M keyword frequencies. The figure shows that information retrieval is the largest research hotspot in IP&M. Additionally, user behavior analysis, modeling, text mining algorithms, text classification, ontology, semantic analysis, citation analysis, Web, question-answering systems, and recommendation systems are also research hotspots.

## 5.2 JASIST Publication Temporal Distribution and Research Hotspots

**(1) Temporal Distribution**

Web of Science only contains data for *Journal of the Association for Information Science and Technology* (JASIST) for 2014 (215 papers) and 2015 (216 papers), totaling 431 papers. Based on these two years, publication volume appears stable.

**(2) Research Hotspot Analysis**

Figure 13 [Figure 13: see original paper] shows a word cloud and keyword co-occurrence network from JASIST keyword frequencies. The analysis indicates that JASIST, similar to IP&M, focuses on information retrieval and user behavior analysis. Additionally, scientific impact factors, scientific indicators, scientific communication, informetrics, and citation analysis are also hot topics.

## 5.3 Comparison with IP&M and JASIST

In terms of temporal distribution, the technology-focused IP&M has relatively low but stable publication volume, similar to *New Technology of Library and*

*Information Service*. Since JASIST only has two years of data in the SCI source, quantitative comparison is impossible.

Regarding research hotspot distribution, IP&M and JASIST concentrate on information retrieval, with hotspot keywords including Retrieval, Seeking, Information Retrieval, and Information Seeking. In comparison, *New Technology of Library and Information Service* shows greater similarity to IP&M, being technology-focused and covering major technical aspects of data/information processing and management. However, information retrieval is only one of several key focuses for *New Technology of Library and Information Service*. Domestic research on and demand for technology are more diversified, better aligned with the networked and digital development path of academic research and business activities in China' s library and information science field, and playing a leading and guiding role in addressing domestic challenges.

## 6 Conclusions and Recommendations

This paper conducted a series of comparative analyses on publication data from 2006 to 2015 for *New Technology of Library and Information Service* and 11 related domestic and international journals. The analysis reveals that *New Technology of Library and Information Service* demonstrates strong academic foresight and leadership in research direction, gradually becoming more specific and in-depth in content, with distinctive features in technology research and application, closely following the needs of academia and business activities while continuously tracking scientific development trends. Therefore, *New Technology of Library and Information Service* should maintain its advantages, seize current opportunities, and continue to play an important role in academic communication to promote the development of library and information science technology research and applications. Based on these findings, we propose the following recommendations:

(1) **In topic selection and review direction:** Leverage the journal's advantages in library and information technology research to deepen guidance on technology, tool, and methodology application studies in the big data context, giving priority to publishing specific technical or methodological applications.

(2) **In manuscript organization and special issue solicitation:** Fully utilize the academic research capabilities and network effects of high-productivity authors and institutions to establish proactive and continuous tracking and solicitation mechanisms based on collaborator groups, ensuring timely and systematic dissemination of their research findings.

(3) **In evaluating and utilizing dissemination effectiveness:** Track the academic communication impact of published papers based on academic influence and reader attention, understanding reader preferences. Design several reference categories for paper acceptance that highlight the journal' s characteristics, and select relevant research papers based on highly

cited/downloaded papers, their research types, and evolving hotspot topics.

(4) **In academic communication channels and reader services:** Utilize OA and diversified information dissemination platforms for promotion and recommendation, adding recommendation functions for hotspot research topic papers or highly cited/downloaded papers.

(5) **In promoting technology research results:** Increase the proportion of lecture-style series papers on new technology and tool applications to promote the popularization of new technologies and expand the application scope of specific technical tools.

The library and information science field is developing toward integration with multiple disciplines (especially computer science, internet technology, and journalism/communication). Technology development and application will strongly promote the field' s future development, presenting a more favorable opportunity for *New Technology of Library and Information Service*, which primarily publishes technology research and application papers.

## References

[1] Minguillo D. Toward a New Way of Mapping Scientific Fields: Authors' Competence for Publishing in Scholarly Journals [J]. Journal of the American Society for Information Science and Technology, 2010, 61(4): 772-786.

[2] Zhao Jian. Mapping Knowledge Domain-based Study on the Magazine *New Technology of Library and Information Service* [J]. Information Research, 2013(4): 41-44.

[3] Bai Yun, Su Xinning. Academic Influence Analysis on Characteristic of Published and Cited Papers in *New Technology of Library and Information Service* Based on CSSCI (2004-2006) [J]. *New Technology of Library and Information Service*, 2008(4): 95-102.

[4] He Jing. Statistical Analysis on the Papers, Authors and Citations in *New Technology of Library and Information Service* from 2002 to 2004 [J]. Journal of Modern Information, 2006(1): 166-169.

[5] Zhu Xiaoshi. The Research and Comparison of Information Science and Computer Science in the Same Information Technology Field [J]. Modern Information, 2007(7): 215-218.

## Author Contributions

Wang Yuefen: Conceived the research idea, formulated the research plan, revised and finalized the manuscript.
Jin Jialin: Collected and processed data, performed modeling, and drafted the manuscript.

## Conflict of Interest Statement

All authors declare no conflict of interest.

## Supporting Data

Supporting data are self-archived by the authors. E-mail: jinjialin9219@163.com.
[1] Jin Jialin, Wang Yuefen. Downloaded Literature Information I.xlsx. Characteristic records of Chinese journal literature mentioned in the paper.
[2] Jin Jialin, Wang Yuefen. Downloaded Literature Information II.xlsx. Characteristic records of foreign journal literature mentioned in the paper.

**Received:** 2016-06-12
**Revised:** 2016-07-08

*Note: Figure translations are in progress. See original paper for figures.*