

Subtitling Translation Research in China (2004–2024): A CiteSpace-Based Visual Analysis of CNKI Publications

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Abstract: In recent years, subtitling has emerged as a prominent topic in the field of translation studies. This paper conducts a quantitative analysis of literature related to “subtitling” retrieved from the China National Knowledge Infrastructure (CNKI), focusing on sources indexed in the CSSCI and Peking University Core Journals databases. Utilizing the bibliometric tool CiteSpace, the study reviews the research hotspots and developmental trends in Chinese subtitling studies over the past two decades. The findings reveal that, driven by the growth of the film and television industry, deepening cross-cultural communication, and continuous technological advancements, research in this field has gradually shifted from theoretical exploration to practical application. The focus has become increasingly refined, diversified, and intelligent, expanding into interdisciplinary and multimodal translation studies. The paper also discusses current limitations in the research and outlines future directions, offering targeted suggestions to provide valuable references for further studies and practical endeavors in this domain.

Keywords: Subtitling; Research hotspots; Development trends; Visualization analysis

Online publication:

1. Introduction

Subtitling is widely recognized as a written, additive, immediate, synchronous, and multimedia form of translation. Gottlieb (1992) classifies subtitling into intralingual and interlingual types^[1], with the latter referring to the translation of source-language speech into target-language text displayed at the bottom of the screen while preserving the original audio^[2]. Early research on subtitling primarily concentrated on theoretical foundations, with Nida's theory of functional equivalence serving as a key guiding principle. Within this framework, strategies such as condensation, free translation, and domestication have been employed to facilitate effective intercultural communication in audiovisual contexts^[3].

Technological advancements and the proliferation of media formats have significantly expanded the scope of audiovisual translation. In the Chinese context, the development of audiovisual translation can be delineated

into four stages: film translation, television and video translation, VCD/DVD and television translation, and modern digital audiovisual translation, each characterized by distinct technical and cultural features^[4]. In recent years, the adoption of artificial intelligence technologies such as automatic speech recognition and neural machine translation has notably enhanced subtitling efficiency and reshaped industrial workflows^[5]. However, subtitling continues to lag behind traditional text localization in terms of automation and technological integration^[6].

Contemporary subtitling research increasingly addresses a wide range of application domains, including medical communication, online video platforms, and educational content. Multimodal analysis has emerged as a dominant methodological approach, reflecting a shift from monomodal frameworks to integrated models that account for the interaction of linguistic, visual, and auditory modes^[7]. The rise of streaming media has further accelerated the demand for linguistic variety and cultural accessibility, driving innovations such as bilingual and customizable subtitle formats^[8]. Nonetheless, challenges remain, particularly regarding the limited scope of application and the incomplete incorporation of emerging technologies, issues central to the continued advancement of the field.

To trace the development of subtitling research and uncover key trends and thematic shifts, this study employs CiteSpace, a bibliometric visualization tool, to analyze literature published over the past two decades in the China National Knowledge Infrastructure (CNKI) database. By examining patterns in publication volume, keyword co-occurrence, clustering, and temporal dynamics, the study provides a comprehensive overview of subtitling scholarship in China. The findings aim to contribute to a clearer understanding of the field's evolution and offer meaningful insights for future interdisciplinary research and professional practice.

2. Methodology

This study employs a mixed-method approach that integrates systematic literature retrieval and bibliometric analysis to investigate the evolution of subtitling research in China over the past two decades. The primary aim is to identify major research themes, emerging hotspots, and developmental trajectories in the field.

CiteSpace, a widely used tool in scientometrics and bibliometric research, was utilized to generate visual representations of scholarly patterns. These include keyword co-occurrence networks, clustering maps, timeline visualizations, and annual publication trend graphs, which together offer a comprehensive view of the field's intellectual structure and dynamic progression.

The research process began with a structured literature search using the China National Knowledge Infrastructure (CNKI) database. The term “subtitling” served as the primary search keyword, with results limited to journal articles published between January 1, 2005, and December 10, 2024. The search was further refined to include only those indexed in the Peking University Core Journals and CSSCI databases. This yielded an initial corpus of 414 records.

A manual screening was then conducted to remove non-scholarly materials such as book reviews and conference notices, resulting in a final dataset of 372 articles. Content analysis was performed to identify key thematic patterns and conceptual linkages. To ensure the accuracy and reliability of the results, all data imported into CiteSpace were carefully verified, and multiple rounds of visualization and interpretation were carried out to enhance consistency and analytical rigor.

3. Findings

Based on the visualized bibliometric analysis conducted using CiteSpace, this study generated a series of visual outputs, including annual publication volume, keyword co-occurrence, keyword clustering map, keyword burst detection, keyword timeline, and centrality table. The findings derived from these visualizations are as follows:

3.1. Analysis of annual publication volume

The annual volume of academic publications is a key indicator of scholarly interest and evolving research trends. This review examines the trajectory of subtitling research in China from 2005 to 2024, as shown in Figure 1.

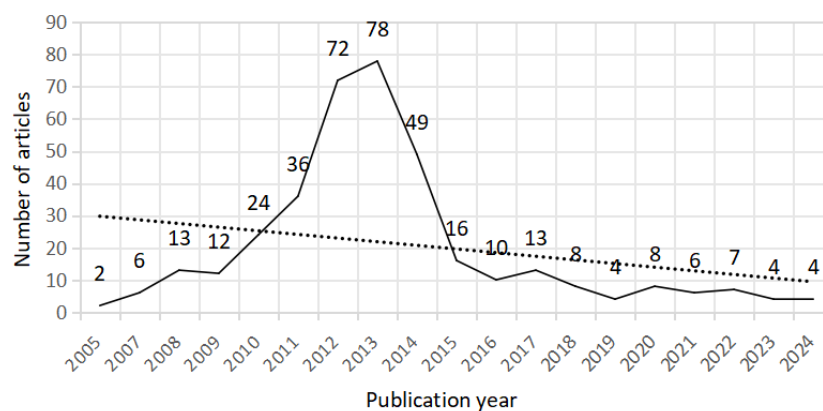


Figure 1. Annual publication volume of research on subtitling (2005–2024).

Between 2005 and 2010, publication output remained modest, reflecting the limited development of the domestic film and television industry and early technological constraints. This period marks the formative stage when subtitling began to gain recognition as an academic field. From 2010 to 2014, publication volume increased significantly, peaking at 78 articles in 2013. This surge was driven by advances in subtitling tools, increased demand for audiovisual content, and supportive policies promoting research in translation and media. However, after 2015, output declined sharply, reaching a low of 10 articles in 2016. This drop may indicate research saturation, shifting academic interests, or reduced funding. From 2017 onward, annual publications stabilized at a lower level (4–13 articles per year), suggesting that the field has matured. Recent research reflects a shift from broad theoretical inquiry to more specialized investigations, with growing attention to subtitling technologies and interdisciplinary applications.

3.2. Keyword co-occurrence analysis

Keywords provide concise insight into the thematic focus and conceptual scope of academic publications. Analyzing high-frequency keywords in subtitling literature enables the identification of key research hotspots and emerging trends. Using CiteSpace, a keyword co-occurrence map was generated for the period 2005–2024 (Figure 2).

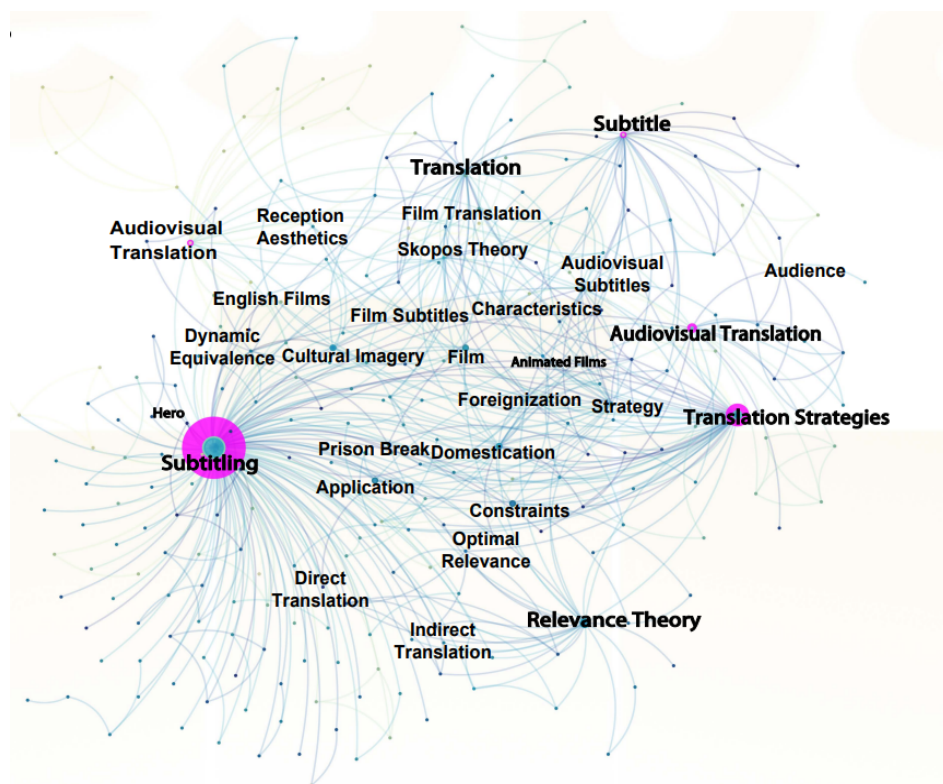


Figure 2. Keyword co-occurrence map of subtitling research (2005–2024).

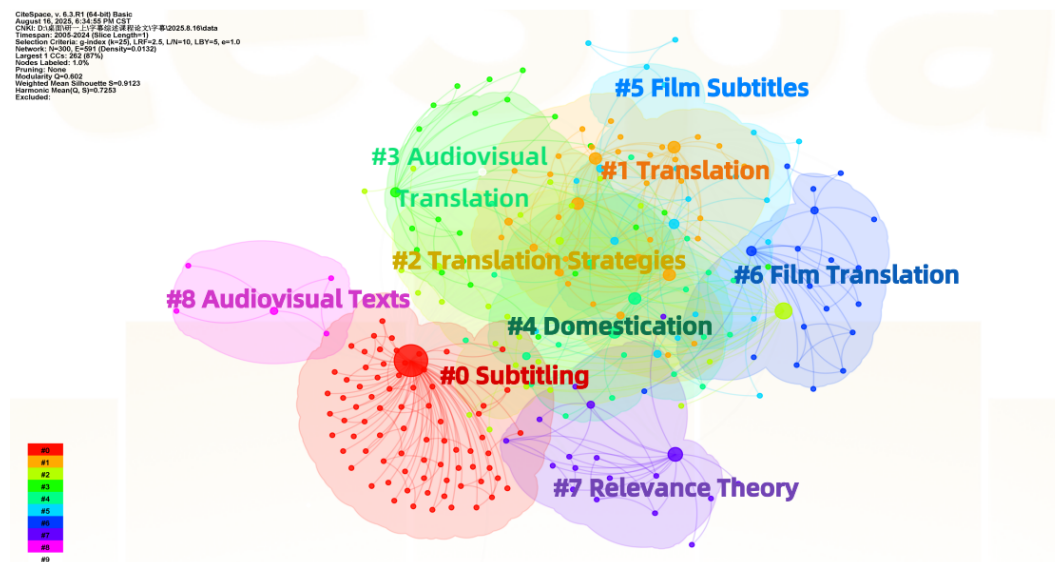
The visualization shows that subtitling, audiovisual translation, and translation strategies are the most prominent nodes, indicating their centrality in the discourse. These terms are frequently associated with concepts such as cultural imagery, domestication, foreignization, and skopos theory, emphasizing the importance of cultural context and strategic decision-making in subtitling practices.

Subtitling remains the dominant theme within China’s audiovisual translation research, especially in relation to film and television. Two major focal points emerge: (1) the synthesis of commonly used subtitling strategies and techniques, and (2) the linguistic and cultural analysis of Chinese and international screen texts, often grounded in established frameworks like functional equivalence, relevance theory, and domestication ^[9].

The map also highlights application areas and methodological directions. The inclusion of titles like “Hero” and “Prison Break” reflects frequent case study usage. Keywords such as audience and reception aesthetics point to increasing interest in viewer-centered approaches that extend beyond linguistic accuracy. Overall, the map demonstrates the multidimensional scope of subtitling research, encompassing theory, strategy, audience engagement, and media technology, thus offering a comprehensive understanding of the field’s development.

3.3. Keyword clustering analysis

Figure 3 presents the keyword clustering map generated using CiteSpace, revealing the thematic structure of subtitling research through nine distinct clusters. Each cluster is labeled with a representative term that reflects the core research focus within that group of co-occurring keywords.



Cluster #0 subtitling and Cluster #1 translation are the most prominent in size and density, highlighting the central position of subtitling and translation theory in the field. These clusters emphasize subtitling's foundational role as a translation modality and its theoretical underpinnings.

Cluster #3 audiovisual translation focuses on multimodal content, including screen translation and dubbing translation, highlighting the growing importance of integrating text, sound, and image—especially in film and television contexts.

Cluster #8 audiovisual texts emphasize audience reception and contextual meaning-making, indicating increasing interest in how viewers interpret subtitled content and how translators convey the original intent and tone.

3.4. Keyword burst analysis

Top 21 Keywords with the Strongest Citation Bursts

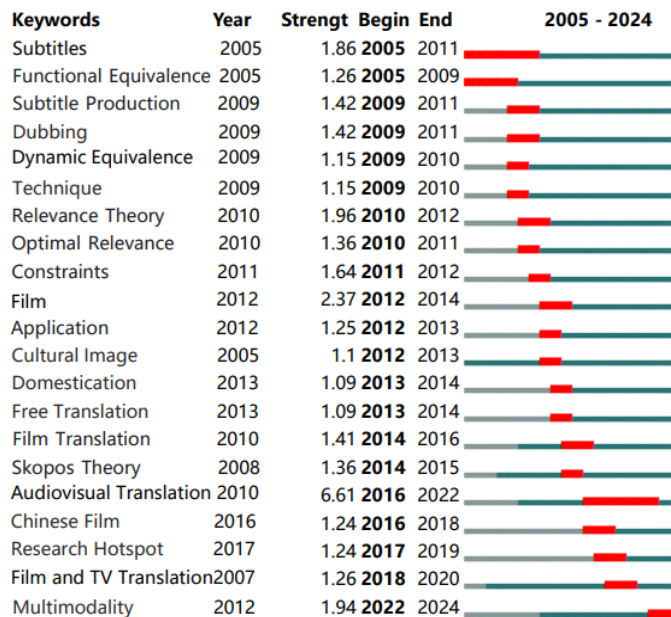


Figure 4. Top 21 keywords with the strongest citation bursts in subtitling research (2005–2024).

During the period from 2005 to 2011, the research landscape was primarily characterized by an emphasis on foundational translation theories and methodologies. Notable burst keywords during this phase include subtitles, functional equivalence, dynamic equivalence, and relevance theory. Translation strategies—both for subtitling and dubbing—emerged as focal points for academic discussion and critique ^[10]. This period reflects the early stage of the field, where theoretical grounding was prioritized.

Between 2010 and 2016, a significant thematic shift occurred, with burst terms such as subtitle production, dubbing and film translation reflecting an increasing engagement with practical translation processes and technical implementations. This transition marks a growing emphasis on the application of theoretical models to real-world subtitling practices, driven in part by the expansion of the audiovisual industry and the demand for higher-quality localized content.

From 2016 to 2024, the focus of subtitling research increasingly aligned with technological developments and the rise of multimodal translation. Burst keywords such as audiovisual translation and multimodality underscore the field's evolving engagement with the integration of text, sound, visuals, and interactive elements. These trends point to a broader redefinition of subtitling as a complex, interdisciplinary practice that operates across multiple semiotic channels. As Yin Mingming (2020) notes, the convergence of multimodal discourse analysis with audiovisual content has become an innovative and productive framework for examining subtitling phenomena ^[11].

Taken together, the burst analysis reveals a clear evolutionary trajectory in subtitling research: from theoretical inquiry to practical application, and from a monomodal to a multimodal paradigm. This trajectory mirrors broader shifts in translation studies and media environments, reflecting the growing complexity of contemporary communicative contexts. Looking ahead, future research should continue to explore multimodal translation, technological innovation, and their intersection with user experience, in order to further enrich the

theoretical depth and practical relevance of subtitling studies.

3.5. Keyword timeline analysis

Keyword timeline analysis offers a valuable means of examining the temporal evolution of scholarly discourse within a given field. By tracking the emergence and duration of high-frequency terms, this method enables the identification of persistent research foci and emerging areas of inquiry. Based on a dataset of 372 scholarly articles retrieved from the China National Knowledge Infrastructure (CNKI), a timeline visualization of keyword activity from 2005 to 2024 was generated using CiteSpace (Figure 5).

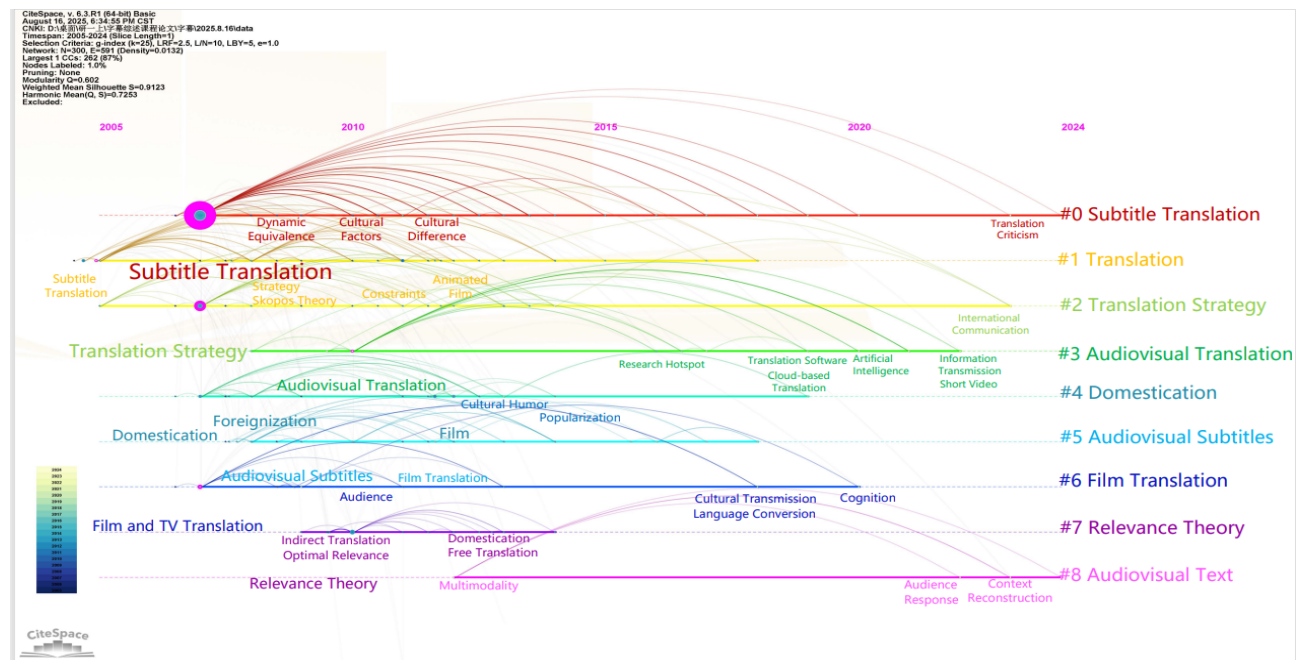


Figure 5. Keyword timeline map of subtitling research (2005–2024).

The timeline reveals a sustained and gradually increasing scholarly interest in subtitling. Keywords such as subtitling, translation strategies, and audiovisual translation demonstrate strong linkage strength and recurring presence across multiple time periods, indicating their status as foundational concepts within the field.

An observable thematic progression characterizes the field’s development. During the earlier stages, subtitling research was primarily grounded in translation theory, as evidenced by recurring keywords including translation strategies, domestication, and relevance theory. Over time, however, the field has shifted toward a more practice-oriented orientation. This transition is reflected in the increased frequency of keywords such as audiovisual translation, film translation, and audiovisual texts, which signal a growing interest in applied subtitling and multimodal content translation.

In recent years, the integration of digital technologies into subtitling practices has emerged as a significant research direction. Keywords such as cloud-based translation, translation software, and artificial intelligence highlight the field’s increasing engagement with automation and platform-based workflows. This trend parallels broader transformations in the translation industry and reflects an evolving technological landscape.

Simultaneously, the appearance of terms such as cultural factors and cognition points to a deepening interdisciplinary orientation. Scholars in China have increasingly adopted theoretical frameworks from fields such as discourse analysis, psycholinguistics, and cognitive pragmatics to explore the psychological and cultural

dimensions of subtitling ^[12]. This interdisciplinary approach has enhanced both the explanatory power and practical applicability of subtitling research.

Furthermore, keywords including cultural humor, cultural transmission, and popularization reveal a sustained interest in the adaptation of source-language cultural elements for target-language audiences. The frequent appearance of terms such as audience response and context reconstruction indicates an increasing emphasis on viewer-centered translation strategies—those that take into account the cultural background, cognitive expectations, and interpretive competencies of the target audience. Such strategies aim to enhance the communicative efficacy and acceptability of subtitles across diverse viewing contexts.

In sum, the keyword timeline analysis underscores the dynamic, interdisciplinary nature of subtitling research. As the field continues to evolve in response to technological innovation and cultural diversification, it is poised to expand further in both conceptual scope and methodological sophistication.

3.6. Keyword centrality analysis

Keyword centrality analysis is a widely adopted bibliometric method used to evaluate the significance and influence of specific terms within a scholarly corpus. By identifying keywords with high centrality values, researchers can detect concepts that occupy pivotal positions in the knowledge structure of a given field. In this study, centrality scores were generated using CiteSpace, and the results are presented in Table 1.

Table 1. Keyword centrality rankings in subtitling research (2005–2024)

| Frequency | Centrality | Year | Keyword |
|-----------|------------|------|-------------------------|
| 176 | 1.16 | 2007 | Subtitling |
| 39 | 0.22 | 2007 | Translation Strategies |
| 29 | 0.06 | 2010 | Relevance Theory |
| 22 | 0.07 | 2007 | Domestication |
| 19 | 0.1 | 2005 | Translation |
| 19 | 0.03 | 2008 | Strategy |
| 19 | 0.04 | 2008 | Skopos Theory |
| 17 | 0.04 | 2008 | Foreignization |
| 17 | 0.12 | 2005 | Subtitles |
| 14 | 0.17 | 2007 | Audiovisual Translation |

As the data indicate, subtitling ranks highest in both frequency and centrality, reaffirming its role as the dominant thematic focus in the field. Nearly all subtitling-related studies engage with this term either as a primary subject or a foundational concept. Similarly, translation strategies exhibit high levels of both frequency and centrality, suggesting that the strategic dimensions of subtitling—particularly in terms of method selection—constitute a sustained research concern. This trend appears especially prominent around the year 2007, which may represent a formative period in the development of the field.

The term relevance theory, although appearing later (approximately in 2010), has steadily gained traction in subtitling studies. Its emergence reflects a growing interest in cognitive and communicative frameworks, indicating a shift toward the integration of inferential models in translation analysis. In parallel, the terms domestication and foreignization—which represent two contrasting approaches to cultural translation—

also demonstrate notable centrality and frequency, highlighting their continued relevance in discussions of translational strategy and audience orientation.

It is worth noting that keywords such as subtitles and translation appeared as early as 2005, signaling the initial expansion of scholarly engagement with the field. The clustering of high-centrality keywords—particularly subtitling, translation strategies, domestication, and foreignization—around 2007–2008 indicates a period of intensified academic activity and conceptual consolidation. This temporal clustering suggests that this phase marked a turning point in which subtitling began to attract broader scholarly attention and theoretical exploration.

The subsequent appearance of relevance theory in 2010 exemplifies the gradual incorporation of newer theoretical models and analytical tools into subtitling research. This evolution reflects a broadening of intellectual horizons and a willingness to engage with interdisciplinary perspectives. Overall, the centrality analysis reveals a field characterized by both thematic cohesion and conceptual diversification. By examining the most central and frequently occurring keywords—and considering their temporal and relational dynamics—scholars are better positioned to grasp the current intellectual landscape of subtitling studies and to anticipate emerging directions in future research.

4. Discussion

4.1. Analysis of findings

The analysis reveals that from 2005 to 2011, the number of publications on subtitling research remained relatively stable, with a focus primarily on basic translation theories and methodologies. Between 2010 and 2016, a significant increase in publication volume occurred, driven by the rapid growth of the film and television industry and the intensification of cross-cultural communication, alongside a rising demand for high-quality subtitles. During this period, the research extended into practical subtitling applications and technical implementation.

In recent years, the publication rate has declined slightly, possibly due to the saturation of traditional research directions. However, the research themes have become more diversified, shifting toward interdisciplinary approaches, multimodal translation, and real-time subtitling. The integration of subtitling with other media formats has increased, and artificial intelligence technologies have gradually been incorporated into subtitling research.

In summary, the field of subtitling has undergone significant development over the past two decades, with research expanding in both depth and breadth. With ongoing technological innovation and the increasing frequency of cross-cultural communication, the field is expected to maintain its vitality and relevance in the future.

4.2. Comparison with previous studies

(1) Application of visualization tools

This study utilizes CiteSpace, a visual analysis tool, to systematically and intuitively process data and present results. By integrating keyword frequency, centrality, and timeline analyses, the research offers a comprehensive depiction of subtitling research trends and dynamics.

(2) Directions for future research

In addition to identifying gaps in current studies, this paper proposes potential research directions such as multimodal translation and cultural adaptation, aiming to provide meaningful insights for future

scholarly inquiry and practical advancement in the field.

4.3. Research significance and limitations

(1) High concentration on core topics

According to keyword frequency and centrality analysis, subtitling dominates the field, indicating that much of the research is centered around foundational concepts and applications. While this focus is necessary, it may also result in the underdevelopment of subfields. The prevalence of case studies and the accumulation of repetitive research are symptomatic of a bottleneck period. The noticeable decline in publication volume after 2013, as noted by Yan Xiaoshan et al. (2021), also suggests that audiovisual translation research in China has entered a plateau stage^[12].

(2) Limited scope of application

From the perspective of research approaches, most studies reviewed adopt relatively basic methods—primarily descriptive analyses of particular types of audiovisual texts to summarize their pragmatic features or investigate the translation strategies employed by translators^[13]. The findings reveal a lack of research on specialized types of subtitling. Although video translation remains a core application area, research on other subtitling types, such as educational videos, news broadcasts, and social media content, is relatively scarce and warrants further exploration.

Moreover, while multimodal translation—which involves the integration of images, sounds, and other media—is emerging as a new direction, it remains in its early stages and has not yet fully harnessed the potential of multimedia resources.

5. Conclusion

This study employed the bibliometric visualization tool CiteSpace to analyze 372 Chinese scholarly articles on subtitling published between 2005 and 2024. The results indicate that subtitling research in China has made significant progress over the past two decades, evolving from an early emphasis on theoretical frameworks to a growing focus on practical applications and the incorporation of emerging technologies.

The scope of subtitling studies has progressively broadened, extending into interdisciplinary domains such as media studies, linguistics, and computational translation. The interplay between subtitling and technological innovation, particularly in areas such as automated translation, cloud-based workflows, and multimodal content processing, has become increasingly prominent. These developments are reshaping both the methodologies and operational paradigms of subtitling practice.

Looking forward, a critical issue for future research is how to more effectively integrate artificial intelligence and related technologies into subtitling workflows. Such integration holds the potential to improve the efficiency, accuracy, and cultural sensitivity of subtitle production. More broadly, subtitling research is expected to play a vital role in enhancing the global accessibility and cross-cultural impact of audiovisual media, contributing to the formation of a robust and culturally adaptive media translation ecosystem.

Disclosure statement

The authors declare no conflict of interest.

Funding

The Educational Reform of Xi'an University of Posts and Telecommunications for Postgraduate Programs, "Integrating Chinese and English Discourses: An Exploration of the Optimization Path for the MTI Training Model Driven by PBL Theory" (Project No.: YJGJ2024034)

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