

Academic Influence Analysis of Highly Cited Paper on Research on "Beethoven Piano Sonata" Based on Citespace

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ABSTRACT

Based on Citespace literature measurement software and using visual analysis technology, this paper takes the literature in the research field of Beethoven's piano sonata in CNKI music journals from 1979 to 2019 as the research object. The research data show that: (1) Since 1979, the research literature in the field of Beethoven piano research in China has gone through three stages: germination stage, development stage and maturity stage. (2) The core author and the core institution are still in a relatively independent state, with few connections. (3) The future development needs to reduce the relative independence of researchers and research institutions, give play to the linkage effect, and cooperate with each other to make the research develop in a deeper and more comprehensive direction.

Keywords: Beethoven piano Sonata, visualization, highly cited

1. INTRODUCTION

1.1 Data sources and research methods

1.1.1. The Data source

The data used in this paper are all from CNKI, and the retrieval date was set as early as January 1, 1979 (starting from the reform and opening-up policy) and as late as December 31, 2019. In the advanced search, 869 references were obtained by inputting the theme of Beethoven sonata and Beethoven piano sonata respectively. [1]

1.1.2 Research Methods

The software used in this paper is Citespace compiled by Professor Chen Meichao, which draws a visual map through a series of approaches such as data transformation, so that researchers can have a more comprehensive understanding of the discipline, help analyze the development context of the discipline, identify the characteristics of the development of the discipline, and help predict the future development trend of the discipline.

Firstly, the literatures retrieved from CNKI were screened and 676 literatures that needed to be retrieved by Citespace were obtained. Then, the literatures were converted into a format that could be analyzed by Citespace. Among the parameters related to Citespace function and parameter page setting, the time span is set from 1979 to 2019, the time slice is set as 1, the Node Type selects Keyword, and the Keyword co-word network cluster is obtained. In this way, authors and institutions are selected to obtain the

corresponding visual atlas, forming the research process and framework structure of Beethoven piano sonata research field, and presenting the research status, research hotspots and research development fronts of this field in a visual form.

1.2 Research status of Beethoven's piano Sonata literature

1.2.1. Time and quantity analysis of literature

This paper collects 676 valid literatures from CNKI for research, and finds that the literatures on the research field of Beethoven piano sonata show an increasing trend year by year. (see chart 1) As you can see from the figure, there are three stages so far:

The first stage (1978 ~ 2001) is the embryonic stage

In this stage, the number of published papers is relatively small, with the average annual number of published papers not exceeding 10. This stage was in the early stage of reform and opening up. After the end of the Cultural Revolution, the academic field liquidated the extremely "left" line, summed up the experience and lessons, and proposed that literature and art should belong to the people, serve the people and serve socialism. Under this situation, studies in the field of literature and art revive again. At this stage, due to the weak research level and the scarcity of research scholars, the literature content mainly focuses on a specific work of Beethoven's piano sonata, but there are also a few references to the creation and teaching of Beethoven's piano sonata.

The second stage (2002 ~ 2013) development period

At this stage, the volume of published papers increased rapidly, and the literature sources were extensive. In the

21st century, with the deepening of China's reform and opening up, literature and art have become richer in content, developed in various forms, and had more exchanges at home and abroad. The research level of researchers is constantly rising, and the number of researchers is also increasing, which leads to more and more publications and more in-depth research content.

The third stage (2013 ~ 2019) is the mature stage

At this stage, the number of published articles was large, and the average annual number of published articles exceeded 50, with a stable development speed. At this stage, interdisciplinary research direction appeared, and new music language evolved from the tradition. The combination of science and music gradually became one of the research focuses. The research method has also changed from a single descriptive analysis to a combination of data and more. The combination of multiple scientific methods greatly enriches and expands the research field of vision and achievements. Through the above analysis, it is shown that with the development of society and the progress of The Times, the research on Beethoven's piano sonata has become more and more in-depth and extensive, with the number of published articles increasing from less to more, and the research content moving from shallow to deep. The study of Beethoven's piano sonata has entered a mature stage of development.

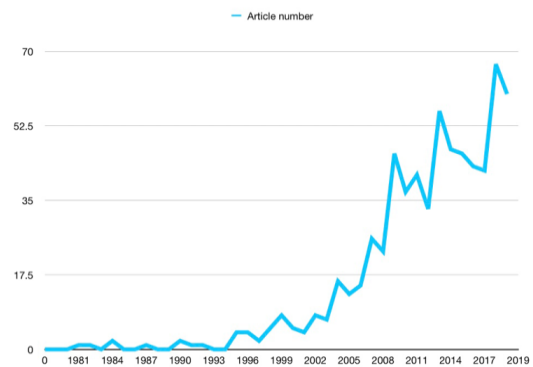


FIG. 1 Chart of the number of published papers from 1979 to 2019

1.2.2. Analysis of core authors

Core authors refer to the authors with relatively high occurrence frequency and relatively high number of published papers and the authors with high citation frequency within the scope of the research journal in this paper. The following figure is obtained through visual analysis of Citespace. As can be seen from the figure, some researchers have formed cooperative relationships, Examples include Li Jirong, Anton Cody and Sun Pengjie, Wang Yongzhen, Chi Wenhong and Hou Kangwei, etc. But generally speaking, most of them are still in a relatively independent state. By analyzing the highly cited articles of the core authors, it can be seen that most of them analyze the performance of Beethoven's piano sonata and its characteristics in a broad sense. These research results are of great significance not only for players to understand and play music, but also for music education.



FIG.2 The authors cluster the knowledge map

1.2.3. Analysis of core institutions

According to the cluster diagram obtained by Citespace, Harbin Normal University has conducted more research on Beethoven's piano sonata and published more articles. Shenyang Normal University, Inner Mongolia University for Nationalities and Shenyang Conservatory of Music, Shanghai Conservatory of Music and Yantai Vocational College have formed a relationship, while most of the other colleges are in a relatively independent research

state and have not formed a relationship.

By analyzing the content of highly cited references of these institutions, it can be seen that their research on Beethoven's piano sonata includes both a specific work and the overall artistic characteristics of Beethoven's piano sonata, and a comparative study compared with other works. These research results are of great significance to the performance of piano and the teaching of piano.



FIG. 3 Cluster knowledge map of issuing institutions

1.3 Analysis of research hotspots

Set relevant parameters in citespace function and parameter page, The time span is set from 1954 to 2019, the time slice is 1, the Node Type chooses keyword. Then you select Cosine, you get a cosplay network cluster.

1.3.1. Research Hotspot analysis

From 1978 to 2019, it can be seen from Table 1 that the hot

directions in the research field of Beethoven's piano sonata are "Sonata form", "the first movement", "playing skills" and "musical structure", etc. The highest occurrence frequency was 84 times. The statistical data show that Beethoven's piano sonata has a wide range of research contents, among which the research on sonata form, performance skills and form analysis is concentrated.

Table 1. The top 5 most frequently cited keywords

Sort	Keywords	Cited frequency (time)	year
1	The first movement	84	1982
2	Sonata form	68	1984
3	Performance skills	27	2008
4	Formal structure	25	2004
5	The main theme	23	1984

From the citation and download of the literature (See tables 2 and 3), more and download more have Zhu Yafen literature citation rates published in the "Beethoven's piano sonata"[2], published Yan Bing "Dynamics processing characteristics of Beethoven's piano sonata", Yao Hai published "The analysis of characteristics of Beethoven's piano sonata in department and harmony" and Liu Qing

published "On strength contrast of Beethoven's piano sonata", etc. This shows that the focus of piano research in China is on the performance and style of Beethoven's piano sonata. The time span is long, and the authors are concentrated in a small number of authors. The study of Beethoven's piano sonata needs to be more in-depth and comprehensive.

Table 2. Frequently cited literature

Sort	Literature name	Author	Issuing time	Literature sources	Cited frequency
1	Beethoven's Piano Sonata	Zhu yafen	2002	Piano Artistry	42
2	The Dynamics of	Yan bin	2009	The New	31

	Beethoven's Piano Sonata			Voice of Yue-Fu (Journal of Shenyang Conservatory of Music)	
3	Analysis on The Harmonic Characteristics of The Opening Part of Beethoven's Piano Sonata	Yao hai	2004	Explorations In Music(Journal of Sichuan Conservatory of Music)	21
4	On The Contrast of Strength in Beethoven's Piano Sonata	Liu qin	2000	Explorations In Music(Journal of Sichuan Conservatory of Music)	21
5	A Comparison of The Styles of Three Periods of Beethoven's Piano Sonata	Liang tingzi	2009	Education Science & Culture Magazine	19

Table 3. More frequently downloaded literature

Sort	Literature name	Author	Issuing time	Literature sources	Download frequency
1	Analysis and Performance of The third movement of Beethoven's Sonata Pathetique	Wang senlin	2010	Yellow River of the Song	1640
2	A Brief Analysis of Beethoven's Moonlight Sonata from the Perspective of Performance and Teaching	Xi jinsong	2005	Journal of Central Conservatory of Music	1620
3	A Study on the Generality of Beethoven's Piano Sonata and his Symphonies	Lin miao	2011	Journal of Tianjin Conservatory of Music	1530
4	The Dynamics of Beethoven's	Yan bin	2009	The New Voice of	1477

	Piano Sonata			Yue-Fu (Journal of Shenyang Conservatory of Music)	
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2. CONCLUSION

In this paper, the research field of Domestic Beethoven piano sonata is taken as the literature research object, and citespace information visualization software is used to analyze it, and the visualization knowledge atlas and detailed table information of domestic Beethoven piano sonata literatures from 1979 to 2019 are obtained. By analyzing the number and time of published papers, core authors, core institutions, citation frequency of key words, citation quantity and download quantity of literature in the research field of Beethoven piano sonata, this paper summarizes the development status of the research field of Beethoven piano sonata.

2.1 Research status and Characteristics

Through the analysis of the number of articles in the relevant literature, it is found that the literature in the field of research on Beethoven's piano sonata shows an increasing trend year by year, and has roughly experienced three stages, namely, the embryonic stage, the developing stage and the mature stage. With the development of The Times and society, more and more papers have been published, and the research has become more and more active and in-depth. From the perspective of core authors and core institutions, Most of the core authors analyze the performance of Beethoven's piano sonata and its characteristics in a broad sense. From the perspective of the core institutions, it can be seen that their research on Beethoven's piano sonata is not only about a specific work, but also about the overall artistic characteristics of Beethoven's piano sonata, as well as a comparative study compared with other works. These studies are of great significance for players to understand music, play music, piano teaching and music education.

2.2 Existing problems

Through statistical data, it can be found that although the number of published articles is increasing year by year, the overall number of published articles is not large and the research is more active, but it is still not active and in-depth enough. Researchers and research institutions are in a relatively independent research state, and no research team or research area has been formed. Most researchers' research methods are simple and only limited to the humanities, and cross-disciplinary research methods have not been popularized. These problems may hinder researchers'

resource sharing, make the research time-consuming and laborious, and make the research effect poor.

2.3 Prospects for the future

From the analysis of research hotspots, it can be seen that the research hotspots of high citation frequency of Beethoven's piano sonata focus on "keyboard instrument", "sonata form", "first movement", "playing technique", "playing" and "style", etc. It can be seen that the research scope of Beethoven's piano sonata is very extensive, and these research results are of great significance to piano teaching and music education. With the progress of The Times, the development of the society, the continuous improvement of the quality of life of Chinese people, and the increasing demand for music education, all these demands require researchers to work together to develop the research in a more in-depth direction.

From the point of view of core institutions and core authors, there is little cooperation and research sharing among researchers, and no large-scale research team has been formed. In the future, the linkage between authors and institutions can be explored to promote resource sharing, improve research efficiency, and make the research more in-depth and comprehensive.

From the perspective of research methods, most of the current research methods are very single, only limited to the humanities. This requires us to expand our thinking, evolve a new language of music from the tradition, adopt interdisciplinary research methods, combine music with science and technology, enrich and expand our research horizon and achievements, and achieve the perfect combination of art and science and technology.

2.4 From this point of view, the research results of "Beethoven Piano Sonata" cannot be separated from the continuous exploration of all researchers, and also cannot be separated from China's strong support for music art. In the future research, we should keep pace with The Times, pioneering and innovative, To reduce the relative independence of researchers and research institutions, to give full play to the linkage effect and to cooperate with each other to make the study of Beethoven's piano sonata develop in a deeper and more comprehensive direction, and at the same time to contribute to the development of Chinese music.

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