Chapter 15
A Bibliometric Analysis of Research and Services in Chinese Academic Libraries

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ABSTRACT
This paper analyzes the years of publication, authors and their institutions, journal titles, and keywords of research papers relevant to academic libraries published in the 18 core journals of library and information science, which were downloaded from the full-text database of the China National Knowledge Infrastructure (CNKI). The purpose of this paper is to discover the distribution of the research subjects, hot topics in library and information research, and development trends in the age of big data.

INTRODUCTION
Chinese academic libraries, including the libraries of institutions of higher education and research institutions, always carry out their operations with academic research and service in mind. As academic institutions that provide information services to support teaching and scientific research, Chinese academic libraries have greatly promoted the development of library science and the library cause in their development processes through academic research in this field. Scholars have initiated a number of research projects to study academic research and service in Chinese academic libraries. Some scholars offered descriptions at the macroscopic level and provided interpretations based on qualitative analysis. For example, Jiying Hao expounded and analyzed the main characteristics and trends of academic library development (Hao et al., 2014), while Min Wang analyzed the relationship between academic research and service in academic libraries and discussed a service mode that implements academic research and service simultaneously (Wang, 2013). Others carried out research based on quantitative methods such as bibliometrics, including statistical analyses of research papers during a certain period of time.
or related to a certain topic. For example, Yidan Feng provided a statistical analysis of the academic research achievements of four university libraries from 2005 to 2009 (Feng & Feng, 2012), and Hong Liu performed a statistical analysis of library blogs (Liu, 2009).

In recent years, especially since the concept of big data was formally put forward in 2011, academic research and service practices in Chinese academic libraries have seen significant development in the innovation of library service during this period of transition, and they actively promoted the transformation of academic library functions. As a result, much has been achieved in the area of academic research and services in Chinese academic libraries. Based on bibliometrics, this paper will analyze the studies as a whole, looking specifically at recent developments and progress of author teams, periodical distribution, research topics, and developmental trends.

DATA AND METHOD

The China National Knowledge Infrastructure (CNKI) full-text database was chosen as the data source. Due to the large number of research papers relevant to academic libraries in recent years, this study looked only at papers published in 18 core journals in the field of library and information science in order to reflect the highest quality of the present studies. Five search terms, including academic library, university library, college library, science research library, and research library, were input as retrieval subjects, and the period of publication was set from 2011 to 2015, resulting in 3,993 papers (retrieved on May 31, 2015). The bibliographic information about the papers, including titles, authors, institutions, keywords, abstracts, titles of journals, and years of publication, were transferred to Excel spreadsheets to be processed. In this process, some additional selections were made so as to ensure the accuracy of the data. Some examples of this involved eliminating items that were not relevant to academic libraries, such as some dynamic newsletters, conference notices, contributions invitations, etc.; removing duplicate papers that were published in multiple journals, as well as papers without authors, keywords, or abstracts; and merging papers continually published in different issues to count them as one paper. Finally, 3,676 relevant papers were collected.

The basic goal of this paper is firstly to provide a statistical analysis of these papers, specifically looking at authors and their institutions, years of publication, and the journals in which they were published, so as to study the distribution of the research subjects. Then, this paper aims to reveal the latest hot topics in research, and to identify the research developmental trends based on the frequency and co-occurrence network analysis of keywords.

ANALYSIS OF THE DATA BASED ON BIBLIOMETRICS

About Years of Publication

The temporal distribution of the number of journal papers in a certain research field reflects the situation and development speed of research in that field. The total number of the research papers related to academic libraries published in the 18 core journals of library and information science from 2011 to 2015, which were downloaded from the CNKI full-text database, is 3,676, and the details of the temporal distribution of publication is shown in Figure 1.