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The Scope and Limitations of Contemporary Chinese Media Culture Research: A Visualization Analysis Utilizing CiteSpace

Songyu Jiang¹

Ming Li^{2*}

^{1,2}Rattanakosin International College of Creative Entrepreneurship
Rajamangala University of Technology Rattanakosin, Thailand.

*Corresponding author

¹jiang.song@rmutr.ac.th

^{2*}li.ming@rmutr.ac.th

Abstract

The paper aims to encapsulate key trends in publication, prolific authors, research domains, and prevailing topics on Chinese media culture research. Drawing upon the China National Knowledge Infrastructure (CNKI), this study conducts a quantitative analysis of 602 Chinese media culture research outputs from 2000 to 2023 using the visualization method of scientific knowledge graphs. Concurrently, the research highlights some significant findings regarding the publishing trend, media culture research exhibiting a fluctuating progression, and the growth rate transitioning from a gradual to an accelerated pace. The researchers considered the Chinese media culture study landscape as characterized by a mononuclear development model with an over-reliance on key figures, and a dearth of collaboration among researchers and research institutions. This paper identifies current limitations, particularly imbalanced and underdeveloped aspects within Chinese media culture research, a noticeable absence of quantitative research methods, and a prevailing reliance on subjective content interpretation. The researchers also projected a trend prioritizing macro aspects while overlooking micro aspects, along with a relative neglect of public perspectives on influencing factors of media culture. Given these findings, scholars and institutions can gain benefits from the core research circle through collaboration for a comprehensive elevation of academic contributions in this field. In addition, they can explore novel research avenues, bolster research on weaker aspects, and delve into the development of localized theories of their interest.

Keywords: *CiteSpace, visualization, visualization analysis, media culture, Chinese media culture, knowledge management*

1. Introduction

The advent of the media technology revolution, characterized by advancements, such as artificial intelligence, algorithms, big data, and 5G technology, has insinuated itself into every facet of social life, reshaping human behavior and modes of thinking (Luo & Jiang, 2023). As a cultural phenomenon, media culture has continuously expanded, mirroring the society-wide proliferation of mass media, and exerts substantial influence on its audience (Jensen, 2020). Thus, scrutinizing the developmental trajectory and existing issues of media culture research holds crucial practical significance for fostering the growth of media culture (Skinner et al., 2022).

At present, Chinese media culture exhibits considerable vibrancy, and the export of Chinese culture is continuously on the rise (Zhang & Ong'ong'a, 2022). At the strategic national level, China has placed a premium on the construction of international communication capacities, striving to establish a comprehensive financial media matrix and a uniquely Chinese communication system (Zhuang & Zhou, 2023).

Over 10,000 Chinese internet literary works have found audiences overseas. Of these, more than 4,000 physical books have received publication rights and over 3,000 translated works have been released online. Websites and reading apps catering to these works have attracted subscriptions from over 100 million users, spanning most countries and regions across the globe, thereby achieving remarkable results in international communication (Florido-Benítez, 2022). Internet literature initially proliferated in Southeast Asia, Northeast Asia, and North America before spreading to Europe, Africa, and eventually worldwide. Online reading enjoys widespread popularity in the United States, Canada, France, Spain, and other Western countries, while African nations display a strong preference for overseas platforms and authorized app works (Sakai et al., 2023).

Chinese TV dramas have gained traction in various overseas countries and regions. This not only promotes Chinese culture but also continually enhances the competitive edge of Chinese cultural offerings (Cao et al., 2022).

Therefore, the dissemination of Chinese media culture is a potent exemplar, capable of offering ample empirical references for the global study of media culture (Fang & Repnikova, 2022). This paper, by cataloguing the knowledge structure and development trend in the field of Chinese media culture research, elucidates the academic frontiers, charts the academic genealogy of media culture research, and dissects the developmental laws in this field. It presents a multi-faceted snapshot of the evolution of Chinese media culture research, thus providing direction and guidance for future global media culture research.

This study uses CiteSpace visualization software to comprehensively analyze publication quantity, researchers, research fields, and research hotspots. Through statistical analysis of relevant data and texts, it sketches a panoramic view of the evolution of Chinese media culture research over the past two decades and carries out a holistic, comprehensive, and dynamic visualization analysis. Utilizing bibliometric analysis to investigate media culture research is a significant approach, as it elucidates the development of media culture research and showcases the current research status of media culture through quantitative analysis (Garcia, 2023). Moreover, this method has considerable application value for theoretical innovation and the evolution of media culture research (Li et al., 2023; Luo et al., 2022).

2. Literature Review

2.1 Media Culture

Media culture is a term used to describe the current Western social formation where media and technology (television, newspapers, radio, film, and the internet) play a pivotal role (Cao, 2023). This concept suggests that images, sounds, and textual representations become vital in influencing and shaping culture and individual perceptions of the world. In media culture, the media are not only tools for communication but also

engines of cultural and social change. They are central to politics, the economy, education, and almost every other aspect of society. The study of media culture involves understanding the forms, techniques, and strategies used by the media, as well as how audiences understand and use media products (Woodcock & Johnson, 2019). Media culture encompasses various elements, including but not limited to: popular culture, representation, media influence, media literacy, media production, and technological impact (Tugtekin & Koc, 2020). Given its ubiquity, media culture significantly affects the formation of individual identities, societal values, cultural perceptions, and the fabric of social life (Levin & Mamlok, 2021). Consequently, the study of media culture is important in understanding contemporary society.

Gender issues and fan studies also feature prominently in this discourse. Kamble et al. (2020) presented a comprehensive review of these fields, exploring how concepts of femininity, masculinity, and queerness have been researched and represented. This includes a transition from early work with subcultures to more recent work involving online communities.

Assessment of different media in cellular studies is also a crucial focus, as demonstrated by Broadbent et al. (2020), who assessed two different media, Promocell and PneumaCult, during the differentiation and maintenance of well-differentiated primary nasal epithelial cell cultures (WD-PNECs).

Consequently, given the abundant content within current media culture research, it becomes imperative to consolidate these relevant findings. While visual analysis in media studies is not a novel concept, the importance of media culture in contemporary times cannot be understated, especially considering its significant contribution to society's sustainable development. This research presented herein collates the extant visualization findings within media studies, thereby offering a comprehensive overview of the field.

2.2 Visualization of Media Research

Li et al. (2019) used the Web of Science (WoS) database to analyze themes, evolution, and research trends in LIS from 1989 to 2018 using CiteSpace. They identified influential teams, such as the Wanggen Wan team at Shanghai University and the Haoran Xie team from City University of Hong Kong, indicating the maturation of the field.

Wang et al. (2020) investigated the hotspots of Social-media Big Data (SMBD) in recent years. They provided a summary of the frontier of SMBD based on keywords and co-citation literature, including the deep excavation and construction of social media technology, the reflection, and concerns about the rapid development of social media, and the role of SMBD in solving human social development problems.

Another notable study by Lu et al. (2020) aimed to identify the most pressing topics of social media and government trust research as represented in the existing literature. They presented an in-depth analysis of social media and government trust research to better understand governance and emerging directions in this field over the past 19 years. A scientometric analysis on the topic "Oil and petroleum products in soil and groundwater" was conducted by Busygina and Rykova (2020) using a documentary array selected from the Web of Science database. Their research further underscores the increasing utility of scientometric analysis in various fields.

Meanwhile, Xie et al. (2021) conducted a scientometric analysis of maternal health in the new media environment. They analyzed the top countries and institutions, potentially high-impact literature, research frontiers, and hotspots. This provides a valuable new dimension in understanding the factors that can influence the adoption of new research methodologies or technologies.

Meanwhile, Huang et al. (2022) used the CiteSpace software to summarize available data from 6,756 publications (2000-2022), providing insights into the specific characteristics of PFASs and showing global development trends that can be used for future research directions. Their work offers a novel method for quantitatively visualizing information about the development of this field over the past 23 years.

Finally, Lu et al. (2023) sought to understand the research status of the relationship between health communication and the doctor-patient relationship. They adopted qualitative methods to quantify the literature over the past 10 years in the Web of Science database and carried out Co-Authorship Analysis, Co-Citation Analysis, and Co-Occurrence Analysis based on CiteSpace, illuminating the nexus between health communication and healthcare interactions.

Despite the considerable accomplishments made using Citespace within the academic community, visual analysis of media culture remains largely unexplored. Consequently, creating a knowledge map of media culture utilizing Citespace presents an innovative approach. This methodology facilitates the interpretation of media culture's development from various perspectives, thereby offering comprehensive insights for future media culture research. Moreover, it contributes to fostering sustainable development within the media industry.

3. Research Methods

CiteSpace, an information visualization software uses the Java language, currently as the most widely utilized tool for visualizing scientific knowledge. By employing CiteSpace, the researchers were able to effectively illustrate the contextual landscape of a specific research domain, allowing the intuitive depiction of hidden patterns within extensive datasets that might otherwise remain elusive. The implementation of automatic clustering within CiteSpace relies on the spectral clustering algorithm, which inherently offers advantages for clustering tasks that are based on link relationships within co-citation networks, rather than node attributes. This feature enables the researchers to comprehensively *synthesize literature* from various disciplinary perspectives, facilitating a comprehensive, systematic, and objective understanding of a given knowledge field. The visualization technology makes possible the precise analysis of extensive research documents, thereby facilitating comprehensive examinations of changes and development trends pertaining to prominent topics within a specific field (Li et al., 2023).

Currently, very few scholars in China have utilized science-based methods to analyze Chinese media culture studies. This paper therefore adopts the bibliometric method and CiteSpace visualization tool to integrate the co-occurrence of keywords and the changes and development trends of media culture research hotspots, so as to capture an overall picture and provide references for the future research of Chinese media culture.

A total of 602 valid literature items were obtained from the China National Knowledge Infrastructure (CNKI) with the title of "subject = 'media culture.'" The obtained data were exported in txt file format, named with CiteSpace recognizable file name and processed. The time span of this paper was from 2000 to 2023. The inclusion and exclusion criteria of this paper were as follows:

Inclusion criteria: (1) literature related to media culture, and (2) published between 2000 and 2023.

Exclusion criteria: (1) duplicate publications, and (2) experience exchange, review and other documents.

4. Results

4.1 Trend of Publications

The quantity of articles published within a specific timeframe provides insights into the developmental characteristics of a particular field. This study retrieved a total of 602 relevant literature sources. By importing these 602 data points into Excel, the annual publication count can be swiftly obtained. Drawing upon this data, a graphical representation depicting the trend of core research on media culture from 2000 to 2023 can be deduced (see Figure 1). Figure 1 illustrates a fluctuating increase in the annual publication count over the years. Based on the trend depicted by the curve, core research on media culture can be broadly categorized into four distinct stages: the initial stage (2000-2004), the low stage (2005-2012), the development stage (2013-2018), and the decline stage (2018-2023).

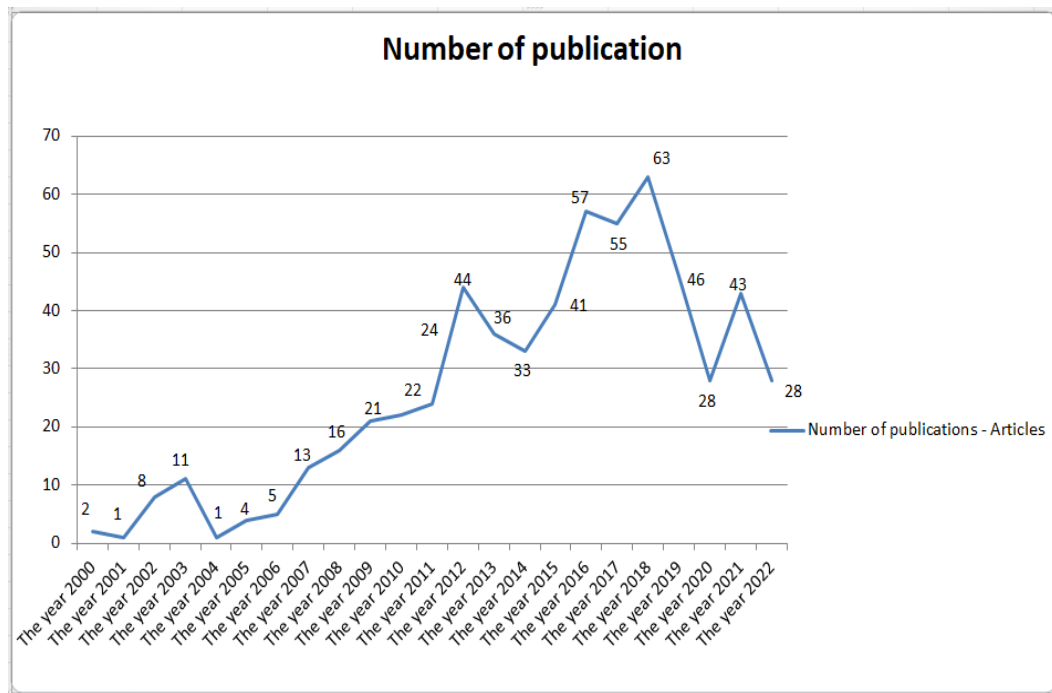
During the initial stage, the annual publication count ranged from 1 to 11, indicating a limited research base and a lack of widespread interest within the core research community toward the concept of media culture. Most studies during this period focused on the traditional understanding of popular culture and drew upon existing works by Western scholars. At the turn of the 21st century, mass media was primarily perceived as a communication tool, and the researchers rarely explored its cultural functions. Apparently, the concept of media culture had limited exposure among scholars.

In the low-grade stage, the annual publication count ranged from 5 to 25 papers. This represents notable progress compared to the initial stage, indicating an increasing number of Chinese scholars becoming acquainted with the concept of media culture and conducting research in this area. Additionally, the rapid development observed during this stage signifies that more scholars have recognized the significant impact of media culture on the audience, coinciding with the rapid expansion of the media industry.

In the development stage, the annual publication count ranged from 30 to 60 papers, demonstrating a substantial increase in the number of published articles. This indicates that the concept of media culture began to capture the attention of scholars within the core research community, displaying a trend of fluctuating development. Concurrently, the period witnessed rapid advancements in new media technologies, enabling the media to facilitate public acceptance and engagement with social culture through a diverse range of media formats. Consequently, the cultural attributes of the media garnered attention from the researchers concerned.

As for the declining stage, the annual publication count ranged from 25 to 50 papers, representing a decrease compared to the development stage. During this phase, external communication entered its third wave, and media integration reached a new stage. The rapid development of the all-media landscape in China, including the vigorous development of county-level media and four-all media, attracted more researchers to focus on the integration of traditional and new media platforms.

Figure 1: The Number of Publications in Graph of Annual Publication Volume



4.2 Knowledge Map of Authors' Cooperation

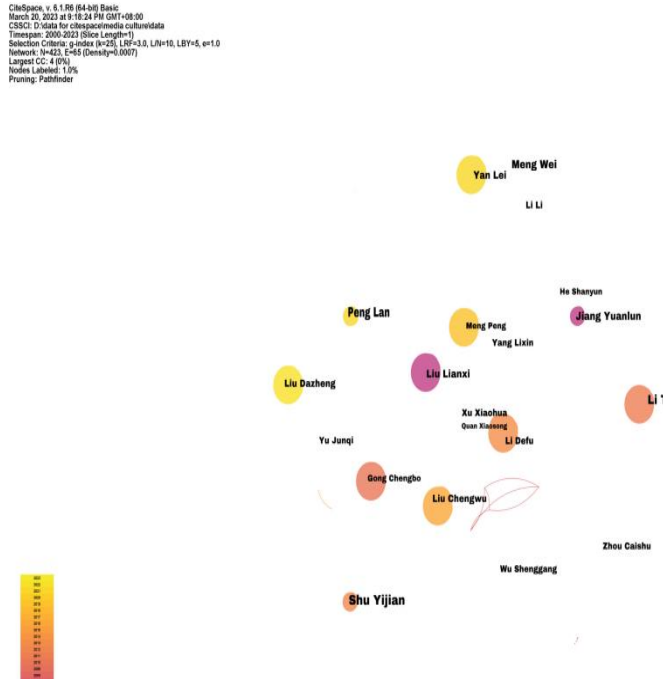
With the utilization of CiteSpace software, the researchers conducted a visual graph analysis on a dataset comprising 602 data items, with the node type set as "author." This analysis was shown in Figure 2 below. The information displayed in the top left corner of the figure provides key data, including "N=" and "E=" values. "N" represents the nodes, which in this case are the authors appearing in the dataset. The font size of an author's name corresponds to the frequency of their appearance in the data. On the other hand, "E" represents the edges, indicating the co-occurrence of authors within the same literature. Thicker lines between nodes signify a higher frequency of co-occurrence, thereby revealing the collaborative relationships between authors.

In the author co-occurrence map, there are 423 nodes (authors) and only 65 lines (edges) indicating cooperative relationships. It is noticeable from the figures that there are limited connections among some authors, including several prominent ones, such as Peng Lan, Jiang Yuanlun, and Shu Yijian. This suggests a lack of collaboration among researchers within the field of media culture.

The visualization results provided in Figure 2 offer valuable insights into the collaborative dynamics within the research community, highlighting both the presence of

limited connections among certain authors and the significant contributions of key researchers. By analyzing the cooperative relationships depicted in the graph, the researchers of the present study were able to gain a deeper understanding of the collaboration patterns and potential areas for fostering further cooperation within the field of media culture.

Figure 2: Authors' Linkage Map



As seen, the Author Analysis feature of the CiteSpace software, the data on the top 9 most prolific authors were extracted and organized into Table 1 below. Among them, Peng Lan, Yang Lixin, Jiang Yuanlun, and Shu Yijian have published the highest number of articles, with each author contributed three articles. The remaining authors in the top 9 list have mostly published one or two articles. When combined with the information from Figure 2, it shows that research on media culture in China has followed a single-core development model, with a small group of core members occupying significant positions and playing pivotal roles. By integrating the data from relevant keywords in the two figures, the researchers of the present study identified the primary research areas within media culture by the core research group.

The data provided in Table 1 highlight the prominent role of a few core authors in media culture research, while also indicate that other authors have made significant contributions with one or two publications. This point, in combination with the information derived from Figure 2, reveals the single-core development model observed in Chinese media culture research. By considering the data from relevant keywords in both figures, the researcher of the present study identified the primary research areas in media culture by the core research group, and gained insights into the key focus areas of media culture research in China.

Table 1: Information on 9 Productive Authors

Serial number	Author	Number of publications	Initial publication year
1	Yang Lixin	3	2002
2	Shu Yijian	3	2012
3	Peng Lan	3	2003
4	Jiang Yuanlun	3	2002
5	Zeng Yiguo	2	2016
6	Liu Lianxi	2	2011
7	Yu Xiaozhi	2	2017
8	Yan Lei	2	2021
9	Li Defu	2	2013

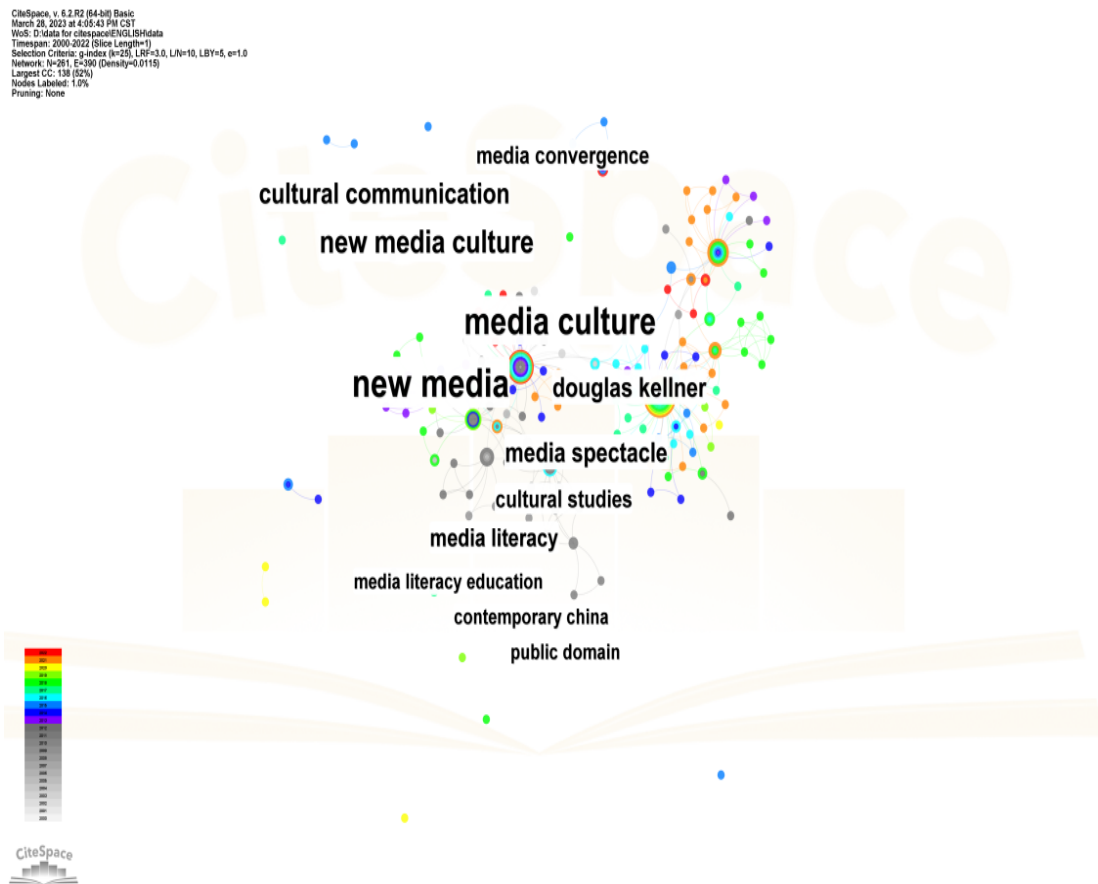
4.3 Keywords Co-occurrence Map

By selecting the "Keyword" node type in the CiteSpace interface, the researchers conducted a visual analysis of the scientific map, and concluded with a keyword co-occurrence map displayed in Figure 3 below. The keywords in the map are clustered based on correlation algorithms, leading to the keyword clustering map depicted in Figure 4. The cluster map highlights structural features between clusters, emphasizing key nodes and significant connections. By integrating the data from relevant keywords in both figures, the researchers analyzed the primary research fields within media culture in the core research community.

In Figure 3, keywords, such as media culture, cultural communication, new media culture, and media spectacle appear with larger sizes, indicating their high frequency of occurrence among 602 documents analyzed. It can be noted that other keywords with relatively smaller sizes are also present, including cultural studies, public domain, and media convergence. This indicates that the culture-media scholars have continued to address various topics within the field, showing a broader range of research interests.

Chinese media culture studies primarily focus on investigating media culture from different modes of expression. The key terms in this domain include "new media" and "new media culture." Furthermore, media culture studies place an emphasis on quality education, as reflected by keywords, such as "media literacy education" and "media literacy." Additionally, media culture research encompasses the innovation and dissemination of culture, with relevant keywords including "cultural communication" and "media convergence."

By analyzing the keywords presented in both Figures 3 and 4, the researchers of the present study were able to gain a comprehensive understanding of the main research fields within media culture, as pursued within the core research circle.

Figure 3: Keywords Co-occurrence Map

To enhance the precision of summarizing the research field, this paper utilizes CiteSpace's keyword clustering function to identify closely related keywords in Figure 3, resulting in the formation of keyword clusters. The obtained keyword clustering map is presented in Figure 4, revealing 7 distinct clusters of the research on Chinese media culture. CiteSpace provides two metrics, namely the modularity value and the average silhouette value, which are based on the definition of network structure and clustering. A modularity value above 0.3 indicates a significant clustering structure, while an average silhouette value of 0.7 suggests a convincing clustering result.

The data displayed in the upper left corner of Figure 4 indicates a modularity value of 0.8625 and an average silhouette value of 0.906. These values confirm that the clustering structure within the clustering map is highly significant, and the obtained results are compelling.

By employing the keyword clustering function of CiteSpace and evaluating the modularity and average silhouette values, this study ensures the reliability and validity of the clustering analysis, enabling a robust and trustworthy identification of distinct clusters in the research on Chinese media culture.

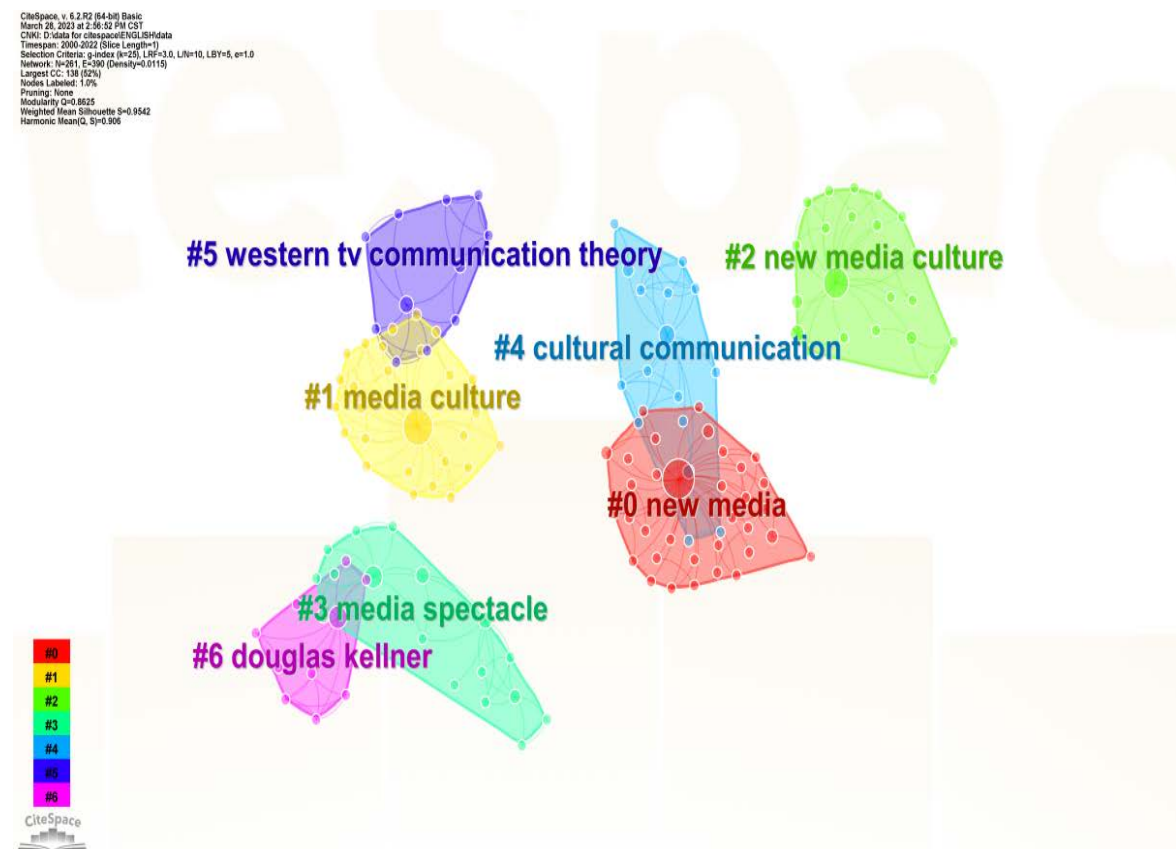
Figure 4: Keywords Clustering Map

Figure 4 depicts the cluster sizes in decreasing order, indicating the number of literature items in each cluster. Table 2 captures the relevant data from the CiteSpace cluster, and highlights the topmost representative keywords from each cluster. These keywords identify the research field of Chinese media culture in the core research community. By conducting an integrated analysis of the keywords in Table 2 and the keyword information in Figure 4, the researchers classified Chinese media culture into three areas:

(1) From the perspective of the media industry orientation: This area encompasses research topics, such as new media, new media culture, and media spectacle. Examining media culture from this angle focuses on the orientation and characteristics of the media industry.

(2) From the perspective of cultural studies in media culture: This area explores cultural communication and media culture as key research themes. Understanding media culture through the lens of cultural studies delves into the cultural dimensions and communicative aspects in this field.

(3) From the perspective of theoretical research in media culture: This area encompasses theoretical perspectives within media culture, including Western TV communication theory and the work of Douglas Kellner. Researchers in this area tend to analyze and advance theoretical frameworks to project a clear picture of media culture.

By categorizing the research on Chinese media culture into these three areas, this study provides a comprehensive overview of the key themes and focal points within the field.

Table 2: Cluster Summary

Cluster	Quantity	Silhouette	Origin year	Representative keywords in the cluster
#0 New media	35	0.973	2015	New media;The new media culture; Information culture; Cultural transmissiion
#1Media culture	27	0.897	2012	Media culture;mainstream guidance
#2New media culture	22	0.989	2017	New media culture; Ideological and political education
#3Media spectacle	17	0.955	2011	Media literacy; Media education; Meid a spectacle
#4 Cultural communication	17	0.966	2016	Social media; Cultural communication; network media
#5Wesern tv communication theory	11	1	2009	Cultural studies; Contemporary china
#6Douglas Kellner	10	0.898	2014	Douglas Kellner; iner tension

4.4 Keyword Co-occurrence Map

The keyword co-occurrence map presented in Figure 4 is transformed into a keyword timeline view; and when combined with the research breakout points from 2000 to 2023 as summarized by CiteSpace, it facilitates the identification of research hotspots in different stages. Keywords serve as a means to refine the article content and identify core perspectives. The timeline representation of keywords with high frequency of emergence effectively reflects the research hotspots and evolutionary trends within media culture.

Figure 5, displaying the keyword timeline, illustrates that early-stage research primarily focused on fundamental categories of media culture. From 2000 to 2005 in the 21st century, the research content centered around the development of mass media, its cultural aspects, and its influence. Starting in 2005, China's media industry underwent a rapid development phase. Consequently, the research content shifted its focus toward the development of we media and new media. After 2010, Chinese media culture continued to undergo constant adjustment and change, leading to the exploration of new avenues for media development becoming the primary research focus in the present era.

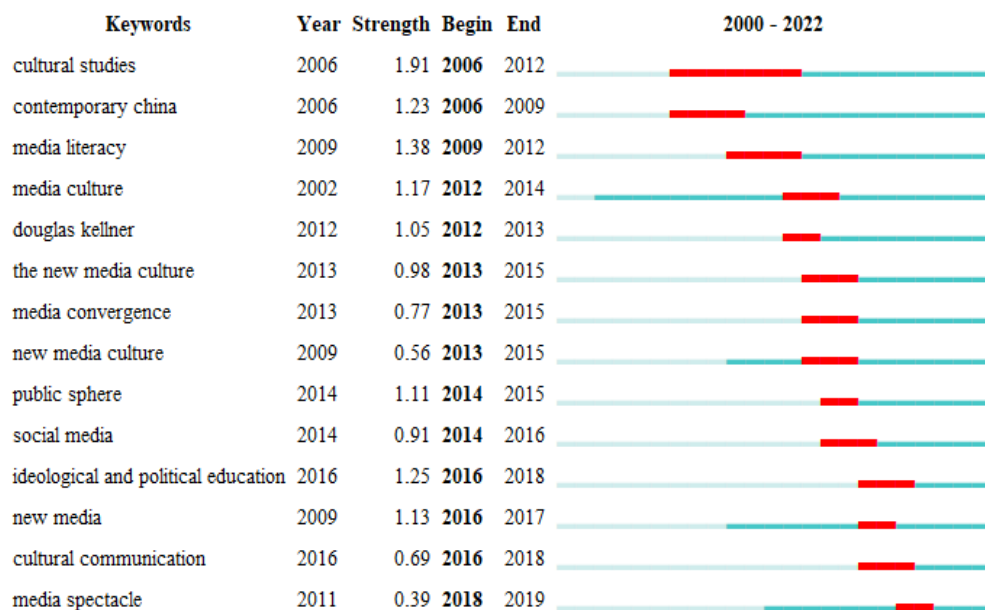
By utilizing the keyword timeline approach, this study comprehensively captures the evolving research landscape in media culture, providing valuable insights into the shifting research priorities and emerging trends across different stages.

information production, visualization, and distribution. Concurrently, the rise of user-generated content through new media has empowered ordinary individuals with the ability to disseminate information. Consequently, research focus gradually shifted from television media to new media platforms during this period.

By identifying these distinct stages and corresponding research focuses, the researchers of the present study have provided insights into the dynamic nature of research in Chinese media culture over time.

Figure 6: Keywords Burst Point Map

Top 14 Keywords with the Strongest Citation Bursts



5. Discussion and Conclusion

After decades of national development, Chinese media culture research has made considerable progress, but there are still some limitations that need to be addressed urgently. This paper intends to list such drawbacks in the research process by referring to relevant literature, and give practical suggestions.

First of all, the research on Chinese media culture is still not well-balanced. According to the above data analysis, it can be seen that there is not much cooperation and contact between research authors and research institutions, and the core research circle focuses on the existing foreign research on media culture. Li et al. (2023) sorted out and summarized Kellner's media culture theory, and analyzed the wonders of today's China based on the media culture theory generated by the Western social environment. Ordinary people need to strengthen their media literacy education, and researchers could have paid more attention to critical research on media culture. It can be noted that the previous media culture studies focus on summarizing the development of foreign media culture studies, rather than investigate specific issues on the actual media-cultural development of China. Therefore, it is necessary to strengthen cooperation among Chinese researchers to create and develop media culture theories and systems in line with Chinese localization.

Secondly, there is a lack of quantitative research on Chinese media culture. At present, scholars in China's core research circle prefer qualitative research, and few studies tend to adopt quantitative research methods. As seen, subjective content interpretation serves as the main method, and objective analysis by scientific measurement tools is rarely used. Li and Zong (2022) analyzed the reform and innovation of new media culture in colleges and universities from the aspects of top-level design in colleges and universities, the quality of new media practitioners, the content and services created by new media, and the scenes of constructing cultural characteristics. They fully discussed the trend, guidance and regulations of new media culture in colleges and universities. However, the guiding significance toward qualitative practice could be rather weak in contrast with quantitative research with quantified data. Both qualitative and quantitative methods could be used to obtain two sets of data so that the results could be concluded more objectively and convincingly.

To the researchers of this present study, Chinese media culture research tends to be more of a macro than micro phenomenon. At present, scholars in the core research circle mainly focus on the evaluation of the characteristics, influence and effect of media culture in the study of the basic category of media culture, the problems in the development process of media culture and the direction of media culture (Plantin & Punathambekar, 2019). Dunas & Vartanov (2020) pointed out from the perspective of cultural consumption that in the context of new media, media culture consumption shows a brand-new look, derived from the characteristics of technology, popularization and globalization, and its consumption subject, consumption means, consumption scene and consumption content also change. Researchers' understanding of media culture rarely starts from the generation of the cultural variety and its interaction with the public. To approach such a limited research scope, scholars need to uphold the consciousness of inquiry, break away from the macroscopic analysis of media culture, and try to broaden the research idea of media culture research.

6. Recommendations

Based on the major findings on Chinese media culture under study, the researchers would like to recommend the following:

(1) Media culture researchers may consider adding the dimension of quantitative research into their work so that there will be a good balance in providing evidences from two sources—both subjectively and objectively.

(2) It is crucial to enhance the localization of Chinese media culture studies. While there are notable differences and unique focuses in Chinese media culture compared to foreign counterparts, there is a lack of distinct research topics that truly embody Chinese characteristics. Therefore, it is imperative for China to establish a research system that reflects its own cultural context as soon as possible.

(3) It is essential to expand the scope of Chinese media culture research by exploring interdisciplinary approaches. Media culture as a subject encompasses various disciplines, such as pedagogy, politics, sociology, and other subdisciplines in social sciences. By integrating other disciplines, the research landscape can be broadened, enabling a deeper understanding of media culture through systematic thinking.

In closing, the researchers have acknowledged the rapid growth of social media platforms like Douyin and WeChat as contributing to the research development of cultural phenomena and media culture. Media culture research is still a relatively new field, requiring researchers to boldly explore beyond the existing communication theory and expand the foundational framework of media culture. With high-capacity digital technology and new platforms, researchers can pave their way for further advancements in meaningful media culture research.

7. The Authors

Songyu Jiang, Ph.D. and Ming Li, Ph.D. are full-time lecturers at Rattanakosin International College of Creative Entrepreneurship (RICE), Rajamangala University of Technology Rattanakosin (RMUTR), Thailand. Both authors share their research interest in the areas of creative entrepreneurship, and current issues in international management, media culture, and digital marketing strategies.

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