### ORIGINAL ARTICLE



# The status quo and development trend of talent cultivation in academic journal studies in China: A case study of Master's and Doctoral theses

Li Han\*

United Editorial Office for Journals, Institute of Microbiology, Chinese Academy of Sciences, Beijing 100101, China

## ABSTRACT

**Background:** This paper aims to investigate the situation of discipline construction in the field of academic publishing in China, including the transfer of talents to the academic publishing and its impact on the research and development of the academic publishing in the future. **Methods:** This research conducted a comparative analysis of the quantity of Master's and Doctoral theses on academic journal studies in terms of relevant educational institutes, disciplines, high-frequency keywords, and research hotspots. **Result:** It was found that the number of Master's and Doctoral theses on academic journal studies in terms of relevant educational institutes, disciplines, high-frequency keywords, and research hotspots. **Result:** It was found that the number of Master's and Doctoral theses on academic journal studies has increased since 2004 and remained steady during 2016–2021; among the 26 research institutes in which more than 10 Master's and Doctoral theses in this field were published, information science, library science, communication, and journalism constituted the main disciplines of academic journal studies in China, and the theses published in these disciplines accounted for 34.4% of the total. The research hotspots included open access, editing and publishing, bibliometrics, *etc.* until 2015, and bibliometric analysis from 2016–2021. With bibliometric analysis, in the past ten and more years, 849 excellent graduates have been engaged in the academic journal studies. Some research institutes have made significant contributions to this field, cultivated a great number of Master's and Doctoral theses focusing on academic journal studies has grown rapidly, leading to a picture of diversified prosperity in schools, majors, and fields of study. Universities and research institutes in China should establish a special research direction of academic journal studies to give impetus to the academic publishing industry.

Key words: degree theses on academic journals, talent cultivation, research hotspots

## INTRODUCTION

With the progress of science, the output of literature in China has been rising in the past half a century. In 2017 (2016–2018 average), the number of papers published by Chinese researchers each year was 305,927, ranking first in the world.<sup>[1]</sup> In 2018, 2019 and 2020, the number of highly cited papers in China contributed 27.2% (4,744

\*Corresponding Author:

Received: 26 September 2022 Revised: 1 December 2022 Accepted: 7 December 2022 Published: 27 February 2023 https://doi.org/10.54844/ep.2022.0159

**3** This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License, which allows others to copy and redistribute the material in any medium or format non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

in total) of the top 1% of the papers cited in the world, ranking first.<sup>[2]</sup> With the increasing output of scientific research, the number of academic journals in China is also rising. By 2020, the total number of academic journals in China has reached 6,066.<sup>[3]</sup> The explosive growth of academic research achievements in China has made academic research with its carrier<sup>[4]</sup>—academic journals and academic papers—an emerging hot topic and has also made long-term and in-depth research in the field of academic journals to be the choice of relevant majors in many colleges and universities in China.

Compared with journal articles, Master's theses and Doctoral dissertations are less explored.<sup>[5]</sup> Doctoral students in China generally take two years to write their dissertations and are expected to provide innovative ideas with academic and social value, while Master's students generally take one year to write and are required to conduct research independently and

Li Han, Email: hanl@im.ac.cn; http://orcid.org/0000-0002-7135-8590

propose some new ideas.<sup>[6]</sup> Theses and dissertations not only reflect original contributions to the disciplinary development and the accumulation of knowledge, but also demonstrate scientific achievements made by the students.<sup>[7]</sup> Research on degree theses mainly comprises the analysis of theses in specialized fields,<sup>[8]</sup> the impact factors of thesis publication,<sup>[9]</sup> scientific journal articles output from dissertations,<sup>[10]</sup> the status and development of education in a certain discipline,<sup>[11,12]</sup> the progress of research in a particular field,<sup>[13]</sup> and document requirements.<sup>[14]</sup>

Through the data analysis of Master's and Doctoral theses in the field of academic journal studies in China, we try to clarify: (1) the number of students investigating journal studies; (2) the main universities involved in journal research; (3) the emerging journal publication themes in which the universities specialize. We hope to know the situation of discipline construction in the field of academic publishing in China, which talents can be transferred to the academic publishing, and what impact on the research and development of the academic publishing in the future.

# DATA SOURCES AND ANALYTICAL METHODS

In order to ensure the accuracy and comprehensiveness of the data, we chose the high-quality and inclusive databases such as China Masters' Theses/Doctors' Dissertations Full-text Database (CMFD) provided by China National Knowledge Infrastructure (CNKI), China Dissertation Database (CDDB) provided by Wanfang Data, and Doctoral Dissertation Database provided by National Library of China. The data were retrieved on January 20, 2017. Due to the time-lag between the publication of an article and its inclusion into the database, we decided the theses should be those published before December 31, 2015. In order to obtain as much data as possible, we entered "scientific journals", "academic journals", "science and technology + journals", or "academic + journals" in the keyword search in three Chinese databases. To ensure the accuracy and comprehensiveness of the retrieval, we used "or" to get more items, then checked item by item manually and removed the overlapping items, we found a total of 59 Doctoral dissertations and 790 Master's theses as our samples. These data samples were later analyzed and processed by Excel.

In order to get the latest trends and research hotspots, we selected CMFD and Academic Journals Database, which are different data sets of the same database CNKI. We use the same keyword search from 2016 to 2021 items to clarify the research hotspots differences between two data sets. We found a total of 444 items as Master's and Doctoral theses samples and a total of 52,221 items as academic journals samples. According to the order of correlation, the first 200 literature of two sets were selected for keywords data analysis.

## ANALYSIS OF CHINA MASTER'S AND DOCTORAL THESES ON ACADEMIC JOURNAL STUDIES

# *Quantitative growth of China Master's and Doctoral theses*

Figure 1 presents the annual number of Master's and



Figure 1. Quantitative comparison of China Master's and Doctoral theses till 2015. (A) Total number of papers of China Master's and Doctoral theses till 2015. (B) Number of papers of China Doctoral theses till 2015. (C) Number of papers of China Master's theses till 2015.

Doctoral theses our data discovered. The quantitative growth of Master's theses can be divided into four stages:

- (1) Before 1998 is the latent period, with few outputs of theses (only five Master's theses in this field before 1990).
- (2) From 1999 to 2003 is the rudimentary period, with an annual output of 8 theses.
- (3) From 2004 to 2009 is the period of linear growth. Since 2004, there had started a rapid, linear growth, with an annual increase of over 10 theses. The number of Master's theses in 2009 (72) was 10.2 times that in 2004 (7).
- (4) From 2014 to present is the period of maturation with fluctuation. Since 2010, the number of Doctoral dissertations has shown a fluctuated upward trend, with a growth rate slightly slower than the previous period. From 68 theses in 2010 to 84 theses in 2015, the average annual increase is 2.7 theses (Figure 1C).

The quantitative growth of Doctoral dissertations can be divided into two stages:

- (1) before 2004 is the latent period, with few outputs of theses (only one Doctoral thesis in 1992 and one in 1996), and little attention from the academia was paid to this field.
- (2) Doctoral dissertations have begun to appear since 2005, and their number shows a generally upward trend with some fluctuations, reaching two relatively high points at 5 in 2007 and 8 in 2009; the number remained relatively stable during 2009–2013, at 5 or more per year, and reached the peak in 2013, at 11. By 2015, the average of 5.7 Doctoral dissertations had been published annually (Figure 1B).

The total number of Master's and Doctoral theses in the ten and more years shows a similar growth curve with that of Master's theses. From 2004 to 2009, the total number grew linearly and then appeared stable with some little fluctuations, from 24 theses in 2004 to 90 theses in 2015. A comparison of Master's and Doctoral theses shows that the number of Master's theses is 13.39 times the total number of Doctoral theses. From 2004 onwards, a large number of new research teams began the preliminary research of academic journals at the Master's level from a variety of perspectives, including some profound analysis and discussions, while the fluctuated upward trend in the number of Doctoral theses at the same time shows that this field was not a constantly and increasingly hot topic for in-depth research, but was restricted by the level of disciplinary development for quite a period of time.<sup>[15]</sup>

## Analysis of Chinese institutes that cultivate Masters and Ph.Ds. on academic journal studies

According to the statistical analysis of samples, the number of Chinese institutes cultivating over 10 graduate students in the field of academic journal studies has reached a total of 26 (as listed in Table 1). The Doctoral dissertations completed in these institutes account for 62.71% of the total number of Doctoral dissertations retrieved from the databases; and the Master's theses, 48.99%.

Among the 26 institutes, the National Science Library, Chinese Academy of Sciences (NSLC) (35 theses), Huazhong University of Science and Technology (28 theses), Nanjing University (25 theses), Institute of Scientific and Technical Information of China (ISTIC) (23 theses), Hebei University (19 theses), Peking University (18 theses), Renmin University of China (12 theses), and Wuhan University (11 theses) have established disciplines related to editing and publishing. Except Hebei University, all the other 7 institutes have doctoral programs and have cultivated a total of 59 doctors as high-level talents in the field of editing and publishing (Table 1).

Among 26 institutes, some specialize in library and information science, including NSLC, and ISTIC. This suggests that institutes specializing in library and information science pay great attention to academic journal studies. NSLC has played a relatively leading role in this field, with a total of 35 degree theses, including four Doctoral dissertations and 31 Master's theses, which ranked first nationwide in the total number of theses; moreover, this institute also cultivates the largest number of graduate students in this field. NSLC has established Master's, Ph.D., and Postdoctoral programs for library science and information science respectively, and cultivated a large number of researchers in the field of academic publishing.<sup>[16]</sup> In addition, among 14 publications of this institute, Library and Information Service and Chinese Journal of Scientific and Technical Periodicals are among the top 3 in the field of documentation and information and the field of editing and publishing, according to Peking University's A Guide to the Core Journals of China (2020).<sup>[17]</sup> Other publications include the Journal of Data and Information Science, Data Analysis and Knowledge Discovery, etc., which provide practical opportunities for students involved in NSLC's programs. Likewise, ISTIC has its platforms for research on academic papers, such as Chinese Scientific and Technical Papers and Citations Database Science,<sup>[18]</sup> and runs several academic journals as well. It focuses on journal analysis research and provides training and opportunities for its students.

As is shown in Table 1, 13 institutes are comprehensive

## https://www.editingpractice.com

10000 $1100000000000000000000000000000$
---

Institutes	Number of Doctoral dissertations	Number of Master's theses	Master's programs in editing/publishing- oriented disciplines	Ph.D. programs in editing/publishing- oriented disciplines	Disciplines	Total number
NSLC	4	31	Yes	Yes	Library science and information science	35
Huazhong University of Science and Technology	3	25	Yes	No	Publishing	28
Nanjing University	2	23	Yes	Yes	Library science, editing, and publishing	25
ISTIC	0	23	Yes	Yes	Information science	23
Jilin University	3	17	Yes	No	Journalism, library science	20
Hebei University	0	19	Yes	No	Communication, library science	19
Zhejiang University	0	19	Yes	No	Communication	19
Dalian University of Technology	4	14	No	No	-	18
Peking University	1	17	Yes	Yes	Communication, library science	18
Northeast Normal University	1	15	Yes	No	Communication	16
Central China Normal University	1	15	Yes	Yes	Information science	16
Chongqing University	0	16	No	No	-	16
East China Normal University	1	14	Yes	No	Communication	15
Central South University	1	13	Yes	No	Library science	14
Beijing Normal University	· 0	14	Yes	No	Journalism	14
Zhengzhou University	0	14	Yes	No	Library science	14
Beijing Sport University	1	12	No	No	-	13
North West University	3	9	Yes	No	Library science	12
Renmin University of China	3	9	Yes	Yes	Journalism, communication, media economics	12
Nanjing Agricultural University	1	11	No	No	-	12
Wuhan University	7	4	Yes	Yes	Publication and distribution science, library science, information science	11
Harbin Institute of Technology	1	10	No	No	-	11
Beijing Institute of Graphic Communication	0	11	Yes	No	Publishing	11
Henan University	0	11	Yes	No	Journalism	11
Heilongjiang University	0	11	Yes	No	Library science	11
Shandong University	0	10	Yes	No	Library science	10
Total	37	387	-	-	-	424

NSLC: the National Science Library, Chinese Academy of Sciences; ISTIC: Institute of Scientific and Technical Information of China.

universities. This indicates that a wide range of research in this field is covered by comprehensive universities. Wuhan University has the largest number of Doctoral dissertations (a total of 7) in this field. Moreover, four normal universities, as well as Nanjing Agricultural University and Beijing Institute of Graphic Communication are also on the list; all these institutes have established related disciplines and carried out longterm research and exploration.

# Analysis of disciplines engaged in academic journal studies in China

According to "Catalog of Disciplines for Postgraduate Student Education and Degree Conferment" issued by the Academic Degrees Committee of the State Council (ADCSC), after excluding the theses with no descriptions or irregular descriptions (such as theses on scientific and technological information, biostatistics, English terms for Chinese medicines), we found the distribution of disciplines as shown in Table 2. The theses were distributed among 119 secondary disciplines; the number of theses published in 21 disciplines (covering 17.6% of all disciplines) is 647, accounting for 76.2% of the total number of these (849). It can be thus shown that the systematic study of academic journals as a degree thesis topic is concentrated in these 21 secondary disciplines. Particularly, in four secondary disciplines of information science, library science, communication, and journalism, a total of 292 degree theses were published, accounting for 34.4% of the total number of theses (849), and 45% of the number of theses in the aforementioned 21 secondary disciplines. Therefore, these four disciplines comprise the main body of academic journal studies. For the sake of convenience, we refer to these four disciplines as "editing/publishing-oriented disciplines".

According to the analysis of the research institutes (Table 1), Peking University has three majors related to academic journal studies. These three majors are "library science" and "information science" from Information Management Department, and "communication" from the School of Journalism and Communication. Wuhan University has even more majors involved in academic journal studies. These majors are "library science", "information science", "information resource management", "editing and publishing", *etc.*, which belong to the School of Information Management. This is in accordance to the main research disciplines illustrated in Table 2.

It is noteworthy that in top 7 disciplines listed in Table 2, there are disciplines other than editing and publishing, such as foreign linguistics and applied linguistics, physical education and training, social medicine and health management. In these disciplines, a certain number of research findings targeted on academic journal studies have been published, such as A corpus-based study on the writing errors in 160 Chinese home-made English academic journals by Wu,<sup>[19]</sup> The research on 2005–2011 years of Chinese core journals of physical education of school sports teaching by Xiao,<sup>[20]</sup> The survey analysis and development strategy of medical journal editor's psychological capital by Wang,<sup>[21]</sup> and Bibliometric analysis on TCM journals of Republic of China before 1949.A.D. by Fu.<sup>[22]</sup> These authors conducted in-depth research and statistical analyses of a certain number of journal articles from their professional perspectives. Their findings show, in one aspect, the development of linguistics, physical education, health and medicine.

## Disciplinary analysis of Chinese academic journal studies in the editing/publishingoriented disciplines

In order to clarify the educational situation of academic journal studies in the editing/publishing-oriented

Table 2: Distribution of the disciplines of China Master's and Doctoral theses on academic journals

Ranking	Secondary discipline	Number of theses
1	Information science	138
2	Library science	80
3	Foreign linguistics and applied linguistics	79
4	Communication	47
5	Physical education and training	34
6	Social medicine and health management	30
7	Journalism	27
8	Management science and engineering	26
9	Software engineering	19
10	Computer application technology	18
11	Philosophy of science and technology	18
12	Sports humanistic sociology	18
13	Economics and management of education	17
14	Epidemiology and health statistics	15
15	English language and literature	14
16	Business administration	12
17	History of science and technology	12
18	Curriculum and pedagogy	12
19	Linguistics and applied linguistics	11
20	Translation studies	10
21	Agricultural extension	10
-	98 other secondary disciplines	<10

disciplines in China, this paper will further analyze the data extracted from these four disciplines (information science, library science, communication, and journalism).

According to the China Higher-education Student Information (CHSI) website (http://yz.chsi.com.cn/), the doctoral programs in editing/publishing-oriented disciplines are distributed as follows: 9 programs in communication, 5 programs in library science, and 6 programs in information science. A comparison between the information retrieved from this website and the number of degrees and disciplines in the editing and publishing areas in China (Table 3) shows that China's editing and publishing areas are relatively dispersed, and their graduates are ultimately awarded two types of degrees, in literature and in management respectively. The editing/publishing-oriented disciplines in which a degree in literature can be won include journalism, communication, publishing, etc. The editing/publishingoriented disciplines in which a degree in management can be won include the primary discipline of "library, information and archive management" and two secondary disciplines "library science" and "information science".

Joble 3	The number	of dogroop	and dicain	lunae in the	aduting and	nubliching	aroac in ('hina
laule o.	The number	UI UEULEES	and discip	лнез нт не	euiunu anu	DUDIISIIIIIU	

Primary discipline	Secondary discipline	Doctoral programs	Professional Master's degree programs	Academic Master's de- gree programs
Literature—journalism and communication	-	10	-	72
Literature—publishing	Publishing	-	2	-
Management—library, information, and archive management	Library science	5	-	41
	Information science	6	-	62
Total	-	21	2	175

## Word frequency analysis of Chinese academic journal studies in the editing/ publishing-oriented disciplines

The analysis of high-frequency keywords can reflect the research foci and hotspots from a certain perspective. After extracting and calculating the keywords from our samples, we find the total frequency of keywords in the 849 samples of Chinese theses is 3,881 times. As to the keywords in the areas of editing and publishing, the total frequency is 1,411, which means an average of 4-5 keywords per thesis. The number of indexed keywords has two implications: it reflects the scope of the research contents in the theses, as well as the validity of the indexing depth.<sup>[23]</sup> The more keywords a thesis has, the easier it is to be searched. The keywords can be divided into two categories: one describes the objects of the research, such as scientific journals, academic journals, research papers, core journals, professional journals, electronic journals, etc.; the other category describes the main content of the research, such as bibliometrics, open access, citation analysis, periodical evaluation, impact factors, index system, h index, evaluation index, academic influence, corpus, academic quality, article analysis, and so on.

In order to focus on the theme of our research, we eliminated the high-frequency keywords that describe the objects of the research, and examined the topics concerning editing and publishing to reveal the research hotspots. In this study, 28 keywords with a frequency of 10 or more were obtained, and after merging synonyms such as "open access", "periodical evaluation" and "periodical assessment", we finally obtained 26 highfrequency keywords (Table 4) with a total frequency of 551.

As can be seen from Table 4, the analysis of journal data and the establishment of a journal evaluation system are the most important research themes, including bibliometrics, citation analysis, journal evaluation, impact factors, indication system, h index, evaluation indicators, citation analysis, *etc.*, and these keywords account for 32.4% of the total high-frequency keywords. The word "bibliometrics" is relatively general, and therefore, some theses use keywords such as "citation analysis", "impact

## Table 4: High-frequency keywords in Master's and Doctoral theses ( $n \ge 10$ )

Ranking	Keywords	Frequency
1	Open access	60
2	Editing and publishing	49
3	Journal evaluation	44
4	Citation analysis	38
5	Evaluation indicators	29
6	Periodical management	28
7	Bibliometrics	25
8	Development strategy	23
9	Academic levels	21
10	Periodical dissemination	20
11	Periodical quality	20
12	Journal articles	20
13	Library, Information, and Archive Sciences	16
14	Library	15
15	H, g, gc, ah index	15
16	Resource construction	15
17	Competitiveness	14
18	Impact factor	13
19	Core journals	13
20	Journal database	11
21	Journal internationalization	11
22	Academic communication	11
23	Periodical benefit	10
24	Thematic analysis	10
25	Author analysis	10
26	Searching platform	10

factors", "h index", "evaluation indication", *etc.*, to specify the particular aspect of bibliometrics. Moreover, open access, a movement that caused the reform of journals, facilitated the development of journals, and promoted academic exchanges, has been given enormous attention. "Open access", as a keyword, ranks first in frequency (up to 60 times). In recent ten years, the number of papers on open access has been increasing as time goes by. It grows from 1 in 2005 to 12 in 2014 (Figure 2). The research direction starts from the overview of open access<sup>[24]</sup> and goes further into the influence of open access journals<sup>[25]</sup> and open publishing,<sup>[26]</sup> *etc.* It can be observed from Table 4 that open access, editing and publishing, journal evaluation, citation analysis, evaluation indication, and periodical management are the foci of research. The main research directions cover all fields of academic journal development such as the evaluation, management, development, dissemination, academic quality, competitiveness, internationalization, and platform construction of academic journals. Meanwhile, areas related to the development of journals, such as library and information science, are also studied, and the facilitating effect of academic journals on academic exchanges is also one of the hotspots.

We selected institutions whose highly frequent keywords ranked top 5 as our analysis objects (Table 5), including NSLC, ISTIC, Nanjing University, Hebei University, and Zhengzhou University. These five institutes have



Figure 2. The amount of China Master's and Doctoral theses on open access.

different inclinations in their selection of research directions. NSLC has a wide research range, covering the internationalization of journals, journal evaluation, open access, etc., and excels in several hot topics, such as the retracted papers and the guarantee system of periodicals. One of the typical theses from NSLC is Fan's the Bibliometric Analysis of Retracted Articles and Study of Its Research Misconduct Control.<sup>[27]</sup> ISTIC has information science as its main research field. Therefore, its researches are concentrated on the bibliometrics of academic journals, including cross reference, direct citation, indirect citation, zero citation, etc. Nanjing University focuses on journal evaluation, brand building, periodical management, and so on. Hebei University has conducted more specific researches, including the setting of periodical column, journal characteristics, topic selection and copyright agreements. Zhengzhou University, with its in-depth research on open access, academic exchanges, and journals development, is more focused on the macroscopic trends and changes in academic journals.

## Comparison and analysis of data of China Masters' Theses/Doctors' Dissertations Full-text Database during 2016–2021

A total of 444 Master and Doctor theses were published



Figure 3. Comparison of China Master's and Doctoral theses of China Masters' Theses/Doctors' Dissertations Full-text Database during 2016–2021.

Table 5: Research	directions of the to	o 5 institutes with the	e greatest number of theses	s with high-frequency	keywords
-------------------	----------------------	-------------------------	-----------------------------	-----------------------	----------

Educational institute	Number of theses	Research directions
NSLC	27	Journal internationalization, journal evaluation, open access, open publishing, online journal develop- ment, journal service system, journal development, journal cluster, periodical management, long-term preservation, journal brand, academic quality, journal publication, periodical dissemination, peer review, digital publishing, data publishing, academic misconduct, journal usage statistics, journal competitiveness, electronic journal, retracted papers, guarantee system of periodicals
ISTIC	22	Interdisciplinary journals, open access, cross-citation in journals, copyright transfer, periodical publishing models, journal evaluation, zero citation, competitive intelligence, rules of academic authorship, journal language layout, journal publishing, journal competition, electronic journal, journal internationalization, cross reference, online full text, digital publishing, highly cited papers, editing system, quality control
Nanjing University	21	Web citation, journal article classification, journal evaluation, highly cited papers, professional journal, periodical construction, periodical management, journal brand, functional alienation of journals, electron- ic journal
Hebei University	16	Journal database, periodical benefit, periodical dissemination, periodical column, selection of topics for journals, journal evaluation, open access, web editing, copyright agreements, journal characteristics, journal influence, research methods, change of published papers
Zhengzhou University	12	H index, network reference, open access, academic exchange system, journal citation, journal develop- ment, document development, journal evaluation, archival research

NSLC: the National Science Library, Chinese Academy of Sciences; ISTIC: Institute of Scientific and Technical Information of China.

from 2016 to 2021 according to the statistics of CMFD data set of CNKI (Figure 3). The overall trend is a small increase first and then a slight decrease. On average, 74 theses are published every year, which is a stable period after the linear growth period (Figure 1). Among them, there are 382 Master's theses. The total number of theses from 2016 (61 pieces) to 2021 (56 pieces) has not changed much. The average number of theses is 61.7 per year, which remains stable. There are 62 Doctoral dissertations, with an average of 11.3 each year. The number of Doctoral dissertations has declined significantly, 3.2 times that of 2021 in 2016. Therefore, the fluctuation of the total number is mainly caused by the Doctoral dissertations. Similar to the research results, Nanjing University, Wuhan University, Central China Normal University etc. are in the forefront of Chinese institutes; the discipline analyses are still dominated on journalism and communication, library and information science, language, and education.

## Hotspots on scientific journals of two sets of China National Knowledge Infrastructure during 2016–2021

After removing the keywords describing the objects of the research, we analyze the keyword word frequency of the top 200 literature of each data set from 2016 to 2021 (Table 6). Keyword word frequency of the Master's and Doctoral theses involves 87 times bibliometric analysis, including impact factor, bibliometrics, citation frequency, journal evaluation, citation analysis, evaluation indicator, and quantity of published articles. In addition, publishing and distribution and journal influence have high word frequency. Except for corpus, an obvious linguistic research term, other terms are academic journal research terms. In particular, social media is a relatively new research field (Table 6) with a frequency of 6. The open access and periodic management in Table 4 are not in the list anymore.

In contrast, the academic journals database data set has retrieved 52,221 items of academic journal related research in 2016–2021, which is 117 times of the number of Master's and Doctoral theses. Different from the high-frequency on bibliometric of CMFD, the research frequency in the field of academic journal communication of Academic Journals Database has reached 80 times, including journal influence, media conversion, push, communication power, and new media platform, which is a hotspots field of academic journals (Table 6).

## DISCUSSION

From the data analysis we can see that the number of Master's and Doctoral theses has grown rapidly, from one or two in 1990s to 180 in 2015. This shows that a large number of postgraduates were engaged in research of editing and publishing, especially interested in academic journals. Similar to postgraduates in engineering<sup>[28]</sup> they graduated from different majors and directions and worked in the field of academic publishing need to be verified, but their studies will certainly promote the research and development of academic publishing. From the perspectives of educational institutes, discipline analysis, and research hotspots, it clearly shows a picture of diversified prosperity.

Through analyzing high-frequency keywords, (1) till 2015, we find Chinese research of academic journals

Table 6: Comparison of high-frequency keywords of two data sets

Ranking	China Masters' Theses/Doctors' Dis Full-text Database	sertations	Academic Journals Database		
	Keywords	Frequency	Keywords	Frequency	
1	Publishing and distribution	21	Development of scientific journals	36	
2	Impact factor	20	Publication of scientific journals	21	
3	Bibliometrics	13	Journal influence	18	
4	Citation frequency	13	Media convergence	17	
5	Journal evaluation	11	Push	13	
6	Journal influence	11	Editor of scientific journals	12	
7	Citation analysis	11	WeChat official account	12	
8	Evaluating indicator	10	English journals	11	
9	Quantity of published articles	9	Peer review	11	
10	Corpus	9	Academic misconduct	10	
11	WeChat official account	8	Communication power	10	
12	Internationalization of journals	7	New media platform	10	
13	Academic research	7	Impact factor	10	
14	Academic publishing	7	Academic community	9	
15	Social media	6	First-class journal	9	

is mainly based on their own development. Among the 26 high-frequency keywords, there is only one keyword "Journal internationalization" suggesting Chinese journals should communicate with and learn from other international journals. Few Master's and Doctoral theses focus on the comparison between Chinese and foreign journals or foreign journals, not suiting the internationalization trend of scientific communication. Especially in the fields of open access, development strategy and dissemination, appropriate references to the practice of elite foreign journals will expand the perspective of Chinese academic journals to the whole globe. It will encourage Chinese academic journals to participate in international exchanges and cooperation, and to improve the level of academic journal studies on a broader platform. (2) From the data analysis during 2016-2021, a large number of researches in Master's and Doctoral theses focus on bibliometrics, which is similar to the results in Table 4. However, the research on open access in Table 4 is no longer a hot topic, WeChat official account has shown a certain frequency and be a new topic.

According to data of Academic Journals Database, a large number of studies have focused on the field of communication. Media convergence, new media platform, new media communication, and WeChat official account are the research hotspots, which are consistent with the data of CMFD, but are more abundant, comprehensive, and pay more attention to communication and integration. Trends 2026 indicated that throughout the next three to five years, there will be a sharp risk of open access within scholarly communications, which is open at scale, and will be many new opportunities for scalable tools for knowledge discovery on massively available content.<sup>[28]</sup> Therefore, the future research field of scientific journals will focus on large-scale open access, large-scale and scalable just discovery, and constantly rebuilt academic communication ecology.

In terms of disciplinary construction and talent cultivation, the disciplinary analysis shows that academic journals research has practical significance and interdisciplinary characteristics, covering information science, library science, communication, journalism and other disciplines. It integrates massive concepts from the disciplines of literature and management, and the scope of the papers published in academic journals are highly professional. Thus, it requires both researchers and journal practitioners to have abundant professional background knowledge. Meanwhile, universities and research institutes in China should establish the special research direction of academic journal studies, set up relevant disciplines and majors to integrate diversified knowledge from the disciplines of literature and management, and implement information literacy education.<sup>[29]</sup> They can also provide the long-term and professional training of editing and publishing expertise for the academic journal practitioners to help them become scholarly editors "with one specialty and multiple abilities".<sup>[30]</sup> This will improve the ability of academic journal practitioners, facilitate the academic exchanges focusing on academic journals, and give impetus to the academic publishing industry.

## DECLARATIONS

## Acknowledgement

I want to thank Ruiying Luan contributed to this paper and Yue Zhao for the help of data collation and analysis.

## Author contributions

Li Han: Conceptualization, Writing-Original draft, Formal analysis, Manuscript modified.

## **Conflict of interest**

The author has no conflicts of interest to declare.

## REFERENCES

- Liu X. [The world's largest number of Chinese natural science papers exceeds that of the United States]. People's Daily Online. Accessed September 5, 2022. http://scitech.people.com.cn/n1/2020/0811/ c1007-31817767.html
- Digest of Japanese Science and Technology Indicators 2022. National Institute of Science and Technology Policy. NISTEP Research Material No.318. Accessed October 1, 2022. https://www.nistep.go.jp/ en/?p=5315
- [Composition of evaluated journals]. In: Annual report for Chinese Academic Journal Inmact Factors (Natural Science). China Academic Journals (CD Edition) Electronic Publishing House; 2020:I–XV.
- Yue T, Yang LY, Zhai YQ, *et al.* [Annual report on scientific research in China 2016:statistics and analysis of SCI-indexed papers and citations]. *Sci Focus.* 2017;12(1):1–32.
- Ma R, Qin XQ. Individual factors influencing citation competence in L2 academic writing. J Quant Linguist. 2017;24(2-3):213–240.
- Li QC, Zhang X. An analysis of citations in Chinese Englishmajor Master's theses and Doctoral dissertations. J Engl Acad Purp. 2021;51:100982.
- Kushkowski JD, Parsons KA, Wiese WH. Master's and d thesis citations: analysis and trends of a longitudinal study. *Portal-Libr Acad.* 2003;3(3):459–479.
- Zong QJ, Shen HZ, Yuan QJ, Hu XW, Hou ZP, Deng SG. Doctoral dissertations of Library and Information Science in China: a co-word analysis. *Scientometrics*. 2013;94(2):781–799.
- Hollmann M, Borrell C, Garin O, Fernández E, Alonso J. Factors influencing publication of scientific articles derived from Master's theses in public health. *Int J Public Health*. 2015;60(4):495–504.
- Urda-Cîmpean AE, Bolboacă SD, Achimas-Cadariu A, Drugan T. Scientific journal articles output from medical Doctoral theses. A comparative study. *Appl Med Inform.* 2016;38:81–90.
- Lu JJ, Tan ZY. [The status and development of domestic and foreign information science education from Doctoral thesis]. *Inf. Sci.* 2016;34(3):161–165.
- Jeong KH, Yong LK. [An analysis of research treads about secondary STEAM in Korea: focusing on Master's and Doctoral dissertations]. J Learner-Centered Curric Instr. 2022;22(14):607–624. (in Korean)

#### Han • Volume 1 • Number 3 • 2023

- Jiang T, Huang ZT, Li X, Lv BY, Chen QB. [A perspective on the progress of forest park research through statistical analysis of the Doctoral and Master's dissertations in China]. J Sichnan Forest Sci Tech. 2016;37(1):92–96.
- Qu H, Wang BX, Bai LJ. [Document requirements: citation analysis of degree paper majoring in aquaculture]. J Libr Inf Sci Agric. 2011;23(9):74–78.
- Gao XL, Yang HX, Fu ZQ, Liu F. [Academic journals and associated subjects complement each other]. *Acta Editologica*. 2014;26(1):71–73.
- [General situation of postgraduate education]. National Science Library, Chinese Academy of Sciences. Accessed October 1, 2022. http://www. las.cas.cn/yjsjy/
- [Library and information service]. National Science Library, Chinese Academy of Sciences. Accessed October 1, 2022. http://www.las.cas. cn/xscbw/tsqbgz/
- ISTIC. China Science and Technology papers statistics and analysis network. Accessed October 1, 2022. http://www.cstpcd.org/
- Wu PP. [A corpus-based study on the writing errors in 160 Chinese home-made English academic journals]. Hangzhou: Zhejiang University. 2015. (Thesis)
- Xiao L. [The research on 2005–2011 years of Chinese core journals of physical education of school sports teaching]. Beijing: Beijing Sport University. 2013. (Thesis)
- Wang YL. [The survey analysis and development strategy of medical journal editor's psychological capital]. Hebei: Hebei United University.

2014. (Thesis)

- Fu SW. [Bibliometric analysis on TCM journals of Republic of China before 1949.A.D.]. Beijing: China Academy of Chinese Mdcical Sciences. 2015. (Thesis)
- Wang ZJ, Li ZM, Xie LN. Analysis of keyword distribution characteristics of foreign information science graduate students. *Inf Stud Theory Appl.* 2011;34(1):1–5.
- 24. Wang YK. [Open access publishing of scientific scholarly journals in China]. Beijing: Peking University. 2006. (Thesis)
- Zhou JP. [The study on academic influence of open access journal]. Changchun: Jilin University. 2013. (Thesis)
- Li L. [A study on the key factors of driving forces for open access publishing of STM publishers ]. Beijing: National Science Library, Chinese Academy of Sciences. 2014. (Thesis)
- Fan SP. [The bibliometric analysis of retracted articles and study of its research misconduct control]. Beijing: National Science Library, Chinese Academy of Science. 2015. (Thesis)
- Choe NH, Borrego M. Master's and Doctoral engineering students' interest in industry, academia, and government careers. J Eng Educ. 2020;109(2):325–346.
- 29. Forecasting the Future. STM. Accessed October 1, 2022. https://www.stm-assoc.org/standards-technology/stm-trends-26/
- Huang RH, Li BY. Data literacy education: expansion of information literacy-instruction in the big data era. *Doc Inf Knowl.* 2016;0(1):21–29. (1):21–29.

#### https://www.editingpractice.com