

Research on Interdisciplinary Literature Demand and Guarantee Strategies: Taking China Border and Ocean Studies as an Example (Postprint)

Authors: Fan Huiting, Xie Xin

Date: 2023-08-26T00:00:00+00:00

Abstract

[Purpose/Significance] China's boundary and maritime research is a typical "problem-oriented" interdisciplinary study. This research aims to summarize the characteristics of literature needs and explore corresponding literature support strategies, using boundary and maritime research as a case study.

[Method/Process] This study comprehensively employs citation verification and interview survey methods to analyze indicators such as citation types, disciplines, languages, and citation time intervals of all articles published by the China Institute of Boundary and Ocean Studies at Wuhan University since its establishment in 2007, as well as interview data on researchers' subjective literature needs.

[Results/Conclusion] The literature needs of boundary and maritime research are generally more complex and diverse, showing high dependence on journals, books, and online resources, with prominent features in political science and law. Chinese and English literature accounts for nearly 90% of the total, and the time span of cited literature is extensive. Therefore, libraries should ground their services in users' literature needs, emphasize the development of distinctive collection resources, refine strategies for literature resource development, and optimize subject services.

Full Text

Interdisciplinary Literature Demand and Guarantee Strategy Research: A Case Study of China's Boundary and Ocean Studies

Fan Huiting, Xie Xin

Center for Information Resources Research, Wuhan University, Wuhan 430072

Abstract

[Purpose/Significance] China's boundary and ocean research is a typical problem-oriented interdisciplinary study. This research aims to summarize its literature demand characteristics and explore corresponding literature guarantee strategies using boundary and ocean studies as an example. [Method/Process] Using citation analysis and interview survey methods, we analyzed citation document types, disciplines, languages, citation time intervals, and other indicators of all articles published by Wuhan University's China Institute of Boundary and Ocean Studies since its establishment in 2007, as well as interview results on researchers' subjective literature demands. [Result/Conclusion] The literature demand for boundary and ocean studies is generally more complex and diverse, with high dependence on journals, books, and network resources, prominent political science and law characteristics, Chinese and English literature accounting for nearly 90%, and large time spans in literature. Therefore, libraries should base their work on user literature demands, focus on constructing special collection resources, refine literature resource construction strategies, and optimize subject services.

Classification Number: G255

Keywords: interdisciplinary research, literature demand, literature guarantee, boundary and ocean

DOI: 10.13266/j.issn.0252-3116.2018.05.003

Introduction

While modern scientific research is developing toward disciplinary diversification, specialization, and refinement, the trend of interdisciplinary cooperation is also deepening. This is directly manifested in universities through the establishment of interdisciplinary research teams and institutions, and the rapid growth of interdisciplinary research funding and scientific achievements. Interdisciplinary research fields often bear high social responsibility, integrating multidisciplinary principles and methodologies to solve practical problems. Their literature demand similarly exhibits characteristics oriented by research themes, breaking disciplinary barriers, and integrating the needs of participating disciplines. The traditional resource organization and literature guarantee approach of university libraries based on "discipline-document type" can no longer adapt to this change. How to accurately grasp interdisciplinary literature demand and its characteristics, and achieve the strategic transformation from single-discipline literature guarantee to interdisciplinary literature guarantee, has become an important issue that university libraries must consider.

The National Territorial Sovereignty and Maritime Rights and Interests Collaborative Innovation Center was established in 2012, with main research areas including land disputes and cooperation, island and reef disputes and maritime delimitation, marine rights protection and expansion, polar rights protection and expansion, national maritime strategy and boundary diplomacy research,

China and neighboring countries' relations, and Chinese territory history and current status research. It aims to support national territorial and maritime strategies and policies, serve national territorial and maritime rights protection struggles, and provide technical support for territorial and maritime rights protection. As the leading unit of the center, Wuhan University China Institute of Boundary and Ocean Studies (hereinafter referred to as "CIBOS") was established in 2007. It is a typical interdisciplinary research institute that has published a series of research results and formed a relatively stable research paradigm. This study selects CIBOS as the research object, analyzes interdisciplinary literature demand and its characteristics using boundary and ocean studies as an example, and then discusses interdisciplinary literature guarantee strategies, which is targeted and representative.

2 Literature Demand of Boundary and Ocean Studies: Based on Citation Analysis

Citations are references listed at the end of scientific papers corresponding to the main text, and are also important indicators that authors have read and cited the literature. Objective citation data can be used to reverse-engineer researchers' literature acquisition behavior and subjective literature demand. Therefore, citation analysis can be used to grasp authors' literature demand, generate core publication lists, and evaluate library literature guarantee status. This study is based on Wang Haining's citation data of all journal and conference papers published by CIBOS from its establishment in April 2007 to the end of 2015, supplemented with citation data from all CIBOS publications in 2016. While both are citation-based studies, Wang Haining's article focuses on the literature guarantee status of CIBOS, whereas this study focuses on analyzing the literature demand performance of CIBOS to discuss corresponding interdisciplinary literature guarantee strategies.

Between 2007 and 2016, CIBOS had 84 researchers publishing as first authors, with 216 papers published in journals and conferences, citing 4,202 references. After deduplication within papers (counting multiple citations of the same reference only once), 3,535 citation data entries were obtained. The analysis examines document types, disciplinary attributes, languages, and citation time intervals to summarize the literature demand characteristics of CIBOS's interdisciplinary research.

2.1 Citation Document Type Distribution of Boundary and Ocean Studies

The distribution of document types in CIBOS citations is shown in Table 1. Overall, the required literature types are rich, including both traditional research literature such as books and papers, and characteristic literature such as network resources and archives. Among them, journals and books have the largest demand, with their combined total exceeding 60% of all citations.

Network resources rank third, accounting for 18.84%. Government and non-government organization publications, mainly referring to international treaties, domestic and foreign laws and regulations, and international organization documents, rank fourth, indicating that boundary and ocean studies frequently need to reference legal documents. Additionally, there is stable and continuous demand for newspapers, archives, scientific and technical reports, dissertations, and other types of literature.

To further analyze, we compare with single-discipline studies. In law, Mo Jianhua studied five provincial key humanities and social science disciplines at Zhejiang University of Technology, analyzing 30 master's theses and 40 faculty academic papers from 2011-2012. Here we only select citation data from criminal law as a comparison sample. In its citation type distribution, books, journals, and dissertations rank top three, accounting for 45.76%, 32.20%, and 11.53% respectively, followed by conference papers, standards, and network resources, but all with relatively small proportions. This shows that criminal law research requires fewer literature types than boundary and ocean studies overall. As the most demanded literature types, books and journals have higher proportions than in CIBOS, with their sum approaching 80%, while network resource demand is low at only 1.69%. Moreover, unlike the high demand for government and non-government organization publications in boundary and ocean studies, legal document literature is not reflected in criminal law citation data.

In history, Sun Hui analyzed all citation data of 431 papers published in Contemporary China History Studies from 2010-2014. The results show books account for the most citations at 41.37%, followed by archives, journals, and newspapers at 21.48%, 17.13%, and 15.14% respectively. Network resources, dissertations, and internal materials each account for less than 5%. Overall, single historical research requires fewer literature types than boundary and ocean studies. Specifically, books and journals are similarly the most demanded, with their combined citations exceeding half. Archival materials hold a more important position in historical research, ranking second only to books. Historical research also has relatively high demand for newspapers. Compared with boundary and ocean studies, historical research shows less demand for network resources.

In summary, compared with single-discipline research literature demand, boundary and ocean studies literature types are more abundant, network resource demand is more prominent, demand for historically characteristic literature such as archives and newspapers is evident, and demand for legally characteristic literature such as legal documents is substantial. This shows that, just as interdisciplinary research is not a simple combination of single-discipline research, interdisciplinary literature demand is not a superposition of single-discipline literature demands. In terms of literature types, it exhibits both characteristics of participating disciplines' literature demands and has its own emphases and differences.

2.2 Citation Discipline Distribution of Boundary and Ocean Studies

As an interdisciplinary research institute, CIBOS presents multidisciplinary characteristics. Among all types of cited literature, network resources, government and non-government organization publications, newspapers, archives, scientific and technical reports, and conference literature have relatively blurred disciplinary boundaries, while journals and books have clearer disciplinary attributes and are the most demanded literature types in research. Therefore, we only selected journal and book citations for statistics, using the Ministry of Education's first-level discipline classification catalog as the unified standard to analyze their disciplinary distribution.

The specific method is: for Chinese and foreign journal citations, we mainly determined their disciplinary attributes based on their subject classification in databases such as CNKI and Web of Science. For example, if source journal of citation A belongs to the "Chinese Politics and International Politics" subject, its disciplinary attribute is "Political Science"; if citation B comes from a journal in the "World History" subject, its disciplinary attribute is "History". Some journals belong to comprehensive subjects such as "Natural Science Comprehensive" or "Humanities and Social Sciences Comprehensive", so their disciplinary attributes are recorded as "Natural Science Comprehensive" or "Humanities and Social Sciences Comprehensive". For Chinese and foreign book citations, we mainly determined their attributes based on their Chinese Library Classification (CLC) number, Dewey Decimal Classification, Library of Congress Classification, etc. For example, if book citation C has CLC number D993.5 in the National Library of China, belonging to the "International Law" category, its disciplinary attribute is "Law".

The statistical results are shown in Table 2, fully reflecting the interdisciplinary characteristics of boundary and ocean studies. Citation sources are extensive, covering numerous disciplines, including humanities such as history and philosophy, social sciences such as political science, law, economics, and management, and natural sciences such as geography and surveying science, environmental science, civil and hydraulic engineering, resource science, and marine science. Among all source disciplines, the top five in citation quantity are all humanities and social sciences, with political science and law being the disciplines with the largest citation proportions and corresponding literature demand. They are followed by history, economics, and other disciplines, each accounting for more than 5%. Among natural sciences, geography and surveying science has the highest citation proportion at 4.72%, followed by environmental science, civil and hydraulic engineering, resource science, etc. Although their proportions are small, their quantities cannot be ignored.

2.3 Citation Language Distribution of Boundary and Ocean Studies

After statistics of all citations with known languages in boundary and ocean studies literature, the results are summarized in Table 3. Table 3 shows that

the language distribution of required literature for boundary and ocean studies is extensive, involving more than 10 languages, while also showing relative concentration. Chinese citations have the largest quantity, accounting for 44.75% of total citations, followed by English citations at 42.26%, with their combined total reaching 87.01%. Chinese and English languages concentrate nearly 90% of boundary and ocean citation literature. Russian, Japanese, Korean, French, Filipino, German, Arabic, Thai, and other minor language citations have small proportions, with most accounting for less than 1% and negligible quantities.

2.4 Citation Time Interval Distribution of Boundary and Ocean Studies

Citation time interval refers to the number of years between the publication year and citation year of a cited document. “0” means the document was cited in its publication year, “1” means it was cited in the following year, and so on. The time interval distribution of CIBOS citations is shown in Table 4 . The results show that boundary and ocean studies have large citation time spans, citing documents published from the same year to over 100 years ago, with overall dispersion and relative concentration. Among them, documents cited in their publication year account for 6.17%. The citation peak appears 1-5 years after publication, accounting for 35.87% of total citations, with the highest peak appearing 1 year after publication at 9.79%. The periods of 6-10 years and 11-20 years after publication are also relatively dense citation periods, accounting for 14.37% and 13.95% respectively. Overall, documents published within the last 20 years account for only 70.36% of citations, indicating that boundary and ocean studies require literature with broad and dispersed time spans.

3 Literature Demand of Boundary and Ocean Studies: Based on Interview Surveys

Citation analysis is mainly based on the mutual citation relationship between documents and is suitable for mining reader demand, but it has certain limitations due to possible problems in researchers’ citation processes. Taking international law in boundary and ocean studies as an example, through communication with relevant scholars, we learned that legal documents are literature resources with high usage rates and are the most basic resources in legal research. However, due to their special nature in the legal community and generally not involving intellectual property issues, they are mostly directly stated in the main text rather than reflected in references. This can explain the phenomenon mentioned above: why legally characteristic documents are not clearly reflected in citation data in legal research. Therefore, citation analysis methods cannot completely and truly reveal the actual demand for legal document literature in boundary and ocean studies. On the other hand, boundary and ocean research themes are directly related to national interests such as territorial sovereignty, and many research results involving territorial disputes and sovereignty issues may not be publicly disclosed, naturally not being counted in citation verifica-

tion. This missing data also affects the accuracy of citation analysis results to some extent.

Therefore, to comprehensively grasp the literature demand situation of boundary and ocean studies, we need to conduct more in-depth and direct analysis from the user's subjective perspective in addition to citation data analysis. From October to November 2016, Wuhan University Library and CIBOS held multiple literature demand symposiums to collect information on direct literature demands, document type preferences, and usage habits of scholars and student representatives from various research themes and directions in interdisciplinary research. After comparison and integration with citation analysis data, the literature demand situation of boundary and ocean studies was classified and summarized by literature resource type, as shown in Table 5, including four major categories: research literature, legal documents, historical literature, and network resources. Meanwhile, during the interview process, boundary and ocean researchers also proposed service requirements for the library, including one-stop retrieval, knowledge discovery, multi-dimensional resource display, and decision support.

From November 1 to December 19 after the symposiums, the library successively received 2,770 core literature demands listed by CIBOS researchers and attempted to satisfy them through various channels. The demand list included 1,303 legal documents (47.04%), 1,032 research literature items (37.26%), 317 historical literature items (11.44%), and 118 think tank reports (4.26%). The response results were: legal documents and think tank reports could be obtained in full text; 585 research literature items could be obtained in full text, 91 were purchased, 346 were requested through document delivery, and the remaining 10 could not be retrieved; 82 historical literature items could be obtained, 8 were recommended for purchase, 8 requested document delivery, and the remaining 235 requests could not be satisfied. Document delivery involved themes such as "Maritime Law and South China Sea," "Boundary and Cross-border Economic and Trade Cooperation," "East China Sea Issues (Mainland)," "Polar Issues," "Maritime Strategy and Maritime History," "Relations with Neighboring Countries," and "Diaoyu Islands Issues," with languages including Chinese, English, and Japanese, mainly foreign language documents, and Chinese documents mainly being books from Hong Kong and Taiwan regions.

In summary, combined with citation analysis results, books, journals, and other research literature are indeed the most basic information sources, and such research literature has a higher guarantee rate in traditional library literature guarantee than other literature types. Network resources such as news videos, hot commentaries, and think tank reports rank third in CIBOS citation data and are also important literature types in user demand feedback, indicating the importance of network resources in boundary and ocean studies. Unlike citation analysis results, users' subjective demands show more direct and prominent performance of legal documents and historical literature. Although there are currently some legal document databases at home and abroad, such as HeinOn-

line, PKU Law, PKU LawInfo, and Marine Conventions Ratification Database, which can provide a large number of digital resources, they have problems of scattered and fragmented content with low integration for boundary and ocean researchers. Historical literature types are complex, mostly rare or unique copies, and are even more difficult to obtain.

4 Interdisciplinary Literature Demand Characteristics of Boundary and Ocean Studies

Interview survey results and citation verification data are both consistent and complementary. Citation analysis objectively analyzes literature citation patterns and demand characteristics, while user interview surveys subjectively explore users' literature type preferences and usage habits. Combining objective data with subjective demands can further summarize the interdisciplinary literature demand characteristics of boundary and ocean studies, namely that literature is generally more complex and diverse, manifested in rich literature types, comprehensive coverage of humanities, social sciences, and natural sciences, extensive language sources, and large time spans.

4.1 Research Literature as Mainstay, Plus Other Types

Compared with single-discipline research, literature types used in boundary and ocean interdisciplinary research are more abundant. Unlike science and engineering disciplines that focus on the latest journal papers and technical reports to track frontiers and hotspots, boundary and ocean studies rely on such research literature and also emphasize discipline-characteristic literature such as legal documents, archives, ancient books, and maps, while also needing to refer to a large number of network literature resources. This is consistent with its research orientation based on historical facts, serving reality, and aligning with current affairs. It can be inferred that this characteristic is also shared by most other humanities and social sciences interdisciplinary research. For researchers, the reference value cycle of classic literature such as books is longer, while materials such as archives, ancient books, and documents often play an evidentiary role.

4.2 Significant Humanities and Social Sciences Tendency, Prominent Political and Legal Characteristics

From the disciplinary distribution of boundary and ocean research citations, although all literature covers humanities, social sciences, natural sciences, and other categories, the sum of the former two accounts for 83.84% of total citations, with subclasses occupying the top five positions in citation volume, indicating that boundary and ocean research is still a research theme supported by humanities and social sciences, especially with prominent political science and law characteristics, and its literature demand is also mainly concentrated in these fields. On the other hand, natural science literature accounts for nearly 20%, so literature demand in these disciplines cannot be ignored. The disciplinary dis-

tribution of literature reflects and determines the interdisciplinary cooperation model. According to surveys, the educational background and research fields of CIBOS researchers are mainly concentrated in humanities and social sciences. As for participating science and engineering disciplines such as surveying and mapping remote sensing, water conservancy and hydropower, they mainly focus on technical support, so related literature involvement mainly comes from reference consultation and plays a supporting role. Although such minority disciplines account for a small proportion of literature in interdisciplinary research, as long-tail demand, they are still necessary to notice for comprehensive literature guarantee.

4.3 Chinese and English Literature Approaching 90%, Minor Languages with Many Types but Small Quantities

From the citation language perspective, boundary and ocean research citations show obvious concentration-dispersion patterns, with Chinese and English literature accounting for 87.01%, and the two are roughly equal. This figure is not surprising for Chinese researchers today for two reasons: first, Chinese as the mother tongue has the largest literature contact volume, and because information in the literature is easiest to obtain, it is naturally most relied upon by researchers; second, English as the world's most widely used public language is generally mastered by researchers, and papers published, works published, or archives preserved by foreign researchers in English have important value. Domestic scholars who want to align their research with international standards naturally have great demand for them. Minor language literature such as Russian, Japanese, Korean, French, Filipino, German, Arabic, and Thai has many types, but each single language accounts for a small proportion. The richness of languages is closely related to the transnational research themes of boundary and ocean studies. In research on border issues, national boundary issues, and international relations, referencing more literature from neighboring countries or countries with territorial disputes with China is self-evident.

4.4 Large Literature Time Span, Intensive Citation of Literature Published Within 20 Years

Regarding the time distribution of demanded literature, we can see from the citation patterns of boundary and ocean research references that its time span exceeds 100 years, while literature demand is most concentrated in publications from the last 20 years. This situation arises because boundary and ocean research includes both time-sensitive research themes and some historical issue research, or has both aspects, such as the "Diaoyu Islands issue." The Diaoyu Islands have been China's inherent territory since ancient times. The earliest historical record seen that documents place names such as the Diaoyu Islands is the book "Shunfeng Xiangsong" published in 1403. However, due to issues such as Japanese aggression against China and territorial return after the war, it involves many modern international treaties, and at the same time, due to Japan's

wanton actions in recent years, a large amount of web news has been generated, which is naturally reflected in research. In addition, CIBOS's research field division in the National Territorial Sovereignty and Maritime Rights and Interests Collaborative Innovation Center mainly focuses on modern and contemporary history and international relations, while ancient borderland research is mainly conducted by the Chinese Academy of Social Sciences. This determines that its required literature will not involve too many materials before the Ming and Qing dynasties. From this, we can see that literature has a life cycle, but for different users, this cycle is different.

5 Discussion on Literature Guarantee Strategies for Boundary and Ocean Studies

Given the particularity of boundary and ocean studies, if literature is scattered and preserved, it is not conducive to centralized access. Wuhan University Library has previously begun to establish a "Boundary and Ocean Characteristic Library," collaborating with the CIBOS reference room to collect more than 80,000 volumes of core Chinese and foreign books and materials related to boundary and ocean studies, including international law, resource and environmental law, world history, Chinese history, international politics, international relations, geography, etc., 155 journal titles, 29 related databases with 58 sub-databases, and 450,000 pages of Chinese and foreign historical archives. Even so, it still cannot fully satisfy researchers' needs. Therefore, we must truly grasp researchers' demands and conduct more targeted construction.

5.1 Base on User Demand, Allocate Funds Reasonably

In the process of literature resource construction, how to grasp the relationship between user demand and fund allocation is the primary issue for literature institutions. For a specific library, considering the relationship between cost and benefit and the impact of insufficient funds, comprehensive collection is almost impossible. Therefore, the 80/20 rule is still the main theoretical basis for current literature procurement, meaning that we should focus on ensuring the collection of 20% of core resources with high utilization rates to meet 80% of readers' literature demand. User demand-oriented is the primary principle of literature guarantee. The complex and diverse literature demand of boundary and ocean studies poses challenges to traditional literature guarantee work, but also provides clues for new resource construction. According to the interdisciplinary literature demand characteristics of boundary and ocean studies, libraries should focus on guaranteeing core literature resources that can meet 80% of user demand. Based on actual conditions, long-tail demands can be met through active services, targeted services, and other methods.

For example, in the specific literature demand of boundary and ocean studies, books and journals account for more than 60%, political science and law disciplines include more than half of disciplinary literature, Chinese and English lan-

guage literature covers nearly 90% of demand, and literature published within 20 years accounts for 70% of demand. Therefore, when constructing boundary and ocean literature resources, libraries should concentrate main funds on purchasing paper or electronic resources of books and journals, emphasize literature in humanities and social sciences, especially political science and law, focus on improving the guarantee rate of English literature, and continuously track and collect newly published literature to meet the core literature demand of boundary and ocean researchers. For other types of literature with smaller utilization, natural science literature, minor language literature, etc., we can selectively and targetedly satisfy them, or guarantee them through document delivery, interlibrary loan, collaborative cooperation, user-driven purchase, and other methods, thereby using limited funds rationally.

5.2 Focus on Special Collections, Leverage Collaborative Advantages

Multi-disciplinary cooperation and multi-unit collaboration are the basic manifestations of the collaborative innovation environment. One of its goals is to form a knowledge sharing mechanism, relying on modern information technology to build resource platforms, and promoting the flow and exchange of resources among collaborative entities. For specific construction, underlying resource collaboration takes literature resource sharing as its basic manifestation, providing conditions for building a literature collaboration network with complementary advantages. On the one hand, when coordinating cooperation and communication among participating disciplines, literature demand and fund proportion planning are particularly important. When constructing the boundary and ocean literature guarantee system, libraries should not only see whether there are cross demands among participating disciplines to avoid repeated purchase of literature resources, but also play the role of subject librarians as communication links, integrate the literature guarantee capabilities of various disciplinary reference rooms, and promote cooperative procurement and co-construction and sharing of disciplinary literature resources.

On the other hand, universities and research institutes at all levels should leverage their own collection advantages. When selecting disciplinary literature, libraries usually focus on collecting literature of their own key disciplines. This trend will be further strengthened in future library resource construction. For example, Wuhan University's international law program ranks among the top in Chinese universities. Although literature in this field is expensive, the library strives for comprehensive and systematic collection of foreign books in this field. The National Territorial Sovereignty and Maritime Rights and Interests Collaborative Innovation Center, in addition to being led by Wuhan University, also includes Fudan University, the Institute of Chinese Borderland Studies of the Chinese Academy of Social Sciences (hereinafter referred to as "Borderland Institute"), China University of Political Science and Law, and other collaborative units, each with disciplinary construction and research field characteristics. For example, Fudan University focuses on international

relations, the Borderland Institute focuses on borderland history and geography research, and correspondingly, the Borderland Institute has built a Chinese Borderland Research Materials Database to collect ancient historical materials. In addition, Xinjiang University, Jilin University, Xiamen University, and other universities near borderlands and coasts, although not participating in the center's construction, also have corresponding special collections and can play a cooperative role.

5.3 Refine Resource Construction Strategies, Optimize Subject Services

Boundary and ocean studies show significant demand for discipline-characteristic literature such as historical literature and legal documents, as well as network resources. These three types of resources have complex content, diverse types, and complex sources, making guarantee relatively more difficult. In this regard, libraries should refine resource construction strategies according to literature characteristics: (1) For historical literature, we should strengthen cooperation with libraries, archives, and other institutions, and comprehensively use literature transmission, photocopying, purchase, and other methods to guarantee. (2) For legal documents with high utilization rates, high digitization rates, but scattered and complex content, we should order on demand and build our own databases when necessary. (3) For open network resources, libraries can use crawler software to automatically capture valuable resources updated on websites, supplemented by manual screening and verification. Digital resources are the major trend of future resource construction. Libraries should focus on improving the digitization rate of literature, and should also have intelligent retrieval, knowledge discovery, and other functions. Through the editing of literature association data, we can achieve fine-grained organization, and have forward-looking platform and technology choices.

Synchronized with the refinement of resource construction strategies and the expansion of resource service functions, existing subject services should be further optimized. Traditional subject services include collection construction, reference consultation, teaching and training, and departmental liaison. However, against the background of the rise of the E-science concept and the development of the open access movement, these can no longer meet user demands. Cornell University Library has clearly proposed in its "Toward 2015: 2011-2015 Strategic Plan" that subject librarians must integrate into the entire process of scientific research activities, one point of which is to promote interdisciplinary and inter-institutional research cooperation, provide support for teachers and students at various research stages, and serve digital publishing, data curation, etc. In fact, the deep connotation of the resource service demands mentioned earlier by boundary and ocean researchers is the deepening of subject services, achieving the role transformation of library subject librarians from resource provision and consultation acceptance to research-driven and learning support.

References

- [1] STOPARK, DROBNED, ELERK, et al. Citation analysis and mapping of nanoscience and nanotechnology: identifying the scope and interdisciplinarity of research[J]. *Scientometrics*, 2016, 106(2): 563-581.
- [2] HAMMARFELDT B. Interdisciplinarity and the intellectual base of literature studies: citation analysis of highly cited monographs[J]. *Scientometrics*, 2011, 86(3): 705-725.
- [3] National Territorial Sovereignty and Maritime Rights and Interests Collaborative Innovation Center. Center introduction[EB/OL]. [2017-06-16]. <http://cictsmr.whu.edu.cn/index.php?id=1471>.
- [4] Ma Lingyun, Wang Zongliang. Empirical analysis of university teachers' literature demand and library collection guarantee: a case study of mathematics discipline at Shanghai Normal University[J]. *Library Journal*, 2012(1): 42-47.
- [5] ABEYRATHNE DK. Citation analysis of dissertations for collection development[J]. *Collection building*, 2015, 34(2): 30-38.
- [6] Wang Haining. Research on literature guarantee of China Institute of Boundary and Ocean Studies[D]. Wuhan: Wuhan University, 2016.
- [7] Sun Hui. Research on literature demand and characteristic resource construction of contemporary Chinese history discipline based on citation analysis[J]. *Information Research*, 2016, 1(9): 1-6.
- [8] Mo Jianhua. Perspective on researchers' literature demand based on citation analysis: a case study of humanities and social science provincial key disciplines at Zhejiang University of Technology[J]. *Information Research*, 2013(11): 31-33.
- [9] Yang Siluo. Exploration of problems in citation analysis and their causes[J]. *Journal of Library Science in China*, 2011, 37(3): 108-117.
- [10] Historical basis for Diaoyu Islands sovereignty belonging to China[EB/OL]. [2017-11-30]. http://www.diaoyudao.org.cn/node_{7217572}.htm.
- [11] Liu Yansu, Gui Xiumei. Coexistence application of the 80/20 rule and long tail theory in modern libraries[J]. *Modern Information*, 2009, 29(8): 40-42.
- [12] Li Zuchao, Liang Chunxiao. Analysis of collaborative innovation operation mechanism: from the perspective of university innovation subjects[J]. *China Higher Education Research*, 2012(7): 81-84.
- [13] Cui Qiong. Literature guarantee strategy for the central book collection of imported liberal arts books at Wuhan University[J]. *Journal of Academic Library and Information Science*, 2007, 25(6): 36-38.
- [14] Li Li. Development trends and implications of subject services in foreign research libraries: a case study of Cornell University[J]. *Library Science Research*, 2013(14): 82-85.

[15] BIDDISCOMBE R. Learning support professionals: the changing role of subject specialists in UK academic libraries[J]. Program, 2002, 36(4): 228-235.

Author Contributions

Fan Huiting: processed and analyzed data, wrote and revised the paper;

Xie Xin: wrote and revised the paper.

Research on Interdisciplinary Literature Demand and Guarantee Strategy: A Case Study of China's Boundary and Ocean Studies

Fan Huiting, Xie Xin

Center for the Studies of Information Resources of Wuhan University, Wuhan 430072

Abstract: [Purpose/significance] China's boundary and ocean study is typically problem-oriented interdisciplinary study. This paper aims to summarize the characteristics of literature demand and discuss the corresponding literature guarantee strategy, using boundary and ocean studies as an example. [Method/process] Using citation analysis and interview method, the paper analyzes the citations' document types, disciplines, languages and cited year intervals of all papers of Wuhan University China Institute of Boundary and Ocean Studies (CIBOS) from 2007, and the results of subjective literature demand of researchers. [Result/conclusion] The literature demand of China's boundary and ocean studies is more complex and diverse overall. Researchers have high reliance on journals, books and network resources. There are long time spans in journals and books whose political science and legal characteristics are prominent. Besides, Chinese and English literatures account for nearly 90%. Therefore, the library should focus on users' literature demands, pay attention to the construction of special resources, refine the literature resources construction strategy, and optimize its discipline services.

Keywords: interdisciplinary research; literature demand; literature guarantee; boundary and ocean

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

Source: ChinaXiv — Machine translation. Verify with original.