

Knowledge Mapping of Sports Intangible Cultural Heritage: Trends and Influences in Scholarly Research

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Abstract

Intangible cultural heritage (ICH) encompasses a diverse range of practices, representations, expressions, knowledge, and skills recognized by communities as part of their cultural legacy. This manuscript provides a comprehensive knowledge mapping of Sports Intangible Cultural Heritage (SICH), highlighting trends and influences within scholarly research. Utilizing bibliometric analysis and systematic literature review methodologies, the study examines the evolution of SICH research, identifies key thematic areas, and uncovers influential works and authors in the field. Key findings reveal a significant growth in SICH studies over recent decades, with predominant themes including preservation techniques, cultural identity, and the impact of globalization on traditional sports. The study also identifies regional disparities in research focus and provides insights into the collaborative networks among researchers. This research contributes to a deeper understanding of SICH, offering valuable implications for policy-making, cultural preservation efforts, and future academic inquiries. The broader impact of this study underscores the importance of safeguarding SICH as a vital component of cultural heritage, fostering a richer appreciation and sustainable development of traditional sports globally.

Keywords

Intangible Cultural Heritage, Sports Intangible Heritage, Bibliometrics.

1. Background

Intangible cultural heritage refers to the various practices, representations, expressions, knowledge, and skills that communities, groups, and sometimes individuals recognize as part of their cultural heritage[1]. This includes associated tools, objects, artifacts, and cultural spaces. The scope of intangible cultural heritage encompasses oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe, and traditional craftsmanship[2].

In the field of sports, intangible cultural heritage holds significant importance. Sports-related intangible cultural heritage includes traditional sports and games, which not only reflect cultural diversity and human creativity but also carry rich historical, social, and cultural values. For instance, traditional sports such as martial arts, wrestling, and dragon boat racing are vital components of their respective cultural heritages[3]. These activities, passed down through generations, help maintain community identity and cultural continuity. Therefore, the protection and study of sports-related intangible cultural heritage not only contribute to the promotion of traditional culture but also foster cultural diversity and sustainable social development.

The main objective of this paper is to systematically analyze the relevant literature on sports-related intangible cultural heritage using bibliometric methods, employing CiteSpace and VOSviewer software. Through this analysis, we aim to uncover the hotspots, frontiers, and development trends in the research field of sports-related intangible cultural heritage.

Additionally, we seek to identify key researchers, important literature, and core journals in this field, thus providing valuable references for future research.

2. Literature Review

Existing research on sports-related intangible cultural heritage mainly focuses on the following aspects:

Firstly, in terms of cultural significance and transmission, studies have explored the historical origins, cultural backgrounds, and modern-day transmission and protection of traditional sports. For example, research on Chinese martial arts, Japanese sumo, and Indian yoga has delved into the historical roots and cultural contexts of these sports[4,5].

Secondly, in terms of social functions, research has investigated the role of sports-related intangible cultural heritage in social cohesion, community identity, and cross-cultural exchange, such as studies on dragon boat racing promoting community cohesion[6,7].

Lastly, in terms of protection and development, research has focused on the strategies and challenges of protecting sports-related intangible cultural heritage in the modernization process, proposing corresponding protection policies and practical measures, such as the establishment of intangible cultural heritage lists and the training of inheritors. Although existing research covers multiple aspects of sports-related intangible cultural heritage, systematic bibliometric analysis is still relatively lacking. This study aims to systematically analyze the research literature on sports-related intangible cultural heritage using bibliometric methods, revealing research hotspots, development trends, and key researchers in this field, thereby filling this gap.

Bibliometrics is a quantitative method for analyzing literature data, commonly used to reveal the characteristics and development dynamics of a particular research field[8]. By statistically analyzing information such as citations, keywords, authors, and journals, bibliometrics can uncover research hotspots, frontiers, core literature, and their evolutionary trends. In the study of intangible cultural heritage, bibliometric methods have been applied in several areas. For example, some studies have analyzed the overall research status of intangible cultural heritage through bibliometric analysis, revealing research hotspots and major contributors[9]; other studies have focused on specific categories of intangible cultural heritage (such as traditional performing arts, traditional medicine), exploring their research trends and important literature[10]. However, bibliometric analysis specific to sports-related intangible cultural heritage remains relatively scarce.

This study aims to fill this gap by providing a comprehensive understanding of research on sports-related intangible cultural heritage through systematic bibliometric analysis. Using CiteSpace and VOSviewer software, this study will systematically analyze the research literature on sports-related intangible cultural heritage, uncovering research hotspots, development trends, and key researchers in this field, thereby providing valuable references for future research. Through the above review, this paper will lay the theoretical foundation for subsequent bibliometric analysis and clarify the necessity and value of the research.

3. Research Methods

The data for this study were sourced from Web of Science, a high-quality literature database covering a wide range of academic fields. We conducted a systematic literature search on the Web of Science using keywords including "sports intangible cultural heritage," "traditional sports," "cultural heritage," and "intangible culture." To ensure the accuracy and comprehensiveness of the data, we set the following retrieval strategies:

Search Scope: Including core sub-databases such as SCI-Expanded, SSCI, and A&HCI.

Time Range: Setting a specific time range to cover significant research in the field.

Keywords: Conducting a comprehensive search using relevant keywords and their synonyms, such as "sports intangible cultural heritage," "traditional sports," "cultural heritage," and "intangible culture."

Language: Restricting to English literature to ensure readability and standardization of analysis.

Inclusion criteria include: literature explicitly related to sports intangible cultural heritage, and literature types including academic papers, reviews, and conference papers. Exclusion criteria include: literature unrelated to the topic, duplicate literature, and non-academic materials.

CiteSpace and VOSviewer are two software tools used for analyzing and visualizing scientific literature, particularly suitable for revealing the development trends and knowledge structures of research fields[11,12]. Their main functions include co-citation analysis, cluster analysis, keyword burst detection, and time zone views. Through these functions, CiteSpace and VOSviewer can help systematically analyze research literature in the field of sports intangible cultural heritage, uncovering research hotspots, main contributors, and development trends. The analysis results will provide important references for understanding the current research status and future development directions of sports intangible cultural heritage.

4. Results Analysis

4.1. Co-Citation Network of Literature

As shown in Figure 1, the co-citation network of literature illustrates the main research themes and core literature in the field of sports intangible cultural heritage, revealing the knowledge structure and research hotspots in this area. The green clusters focus on the application of computer graphics and multimedia technology in cultural heritage preservation, while the red clusters concentrate on the protection policies and theoretical frameworks of intangible cultural heritage. The blue clusters involve the digitization of cultural heritage and virtual reality technology. Core literature, such as Kirshenblatt-Gimblett (2004) and UNESCO (2003), demonstrate significance within their respective clusters. Cross-field links highlight the interdisciplinary nature of the research and the evolutionary trends of the hotspots.

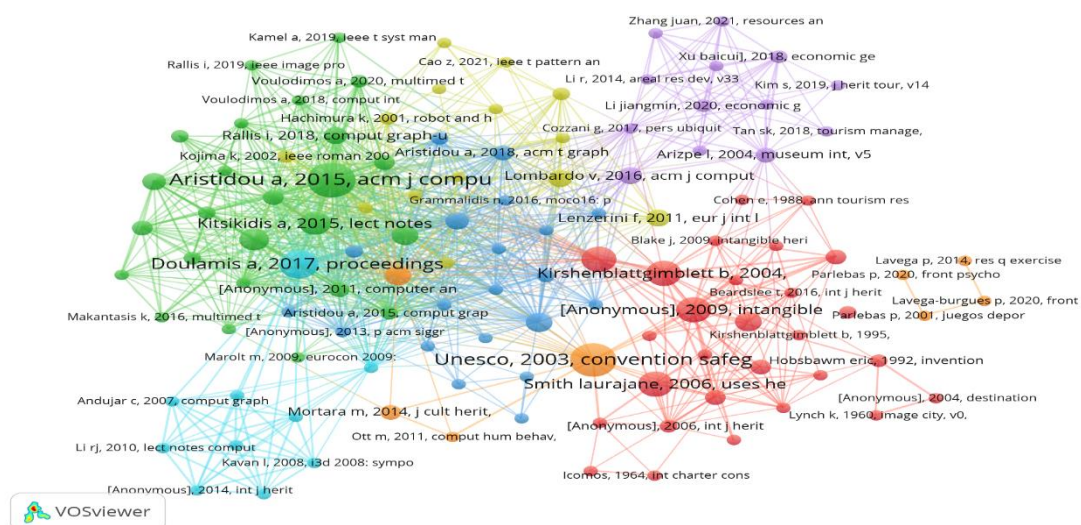


Figure 1 Co-Citation Network of Literature

4.2. Co-Citation Clustering of Literature

As shown in Figure 2, the co-citation clustering analysis reveals several major themes in the research of sports intangible cultural heritage, which are as follows: Dance (#0), focusing on the transmission and preservation of traditional dances; Adult Sports Activities (#1), exploring the impact of sports activities on adult health; Concept of Intangible Cultural Heritage (#2), analyzing its social significance; Influencing Factors (#3), examining social, economic, and cultural factors affecting the preservation of sports intangible cultural heritage; Social Capital (#4), investigating how sports activities enhance community cohesion; Education (#5), emphasizing the promotion of intangible cultural heritage through education; Natural Capital (#6), studying the relationship between intangible cultural heritage and natural resources; Ecosystem (#7), highlighting the synergistic effects of environmental protection and cultural heritage preservation; Tourism and Local Community Development (#8), discussing the role of tourism in the preservation of sports intangible cultural heritage. These clusters demonstrate the breadth and diversity of research in the field of sports intangible cultural heritage, providing important references for comprehensively understanding the research dynamics in this area.

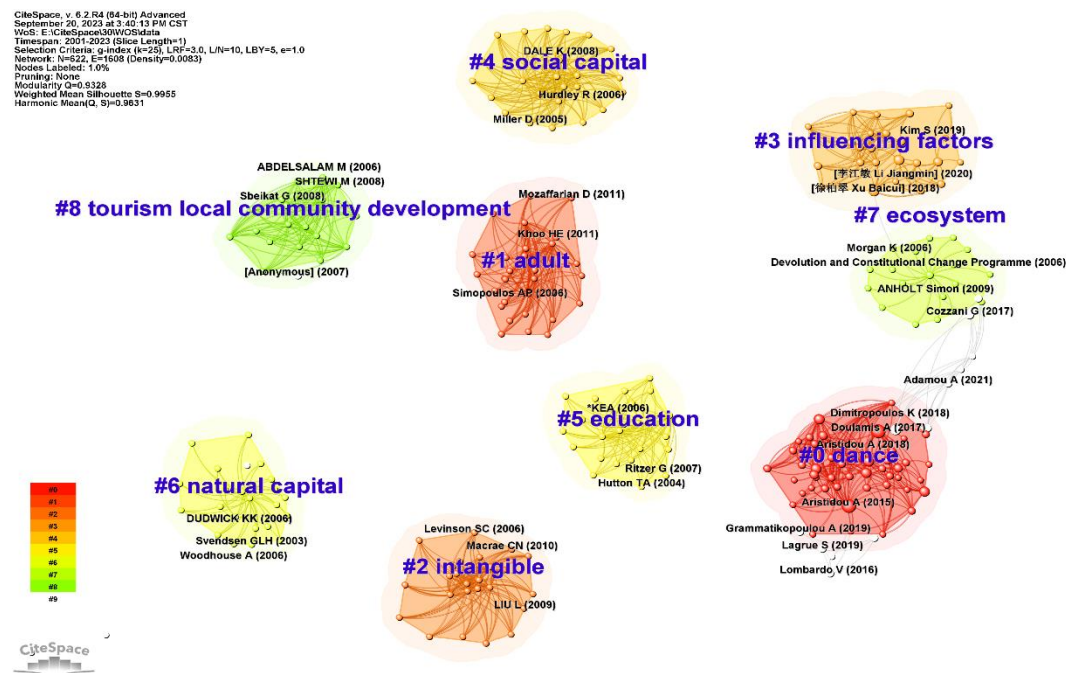


Figure 2 Co-Citation Clustering of Literature

4.3. Co-Citation Analysis of Journals

As shown in Figure 3, the co-citation analysis of journals reveals several major thematic clusters in the research of sports intangible cultural heritage (intangible cultural heritage), which include: Folk Dance (#0), focusing on the transmission and preservation of traditional dances; Influencing Factors (#1), analyzing the social, economic, and cultural factors affecting the protection of intangible cultural heritage; Natural Capital (#2), exploring the relationship between sports intangible cultural heritage and natural resources; Intangible Heritage (#3), emphasizing the concept and social significance of intangible cultural heritage; Tangible and Intangible Capital (#4), studying the economic impact of sports intangible cultural heritage; Components of Well-being (#5), exploring the role of sports activities in promoting individual and community well-being; Serious Games (#6), using gamification methods to protect and

promote sports intangible cultural heritage; Ethnic Sports (#7), examining ethnic characteristics and cultural identity in sports activities; Urban Market (#8), focusing on the application and development of sports intangible cultural heritage in urban environments; Planning (#9), studying the planning and policies related to sports intangible cultural heritage; History (#10), exploring the historical background and evolution of sports intangible cultural heritage; Sports Education (#12), discussing the promotion of sports intangible cultural heritage through education; Economic Benefits (#13), studying the economic contributions of sports intangible cultural heritage; Safety Culture (#14), researching the safety culture in sports activities; Energy (#15), exploring energy use and sustainability in sports activities; Adult Participation (#16), studying the impact of adult participation in sports activities; Youth Sports (#17), focusing on the role of youth sports activities in the transmission of intangible cultural heritage; and Digital Preservation (#18), exploring the protection and promotion of sports intangible cultural heritage through digital means.

These clusters demonstrate the breadth and diversity of research in the field of sports intangible cultural heritage. Core journals such as Journal of Cultural Heritage and International Journal of Intangible Heritage occupy important positions in the network, and cross-disciplinary links highlight the interdisciplinary nature of the research and the evolutionary trends of hotspots. This provides important references for understanding the knowledge structure and main contributions in this field.

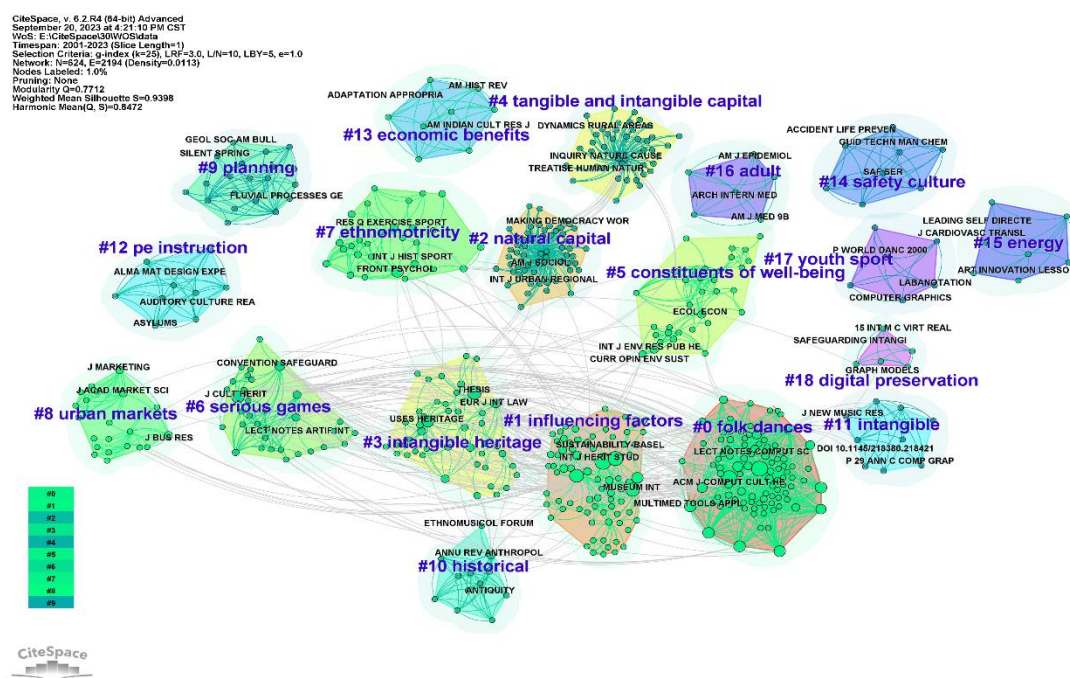


Figure 3 Co-Citation Analysis of Journals

4.4. Keyword Timeline Analysis

As shown in Figure 4, keyword timeline analysis reveals the hotspots and development trends in sports intangible cultural heritage research. Early studies (2001-2010) primarily focused on traditional themes such as "cultural heritage," "traditional sports," and "folk dance." Over time, particularly between 2010-2015, research hotspots began shifting towards the application of emerging technologies in the preservation of sports intangible cultural heritage, including "virtual reality," "augmented reality," and "3D animation." From 2015 to 2020, keywords such as "machine learning," "digital preservation," and "science" highlighted the growing importance of digital technology in the research of sports intangible cultural heritage. Recent studies (post-

2020) have concentrated on aspects like "influencing factors," "protected areas," and "communication models," delving into the strategies and influencing factors for the protection of sports intangible cultural heritage. The links between keywords from different time periods in the timeline indicate the continuity and evolution of research themes. This analysis demonstrates the dynamic development of sports intangible cultural heritage research, from traditional cultural preservation to modern technology application and protection strategies, providing important references for understanding the knowledge structure and key areas in this field.

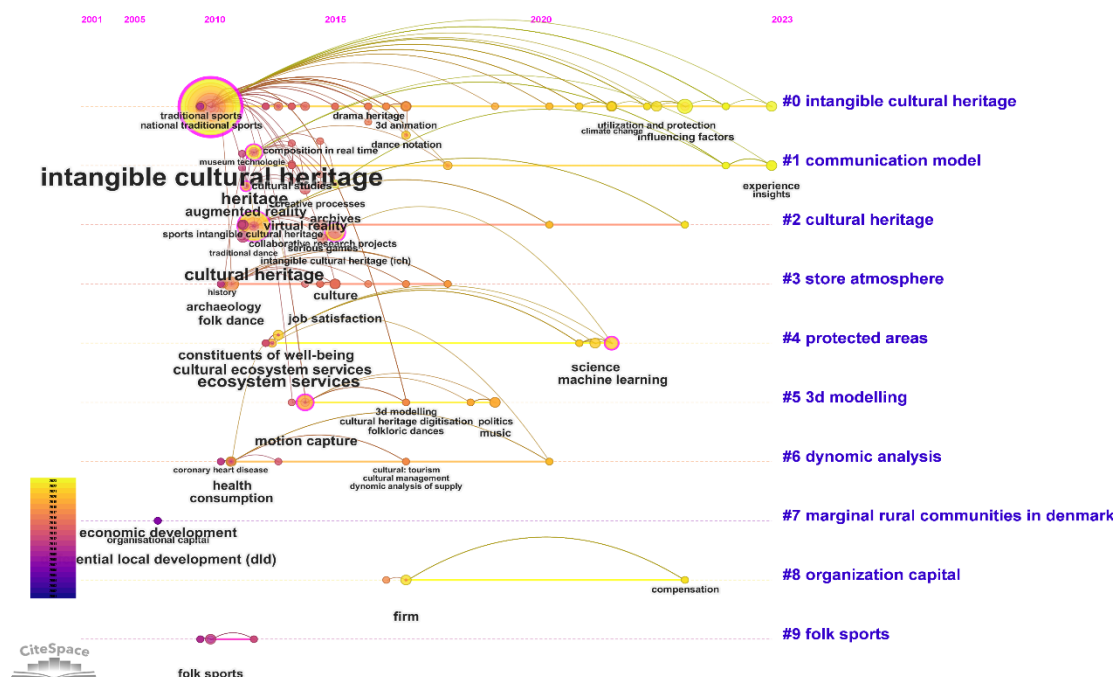


Figure 4 Keyword Timeline

5. Conclusion

This study systematically analyzed the literature on sports intangible cultural heritage using bibliometric methods with CiteSpace and VOSviewer software. The main findings include the research hotspots and development trends transitioning from early traditional cultural preservation (such as "cultural heritage" and "traditional sports") to modern technology applications (such as "virtual reality" and "digital preservation") and protection strategies (such as "influencing factors" and "protected areas"). Keyword timeline analysis showed the dynamic evolution of research themes, journal co-citation analysis revealed the core journals and interdisciplinary relationships in the field, and co-citation network and clustering analyses highlighted the main research themes and core literature. These results provide important references for understanding the knowledge structure and future development directions of sports intangible cultural heritage research.

However, this study has some limitations. First, the data source was limited to Web of Science, which may have led to the exclusion of some important literature, affecting the comprehensiveness of the analysis. Second, the study used only CiteSpace for analysis; although this software is powerful, different software or methods might offer different perspectives and results. Additionally, the scope of the analysis focused mainly on keywords, journals, and co-citation relationships, without delving into specific research content and methods.

Based on the findings of this study, future research can be expanded in the following directions: First, broadening the data sources by incorporating other databases such as Scopus or Google

Scholar to obtain more comprehensive literature data. Second, employing various bibliometric tools and methods to provide analysis results from different perspectives. Additionally, conducting an in-depth analysis of specific research content and methods to explore the intrinsic connections and mutual influences between different research themes. Lastly, focusing on the impact of emerging technologies and socio-economic changes on sports intangible cultural heritage research, and further exploring how modern technology and innovative strategies can more effectively protect and transmit sports intangible cultural heritage.

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