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# Library and Information Science Research in China—A Survey Based Analysis of 10 LIS Educational Institutes



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#### ABSTRACT

This paper aims to conduct a quantitative evaluation on the achievement, research productivity, and research hotspots of "Library, Information and Archives management" Science schools or departments in China. In this paper, the "LIS" in China is firstly defined. Before evaluation, data are collected from CSSCI (Chinese Social Science Citation Index)-indexed papers and SSCI (Social Science Citation Index)-indexed papers, as well as projects granted by the two authoritative national foundations in China, SSFC (National Social Science Foundation of China) and NSFC (National Natural Science Foundation of China). Then, a bibliometric-based method and a keyword-based method are employed to analyze the collected data from different perspectives, including annual distribution, author productivity, institute productivity and influence. Through the analysis, several conclusions are made: a) collaborative groups exist, though no particular collaboration preference is exhibited. b) Interdisciplinary research promotes the emergence of new disciplines. c) There are four top institutes with outstanding productivity and six hot research topics in the "LIS" study in China. Also, in a five-year period, "LIS" scholars have paid much attention on network technology and its application in this field. Research addressing the view of "information" is much more popular than the ubiquitous conception of "library". d) There still exist some issues in China's LIS research, for example, the unbalanced development of educational institutes, the excessive preference of theoretical research over technical research, etc.

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#### INTRODUCTION

Research has always been regarded as one of the main functions of modern universities world-wide. Kuhnen (1978) pointed out that, research conducted by professors increases the body of theoretical knowledge, as well as its application to practical problems. In the US, universities play a major role in originating and promoting the diffusion of knowledge and techniques that contribute to industrial innovation (Mansfield & Lee, 1996). The European Commission believes that, when treated equally, education, research and innovation form a so-called "knowledge triangle". Such a triad is embedded in the European Institute of Innovation and Technology (EIT) as a putative exemplar of a world-class university for the modern world (Boulton & Lucas, 2011). In mainland China, research is playing a much more important role in universities than ever before. It is believed that modern universities must target at least three basic missions: talent cultivation, social service provision and research. Among these missions, research

achievements are always regarded as the primary criterion for university evaluation.

Research achievements could be evaluated from various aspects, such as patents, research reports, teaching innovation, papers, research projects, etc. A careful evaluation of periodical literature may indicate a complete picture of a discipline (Davarpanah & Aslekia, 2008), and "research projects" is another important factor in a discipline's development. As a result, analyses on both academic papers and research projects are commonly used in evaluating one institute's productivity. In this paper, we focus on the evaluation of the 10 Doctoral-degree-conferring Library and Information Science educational institutes in mainland China to summarize the periodical development of the Library and Information Science discipline in mainland China.

"LIS" is known as Library and Information Science. It is defined in different forms of internal conceptual coherence: some approve that "LIS" is an inter-discipline concept (Weech & Pluzhenskaia, 2005), while others treat it as a standalone discipline (Bawden, Weller, & Haider, 2007; Fadaie, 2008). As for mainland China, according to the classification in the "Catalogs of Disciplines for Professional Degree Commencement and Talent Cultivation", which is formulated by the Ministry of Education of the People's Republic of China in 2013 "library, information and archives management" is a sub-class of Management Science, containing

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Library Science, Information Science, and Archives Management (see Appendix A). Therefore, from our perspective, "LIS" is more of an abbreviation referring to the "library, information and archives management" discipline.

In mainland China, there are over 70 LIS credential programs for graduate education. Among these programs, doctoral programs play a leading role in research. However, the number of Doctoral-degreeconferring LIS educational institutes is relatively small. According to the Academic Degree Committee of the State Council (ADCSC) of China, there are only 11 institutes certified as LIS doctoral degree conferring institutes (Table 1). 9 of the 11 institutes belong to universities, which are the School of Information Management, Central China Normal University (CCNU), the School of Management, Jilin University (JLU), the School of Information Management, Nanjing University (NJU), the Department of Information Resources Management, Nankai University (NKU), the School of Information Resource Management, Renmin University of China (RUC), the School of Information Management, Sun Yat-sen University (SYSU), the Department of Information Management, Peking University (PKU), the School of Information Management, Wuhan University (WHU), and the School of Public Management, Yunnan University (YNU). Also, one institute, the National Science Library, belongs to the Chinese Academy of Sciences (CAS), Besides, there is one institute belonging to a military college, the Nanjing Political College (NPC).

Specifically, till 2011, 8 educational institutes have been qualified by ADCSC for conferring doctoral degrees in Library Science, 8 in Information Science, and 4 in Archives Management (Qu, Zhao, & Qu, 2012). These institutes have certain advantages in their discipline's development, and are commonly regarded as leaders in China's LIS field. Therefore, in this paper, we selected 10 of them as samples for research, leaving the NPC out of our consideration, since relative data of this college are not publicly accessible.

The purposes of this paper are not only to help LIS practitioners understand the current status of research achievements of LIS educational institutes, but also to locate problems in current LIS research in China. In the following sections, we will give a productivity evaluation and analyze the current development of LIS in China taking the 10 sample LIS institutes as examples. The evaluation is conducted based on academic papers and research projects. More specifically, it contains: a) assessment on changes in the research productivity of 10 Chinese LIS programs over time; b) rankings of the top 50 scholars in terms of their research output, and their institute distribution; c) rankings of the top 50 scholars in those LIS programs in terms of their impact; d) rankings of the 10 sample LIS programs in terms of their research output; and e) rankings the 10 sample LIS programs in terms of their impact. Besides, this paper also proposes a keyword analysis method, which identifies and ranks the keywords that most frequently occur in papers published by authors in the 10 LIS programs. With this method, core keywords could be extracted and ranked separately from all the publications of the 10 LIS programs

**Table 1**List of all 11 LIS educational institutes qualified for conferring LIS PhD degrees in mainland China, and their corresponding PhD degrees conferring disciplines till 2011.

Institute	Library science	Information science	Archives management
CAS	√	√	_
CCNU	-	$\checkmark$	-
JLU	$\checkmark$	$\checkmark$	_
NJU	$\checkmark$	$\checkmark$	_
NKU	$\checkmark$	$\checkmark$	_
NPC	$\checkmark$	-	$\checkmark$
RUC	-	$\checkmark$	$\checkmark$
SYSU	$\checkmark$	-	_
PKU	$\checkmark$	$\checkmark$	_
WHU	$\checkmark$	$\checkmark$	$\checkmark$
YNU	=	_	√

during 2008 and 2012. The results of this analysis can be treated as a supplementary to highlight research concentrations of the 10 LIS programs. As for problem locating, data analysis with background consideration and research theme analysis of literature or projects are employed. This could contribute to the future policy-making in China's LIS research. Furthermore, a comparison on research achievements between iSchool members based on our previous work (Xiao & Li, 2012) and other institutes is given, which could serve as another reference for policy-making.

#### LITERATURE REVIEW

In existing LIS studies, bibliometrics and citation indicators are regarded as the most important impact measures of scientific literature when assessing research performance (Davarpanah & Aslekia, 2008). Bibliometrics in the LIS field have been recognized as an independent research topic since 1958. And nowadays, it has been at the core of a number of science evaluation research groups around the world (Thelwall, 2008). Citations are treated as an index for the quality of LIS school faculties (Brace, 1992). Besides the citation indicator, as for literature content analysis, keyword analysis is a commonly used method world-wide. "Co-word analysis of both index terms and words extracted from titles, abstracts, and full text" is appraised as a keyword analysis shape for LIS research (Milojević, Sugimoto, Yan, & Ding, 2011).

Among all the different approaches of reporting research achievement, such as monographs, conference proceedings, etc., academic papers are the primary choice for researchers (Garvey, Lin, Nelson, & Tomita, 1972; Garvey, Lin, & Tomita, 1972). Statistical analysis in publications and their citations could directly tell the trends in one discipline. Shaw and Vaughan (2008) investigated the work and influence of a cross section of LIS researchers at various stages of their academic lives, using a random sample of faculty members at the programs accredited by the American Library Association through analyzing their publication numbers.

In the passing decades, LIS studies on the evaluation of research achievements or productivity of educational institutes, have explored many effective productivity and informative methods. As for LIS studies within mainland China, there have also been various approaches for different purposes.

It has been a hot spot for scholars to conduct their evaluation research of different institutes from various aspects. For example, Fang, Zhou, and Hu (2005) presented common research interests in the LIS field through a statistical analysis of the core authors in China. The analysis was conducted based on the distribution of core authors, their ages, their academic roles and the institutes they work for, the to-date research situation, the research trends and the development of the professional personnel in the field.

Besides analysis on research interests, comparative research of different institutes has also been a common research topic. Zhang (2004) developed a comparative study of thesis capabilities about publications in the LIS departments of Chinese colleges during 2000 and 2003, by comparing each school's publications in core journals and main topics of the papers. And based on the results, the author listed 5 highlights for LIS research fields. Then Zhang (2005) analyzed the published articles and projects, and compared the productivity of all LIS departments, which were conducting at least one project of the National Social Science Foundation of China. This analysis revealed the strong productivity of the five LIS academic institutes compared to others in terms of papers and national projects, and discussed the reasons.

Among all the analytical research, there is a type that involves Chinese keyword analysis. In such research, keywords are directly obtained, manually extracted from titles, or automatically extracted using simple keyword extraction tools (Fang et al., 2005; Ma & Zhang, 2006; Wei, 2006). When concentrated on qualitative analysis in depth, such as descriptive research on papers' subject distribution, abstracts or full text analysis, methods using statistical tools or visualization tools are

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