



Visualization Analysis of Chinese Traditional Music Literature Based on CNKI in the Past Four Decades (1979–2019)

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Abstract. This paper has conducted a bibliometric analysis of 289 papers entitled “Chinese traditional music” and published in CSSCI and core music journals of Peking University over the four decades, from 1979 to 2019, with the help of CiteSpace. This paper focuses on the external characteristics of Chinese traditional music research, such as the overall change trend, journal distribution and core authors. The study also aims to explore the thematic content and frontier analysis of Chinese traditional music research through the keyword cluster analysis. This paper has found that: 1. In terms of publication, “quantity and quality” tend to grow simultaneously; 2. In terms of research strength, there is a trend of “more quantity and less cooperation”; 3. In terms of research hotspots, it shows the characteristics of “theme concentration and perspective extension”.

Keywords: Chinese traditional music · Core journal papers · Literature review · Visualization analysis · CiteSpace software

1 Introduction

Research on the literature review of Chinese traditional music has always been a matter of greater concern. During the forty years from 1979 to 2019, China’s relevant experts and scholars in music circle have never stopped researching and exploring Chinese traditional music, and have published considerable research literature, making great contributions to advancing the study of Chinese traditional music. From the research progress of the literature collected in 40 years, the studies on Chinese traditional music in CNKI mainly focuses on the following four aspects: (1) Review and prospect of Chinese traditional music; (2) Academic norms and innovation in Chinese traditional music; (3) Discipline construction of Chinese ethnomusicology; (4) Aesthetic issues of Chinese traditional music. Unlike the previous literature studies, this paper mainly focuses on the bibliometric analysis of research literature on Chinese traditional music over the 40 years from 1979 to 2019, so as to understand the development of Chinese traditional music research, sort out overall trends, journal distribution, core authors and other external characteristics of the music research, and explore main content and trends of the music research, thus deriving the research’s major achievements and development and context in the past 40 years.

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2 Data Sources and Research Methods

2.1 Data Sources

Chinese core journals from 1979 to 2019, which are collected in CNKI, China Academic Journal Network Publishing Database, are taken as the journal sources, including 10 types of music core journals, such as the CSSCI Chinese core journals (including extended versions) of Nanjing University from 2017 to 2018 and the Chinese core journals of Peking University from 2018. In order to collect literature more comprehensively and obtain more information, the deadline for collecting literature in this study is December 31, 2019, with 289 valid articles in total finally (retrieval mode: the title which includes “Chinese traditional music”).

2.2 Research Methods

The research contents focus on the hot issues at the frontier of Chinese traditional music research, the grasp of the research subject development in the discipline, the interaction between disciplines, and the selection of key scholars or research institutions. Thus, this study adopts bibliometric and visualization analysis methods to analyze the relevant literature on Chinese traditional music research in a quantitative way with the help of information technology and the aid of knowledge mapping analysis tool, CiteSpace (citation space) software.

Having reviewed the literature, this paper finds that so far, no CiteSpace software has been applied to the literature study of Chinese traditional music. Therefore, through this method, this paper tends to analyze the core journal papers on Chinese traditional music literature included in CNKI visually and the development cycle, research hotspots and frontiers of Chinese traditional music, and draw conclusions on the literature study based on the analysis results.

3 Variation Trends in Quantity of Core Journals

3.1 Quantity Comparison

Through studying the changes in the quantity of literature in each discipline, the research cycle, hotspots and frontiers of the discipline can be understood, and the its future development of literature can also be grasped, which is an important tool to study the development of the discipline. Core journals refer to “professional journals that have considerable professional information and high quality, can represent the development level of the professional discipline and are valued by its readers” (Bie Liqian, Hejun 2012:100–105). Hence, it is of great significance to understand the research literature on Chinese traditional music in core journals. To reflect the quantity of publications of Chinese traditional music more clearly, this paper has counted the quantity of papers in 10 core journal papers from 1979–2019 under the titles of Chinese traditional music, Western music history and Chinese music history. From 1979 to 2019, the quantity of core journal papers with the titles of Western music history and Chinese music history are 59 and 104 respectively, which are lower than that of Chinese traditional music, indicating that the research on Chinese traditional music is significantly more popular than that of Western music history and Chinese music history.

3.2 Quantity Changes

Counting the inter-annual changes in the quantity of core journal papers titled Chinese traditional music during 1979–2019, it can be found that the papers on Chinese traditional music in music core journals started in 1982, with only 1 paper, Chinese Traditional Music and National Musical Instruments (Report at Upottery, UK) published in Chinese Music in December 1982 by Zhu Feng (Zhu Feng 1982:36–38). Because the quantity of core journal papers on Chinese traditional music before 1982 and 1982–1986 is both 0, the statistics in 1982 and 1987–2019 are compiled, the quantity of core journal literature on Chinese traditional music showed an overall upward trend during the period 1979–2019. Among them, the quantity in 1982–2006 is below 9, except for 1991 and 2003 when the quantity of papers reaches 12 and 13 respectively, indicating that the quantity of core journal literature on Chinese traditional music research is small before 2006. It begins to increase from 2007, with the exception that there are only 3 core journal papers on Chinese traditional music in 2009 also occurs, being the smallest number during this period. The number in 2013 and 2019 is 8 and 7 respectively, not exceeding 10 either, while the number in other years is over 10, among which 2011 has 23, being the highest number, and 2016 with 22 papers is the second highest.

4 Analysis of Research Hotspots and Frontiers in Core Journals

4.1 Intellectual Base Content

Intellectual Base (IB) refers to citations of literature containing vocabulary of research frontier terms; which virtually reflect the absorption and the utilization of concepts of the research frontier in scientific literature (Ren Zengyuan, Sun Yue 2013:14–19 + 54). The 289 papers on Chinese traditional music in 10 core journals of music included in CNKI from 1979 to 2019 are collected, the journal that published the largest quantity of papers on Chinese traditional music is Music Research, which has published 64 papers, followed by Chinese Music and People's Music, with 52 and 50 papers, respectively.

4.2 High Frequency Keywords and Subject Words

As the core words most closely related to the themes of the papers, keywords play an overview and refining role for the content of the papers and can reflect the themes of the articles to a certain extent. Besides the keywords of the papers, the subject words of the papers also play a significant role in summarizing the content of the papers. CiteSpace software is used to analyze the co-occurrence network of keywords and subject words of 289 core journal papers, and a mixed co-occurrence network map is obtained, as shown in Fig. 1.

There are a total of 695 nodes and 2010 connections in Fig. 1, where the keywords and subject words with high frequency are Chinese traditional music, ethnomusicology, Chinese traditional musicology, and Chinese traditional music culture, etc.

Through the co-occurrence visualization network map of high frequency keywords and subject words, the ranking analysis of the frequency and the centrality (The centrality value is calculated by CiteSpace software, and the centrality of a keyword plays a role of

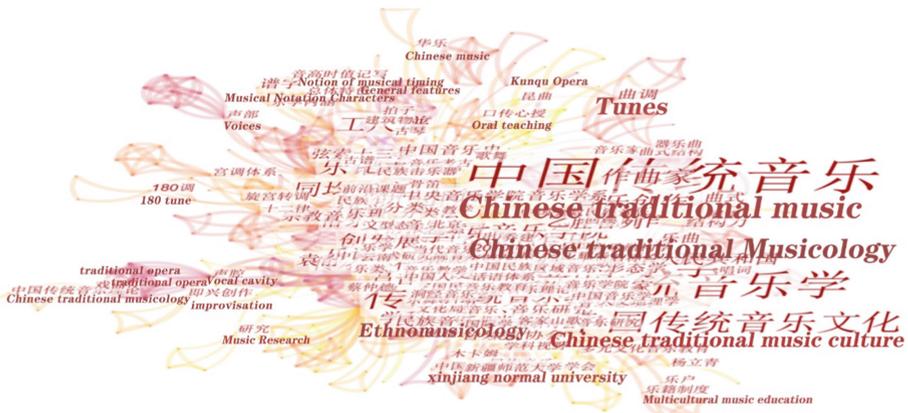


Fig. 1. Mixed co-occurrence network map of keywords and subject words

Table 1. Ranking analysis of frequency and centrality of keywords and subject words

Serial number	Keywords and subject words	Frequency	Percentage	Centrality
1	Chinese traditional music	142	2.6865%	0.61
2	Chinese traditional musicology	44	1.2434%	0.28
3	Ethnomusicology	30	1.1224%	0.18
4	Traditional music	26	1.0013%	0.15
5	Chinese traditional music culture	16	0.9083%	0.15
6	Disciplines	10	0.7372%	0.05
7	Seminars	10	0.7372%	0.04
8	Music works	9	0.7041%	0.03

“intermediary” in the whole knowledge map and controls the interconnection between two nodes because the stronger the centrality of a keyword, the greater the chance that the keyword occurs together with other keywords in the co-occurrence map) of keywords and subject words in literature can be conducted as presented in Table 1.

As can be seen in Table 1, the keywords and subject words with centrality above 0.1 are Chinese traditional music, Chinese traditional musicology, ethnomusicology, traditional music, and Chinese traditional music culture respectively.

5 Author Analysis of Core Journal Papers

5.1 Distribution of Authors

The author analysis of research literature is an essential part of the literature analysis, as it contributes to the understanding of the distribution of researchers within a professional

field, the participation of researchers and the team of authors in a discipline or research field. Analyzing the authors of core journal papers on Chinese traditional music from 1979–2019, this study can explore the quantity of Chinese traditional music researchers involved and co-authors, identify high-level researchers in this field, and provide an overall perception of the status of researchers in this field.

5.1.1 Publication Quantity of Authors

High-yielding authors represent a group with higher academic achievements in this field and according to Price, “the quantity of papers published by core authors is equal to 0.749 times the square root of the quantity of papers published by the most prolific authors in the statistics” (Zhao Jiming, Shu Mingquan 2008:98–102). The quantity of authors who have published more than 5 core journal papers on Chinese traditional music during 1979–2019 is 10, and they are highly prolific core authors, among whom Wang Yaohua is the most productive author, having 11 papers published, followed by Du Yaxiong, Huang Xiangpeng, Dong Weisong, Xiao Mei, Cai Jizhou, Feng Guangyu, Li Jiti, Zhang Boyu, and Fan Zuyin.

5.1.2 Citation Frequency of Author’s Papers

Citation frequency per paper is a common measure of the influence and quality of literature, and it’s an important indicator of the author’s academic level. Therefore, the top 10 authors in terms of citation frequency in core journal papers during 1979–2019 are counted. *On Preservation and Development of Chinese Traditional Music* published in *Musicology in China* in December 1987 by Huang Xiangpeng has the highest citation frequency of 280. The second highest frequency is Liu Fulin, who has only one core journal in the statistical year, and the authors rank 3rd and 4th are Cai Jizhou and Qiao Jianzhong, with 116 and 107 citations respectively, while the frequency of other authors are below 100.

5.1.3 Academic Institutions of Authors

As the research institutions are the support of authors to conduct their academic research, the combing of the quantity of papers, therefore, can partly reflect the overall development of research institutions, and the major academic units from which papers are published can also be sorted out. Hence, the statistics of research institutions with more than 3 papers published during 1979–2019 are collected.

The research institutions that publish more than 2 papers are mainly colleges and universities, with a total of 9, and research institutes or associations with 2. Among them, the research institution ranking first in the quantity of papers is China Conservatory of Music with 24 papers; the second institution is Central Conservatory of Music with 21 papers; and Fujian Normal University with 17 papers, the academic institution publishing the most core journal papers on Chinese traditional music among local institutions, ranks third.

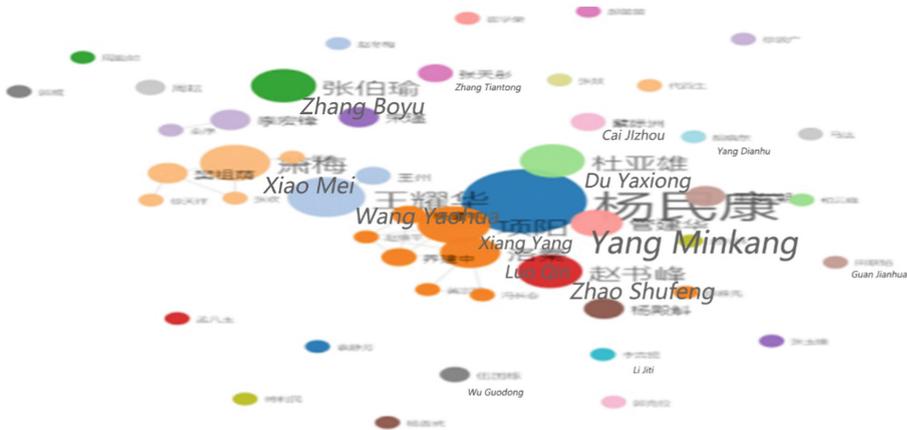


Fig. 2. Author cooperation knowledge map

5.2 Cooperation of Authors

5.2.1 Cooperation of Researchers

Understanding the cooperation of researchers in a subject area can, to some extent, reflect the development of the subject research, and it is researcher cooperation that can be demonstrated by the authors of journal papers. For this reason, author co-occurrence knowledge map in CiteSpace is applied as displayed in Fig. 2.

According to Fig. 2, the cooperation network density of authors of core journal papers in this article has been calculated and the value is 0.0176 (the value is the output of author cooperation network mapping by CiteSpace). Such a low value shows that the overall connectivity between authors is relatively low during the 40 years, with loose cooperation network connection of authors of their papers and little academic cooperation between authors since most research is individual-based. Moreover, the analysis of the cooperating authors reveals that they are usually from the same academic institution or unit.

5.3 Cooperation of Research Institutions

Current researchers in Chinese traditional music are mainly from research institutions of colleges and universities, music associations, and art academy. Many of them are teachers in colleges and universities and have rich teaching experience since they have engaged in teaching Chinese traditional music for a long time. In the teaching process, they find many practical problems and carry out relevant academic research based on these problems, to some degree, realizing the combination of theoretical and practical research on Chinese traditional music. From the current research literature, researchers mainly focus on several key music colleges such as China Conservatory of Music, Central Conservatory of Music, Shanghai Conservatory of Music, and Fujian Normal University. The cooperation knowledge map of research institutions studying Chinese traditional music is mapped in this paper by CiteSpace, as shown in Fig. 3.



Fig. 3. Institutional cooperation knowledge map

Figure 3 reveals that the density of the cooperation network of the research institutions is small, only 0.0003 (this value is the output of the institutional cooperation network mapping by CiteSpace). The cooperation knowledge map indicates that the frequency of cooperation among research institutions is low and loose, but some institutions, such as China Conservatory of Music, Central Conservatory of Music, Music Research Institute in Chinese National Academy of Arts, prominently plays a central role in the cooperation network at the same time.

6 Conclusion

Through using the knowledge visualization analysis tool, CiteSpace, the data, based on 289 core journal papers titled “Chinese traditional music” from 1979–2019 on CNKI, has been measured and analyzed in this paper. From 1979 to 1990, the quantity of core journal papers on Chinese traditional music is small, only 17; but from 1991 to 2000, the number begins to increase, reaching 46; from 2001 to 2010, it boosts rapidly, up to 78; and from 2011 to 2019, the largest number is accumulated 148. From above, several conclusions can be drawn as follows.

In terms of publication, “quantity and quality” tend to grow simultaneously. In terms of the quantity of literature, the quantity of core journal papers from 2011 to 2019 reaches 148, accounting for over half of the total literature, demonstrating that the research on Chinese traditional music has gradually increased in the last decade. With the establishment of Xi Jinping’s thought on socialism with Chinese characteristics for a new era as the guiding ideology of the Party and General Secretary Xi’s emphasis in the report of the 19th National Congress of the CPC that “we must inherit the excellent Chinese

traditional culture and build up socialist cultural confidence,” the research has received more attention from scholars in the academic world definitely, leaving the quantity of publications also reaching a new peak in 2019.

In terms of research strength, there is a trend of “more quantity and less cooperation”. There are 28 research institutions with more than 2 publications in 289 papers, including 24 colleges and universities and 4 research institutes or associations. Art colleges and universities are the majors to study Chinese traditional music, such as Central Conservatory of Music and China Conservatory of Music. Based on CiteSpace’s knowledge mapping analysis on “Chinese traditional music” research, there are 10 authors publishing 5 or more core journal papers between 1979 and 2019, and they are highly productive core authors, among whom Wang Yaohua is the most prolific author, with 11 papers published. In terms of the citation frequency, the top 10% of authors are 28 in total, all with frequency between 26 and 280, and *On the Preservation and Development of Chinese Traditional Music* by Huang Xiangpeng gains the highest frequency. However, in terms of the cooperative relationship between each other, the overall connectivity is weak, both among researchers and research institutions, and the overall density of the cooperation network, the state of cooperation, and the frequency of cooperation are all low or loose, indicating that the cooperation among major researchers and research institutions still needs to be strengthened.

In terms of research hotspots, it shows the characteristics of “concentrated theme and extended perspective”. Through keyword co-occurrence analysis, in this article, 5 main keywords, namely Chinese traditional music, Chinese traditional musicology, ethnomusicology, traditional music and Chinese traditional music culture, are found much higher in frequency than other keywords. The five keywords are highly focused on the theme of “Chinese traditional music”, reflecting the high concentration of research themes in this field. Then, how to conduct research around this core theme or from which perspective involves the selection of specific research contents. The high-frequency keywords, except for the above-mentioned five subject words, are basically keywords related to the research content, not having relatively huge disparity in the frequency and centrality of each content keyword. If these content keywords are categorized and sorted out, it can be found that academic world have performed comprehensive and in-depth research on the core theme, “Chinese traditional music”, from multiple perspectives of music ontology, cultural origin, cultural background, cultural change, music education and geographical distribution, thus reflecting the extension and expansion of research perspectives.

In the past forty years from 1979 to 2019, Chinese scholars have researched many aspects in Chinese traditional music from both macro and micro levels and multiple perspectives, making abundant research achievements and providing it a theoretical basis. But, literature analysis has revealed that this research method still has shortcomings. The articles collected is limited to titles including “Chinese traditional music” in CNKI. Thus, some articles that do not include such titles are not included, though their contents may be related to Chinese traditional music. In addition, some articles, which are not

published in core journals but related to the topic, are not collected. It is hoped that the above limitations can provide some new guidance for further research.

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[3] the Teaching Research Project of China University of Geosciences(Wuhan)in 2021 (No.2021A37), *Research on the Construction and Practice of University Aesthetic Education System*.

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