

# The Knowledge Graph of the Study of Minority Music in Guangxi Province

Visualization Analysis Based on CNKI (1980—2020)

**Abstract**—The excellent traditional cultures of minorities are important parts of Chinese civilization. Guangxi minority areas have abundant music resources. It is of great significance for enhancing cultural consciousness and self-confidence, and promoting the development of cultural diversity to research Guangxi minority music. CiteSpace, a metrology software, is used to review and analyze the temporal and spatial distribution, hot spots, and clustering keywords of the research literature on Guangxi minority music which have been published in the CNKI from 1980 to 2020.

**Keywords**-Guangxi minority music; literature review; Visualization analysis; CiteSpace; Community consciousness of Chinese nation

## I. INTRODUCTION

The data source of this paper is selected from China National Knowledge Infrastructure (CNKI). In the advanced search function, the three keywords of Guangxi, minority, and music were used to search, and all the retrieved literature were manually screened. A total of 592 pieces of literature were screened out. Since there was no literature record in this research field from 1980 to 1983, the sample literature in this paper was from 1984, and the period extends to 2020. After excluding pictures, newspapers, conferences, and other non-research literature, 336 pieces of research literature were finally obtained, which were determined as valid data. This paper mainly uses CiteSpace5.8.R2 as the research tool, adopts the methods of bibliometrics, scientific knowledge graph visualization analysis, and content analysis and uses the data to draw tables and graphs, which visually shows the development context of Guangxi minority music in the past 40 years, and then dig out its development characteristics and explore development trends.

## II. RESULTS AND DISCUSSIONS

### A. Analysis of the number of papers published

The number of papers published is one of the important indexes to evaluate the research popularity and development trend of a certain research field. Figure 1 shows the changes in the number of papers published on related topics over the past 40 years.

According to Figure 1, from 1984 to 2004, there were few related papers in this field and the number of published papers fluctuated within 3 pieces, which showed that the research in this field had not yet started at that time. The peak of the number of publications in this field appeared in 2005 and 2007 respectively. In 2015, there was a sudden increase in the literature published in this research field. Compared with the 15 pieces of literature published in 2014, it doubled, which reflects

that the research theme had attracted the interest of more and more researchers. Since 2019, although the number of papers published in this field declined, it has still remained above 20 pieces, which appears that the research popularity has not diminished.

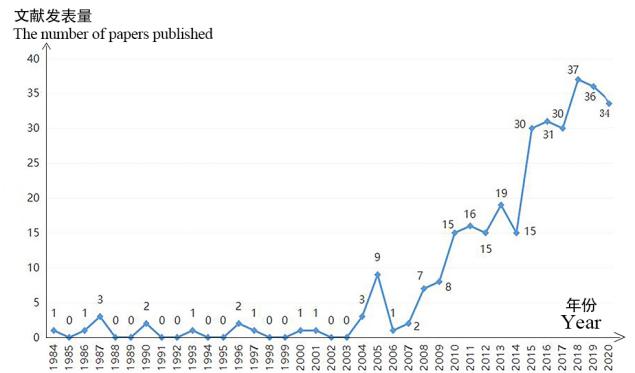


Figure 1. The number of papers published

### B. Keyword co-occurrence analysis

Keywords are one of the important indicators reflecting the research hot spots, which are highly condensed papers. To a certain extent, they can reflect the research value and direction of the paper. By running CiteSpace and setting the node type as keywords, 336 papers on the research field of Guangxi minority music collected by CNKI from 1980 to 2020 are analyzed, and Figure 2 is obtained. It can be seen that this figure presents a total of 551 nodes, and the main keywords are Zhuang minority, the Zhuang folk songs, music culture, inheritance, national music, and so on. For further understanding, the keywords with a frequency greater than 9 are extracted as high-frequency keywords and analyzed and then Table 1 is obtained. Guangxi appeared most frequently, with 41 times, followed by keywords such as Zhuang minority, minority, and inheritance all over 20 times.

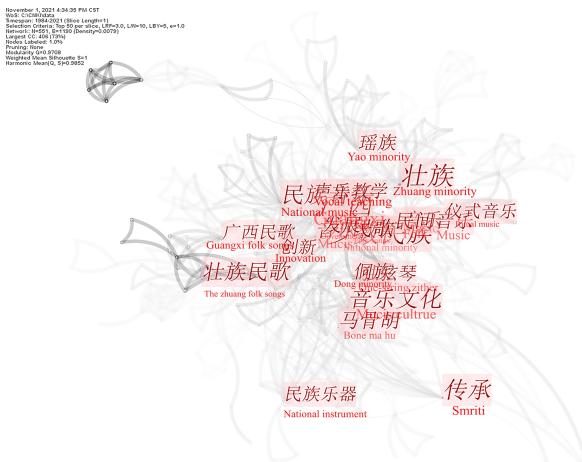


Figure 2. Keyword co-occurrence map

In addition, node centrality plays an intermediary role in the entire knowledge graph. It represents the interconnection between two nodes. The stronger the centrality of a keyword, the probability that the keyword appears simultaneously with other keywords in the graph, which can reflect the research hot spot to a greater extent.

TABLE I. KEYWORD CITED TIMES AND CENTRALITY STATISTICS

| Number | Keyword               | Cited times | Centrality |
|--------|-----------------------|-------------|------------|
| 1      | Guangxi               | 41          | 0.36       |
| 2      | Zhuang minority       | 32          | 0.26       |
| 3      | Minority              | 26          | 0.20       |
| 4      | Inheritance           | 21          | 0.14       |
| 5      | National music        | 17          | 0.10       |
| 6      | Music culture         | 15          | 0.14       |
| 7      | Music education       | 12          | 0.06       |
| 8      | Folk songs            | 11          | 0.07       |
| 9      | Zhuang minority songs | 9           | 0.11       |
| 10     | Music                 | 9           | 0.05       |

According to Table 1, the centrality of the seven words Guangxi, Zhuang minority, minority, inheritance, music culture, and Zhuang minority songs all exceeds 0.1. Among them, the four words Guangxi, Zhuang minority, minority and inheritance are both high-frequency keywords and high-central keywords, which maintains stability and accurately represents the research hot spots in this field.

### C. Keyword clustering analysis

Keyword clustering analysis is based on keyword co-occurrence analysis, and the keyword co-occurrence

network relationship is simplified into a relatively small number of clusters through the method of clustering statistics<sup>[1]</sup>. Therefore, this paper uses the method to analyze the research hot spots of Guangxi minority music. Figure 3 is a keyword clustering network map, which reflects the current research status of Guangxi minority music, showing nine cluster labels such as Zhuang minority, innovation, and national music. From the point of view of the various parameters of the map, the Modularity Q value is 0.8086 ( $Q>0.3$ ), and the Mean Silhouette value is 0.9437 ( $S>0.7$ ). Both values are within a reasonable range. It shows that the cluster structure of this study is significant and convincing.

November 1, 2021 4:24:35 PM CST  
WOS: 000584420300001  
Timespan: 1984-2021 (Since Legendre)  
Software: CiteSpace 5.7.4 Build 20210720  
Largest CC: 208 (959)  
Silhouette: 0.9437 (S>0.7)  
Modularity: 0.8086  
Pruning: FullFinder  
Modularity: 0.8086  
Weighted Mean Silhouette: 0.9437  
The modularity: 0.8086



Figure 3. Keyword clustering map

### D. Keyword mutation analysis

Research frontiers refer to a group of emerging dynamic concepts and potential research problems<sup>[2]</sup>, which can be expressed as keywords that have been cited a sudden increase in a certain period.

In order to study the development trend of Guangxi ethnic minority music more deeply, the author used the Burstness function in the control panel in CiteSpace to draw a knowledge map of keyword mutation rates from 1980 to 2020 and selected the top 10 burst keywords to form the research frontier in the overall direction.

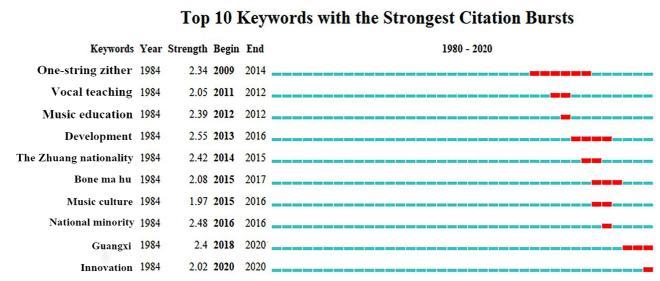


Figure 4. Keyword mutation map

As shown in Figure 4, the research hot spots of Guangxi minority music have mainly formed after 2009. The research objects have gradually changed from micro-researches such as music education, one-string zither, and vocal teaching to music culture and innovation, which reflects that the research in this

field is more mature and further in a more macroscopic direction. The popularity of Guangxi research has not diminished since its appearance in 2018, and the innovation research that appeared in 2020 has become the most recent research frontier.

#### E. Keyword time zone map

In order to have a good command of the evolution trend of the research hot spots of Guangxi ethnic minority music, the author selected the Timezone View function in CiteSpace and obtained the co-occurrence time zone map of keywords through visualization.

According to the frequency change rate of keywords in a certain period of time, the frontier and evolutionary trend of research can be determined<sup>[3]</sup>.

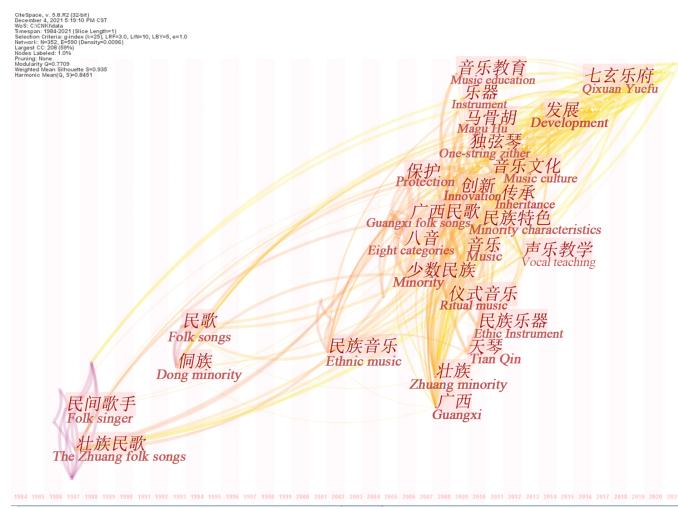


Figure 5. Keyword time zone map

Figure 5 is a map drawn to determine the time zone of the keywords based on the time when the key nodes first appeared, which can visually show the most popular research topics in each period. Combining Figure 4 and Figure 5, the research on Guangxi minority music in the past 40 years can be divided into the following three periods:

#### I) Basic development period (1980-2009)

This stage spanned from 1980 to 2009, at the level of basic research. Due to inadequate conditions for running schools, conservative concepts of the people, backward policies, etc., research on the field of Guangxi minority music had not been valued, and the amount of literature published was small and the influence was not great. The main research hot spots in this period were the Zhuang minority folk songs, national music and Guangxi folk songs.

It can be seen from the above that the first peak of the number of publications in this research field was appeared in 2005, which increased from 3 pieces in 2004 to 9 pieces. Among them, the paper on "Music Education of Ethnic Minorities" accounted for half. Researchers began to go into the countryside and cities to investigate the current situation of ethnic minority music education.

#### 2) Prosperous development period (2010-2016)

Compared with the research in the previous period, researchers conducted more detailed and in-depth research on the field of minority music in Guangxi. Besides, Research hot spots got rid of the initial limitations, and the research map presented a diverse scene. Music education was still a research hot spot. Music culture and cultural form have become new research directions.

#### 3) New development period (2017-present)

During this period, with the continuous enrichment of research resources, the gradual broadening of researchers' horizons, and the strong support of the government, this research field has gained new development. In this period, researchers pay more attention to some topics like innovation, review, and development status. In terms of research ideas, the researchers get rid of the development limitations of a single form, realize the value of the integration of multiple forms, and do a large number of explorations on the integration of forms.

At the same time, some researchers have noticed that the aesthetic deviation of the audience currently has an impact on traditional folk music. So they try to put forward their own views on the promotion of cultural inheritance and development from the perspective of education and publicity, policy support, and expansion of information access channels.

### III. CONCLUSIONS AND FUTURE WORK

Based on the visual analysis on CiteSpace, this paper has done an advanced search on the three terms Guangxi, minority, and music in the CNKI database and analyzed the number of papers that have been published and keyword characteristics to grasp the research situation in this field from 1980 to 2020. Here are the conclusions and future work:

#### A. Conclusions

1.In the past forty years, the number of literature in this field has increased in fluctuations. From 1984 to 2004, the number fluctuated little, and the total number of literature was small. Since 2005, as the country attached more importance to the promotion of excellent traditional culture, researches in this field have gradually increased.

2.The research keywords in this field are concentrated on words such as the Zhuang minority, Guangxi, inheritance, etc. They are not only high-frequency keywords, but also have good node centrality, which can accurately help researchers grasp the hot spots. Nevertheless, the overall perspective of the research is still very limited.

3.Through keyword clustering analysis, the current research content in this field can be summarized into the four themes of minority music education, the Zhuang minority music, minority musical instruments, and minority music resources protection and development. Previous studies focused on the micro-level of research, while the meso and macro-level issues were received little attention.

4.The research hot spots were formed systematically after 2009. It is from 2010 to 2016 that was the period of prosperity of research. During this period, researchers saw the value of minority elements, and discussed in-depth on application in

various fields. Besides, the researches got rid of their own limitations, and their research vision was broader whose maps also showed a diverse scene. In recent years, with the continuous enrichment of research resources and the strong support of the government, the study of minority music in Guangxi has made new progress.

### B. Future work

The smooth development of minority culture has not only built a new platform for enhancing national identity and inheriting excellent traditional culture but also played an important role in forging the consciousness of the community of the Chinese nation and building the common spiritual home of the Chinese nation. Since the reform and opening up for 40 years, the minority culture of Guangxi province has flourished, and a large number of outstanding literary and artistic talents have emerged. Besides, excellent works have been created endlessly. Under the new situation, the opportunities and challenges coexist. In response to the above research conclusions, combined with the current actual situation, the author puts forward the development proposals:

1. Some scholars have proposed the strategy of delimiting cultural protection areas, building cultural-ecological areas, and realizing the living inheritance of excellent culture. According to the characteristics of regional culture, researchers can select a residential space with a certain representative population in terms of production, lifestyle, and ideology to give complete protection and special attention, so that the traditional music of a specific area can be effectively developed and inherited. At the same time, the government should promote the establishment and development of research and protection institutions, and implement policy guarantees.

2. Music education should be strengthened and the cultivation of music inheritors should be attached more attention. While focusing on the aesthetic value of minority music, people don't forget the refraction and prominence of

culture. In a way that the younger generation can easily accept, the elements of national culture are subtly integrated into education, awakening the pride of young people in national music, and enhancing their consciousness of inheritance and innovation of national music.

3. In contemporary society, modern communication methods are extremely abundant. Media practitioners' mentalities need to keep pace with times and they need to use the method that people are easy to accept to spread cultural contents. In addition, more attention should be paid to the integration of minority music elements with other media forms.

Cultural identity is the deepest identity, the root of national unity and the soul of national harmony<sup>[4]</sup>. Based on this, people must actively explore the development principles of national music, find innovative paths, and attach importance to the leading role of theoretical research, so as to correctly guide the practical work of national music and promote the creative transformation and innovative development of Chinese excellent national culture.

### ACKNOWLEDGMENT

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