

# Knowledge Maps Analysis of Language Poverty Alleviation Research in China Based on the CiteSpace Method

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## Abstract

Poverty is a global problem, and in order to eliminate it, China has enacted a variety of policies, and the cause of poverty alleviation and reduction has achieved world-renowned success. At the same time, China's language poverty alleviation endeavour has also made remarkable achievements, and the relevant theories on language poverty alleviation have gradually been enriched. This paper analyzes the knowledge map of Chinese language poverty alleviation research in 2018-2024 in terms of issuing authors, issuing institutions, core keywords and other knowledge maps, using academic papers in the CNKI database as the database and the information visualization software CiteSpace as the research tool. Visual mapping suggests that the research process of language poverty alleviation in China can be divided into two phases, with a relative isolation and lack of co-operation between both the scholars and institutions conducting the research. In recent years, research perspectives in this field of study have tended to diversify and show a trend of multidisciplinary crossover, with "rural revitalisation" as the core research theme. In the new international and domestic situation, theoretical and methodological innovations in language poverty alleviation and the exploration of cooperation mechanisms are the main directions of future efforts.

## Keywords

Language Poverty Alleviation, CiteSpace, Knowledge Map, China

## 1. Introduction

Poverty is a common issue faced by humanity; poverty alleviation and eradication are one of the primary tasks outlined in the United Nations' Millennium Development Goals; and eliminating poverty and improving people's livelihoods are also important missions for governing parties in their administration of state

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affairs. Language is a crucial medium in individuals' daily work and life, an important symbol of cultural identity for a nation, and a significant governance tool for a political party or a country. Have you ever pondered over such questions as, "Is there a relationship between language and poverty?" and "What is language-based poverty alleviation?" Before answering these questions, we first need to know what the factors affecting poverty include. Generally speaking, the factors affecting poverty can be summarised in the following four points: Educational factors, employment problems, social systems and policies, and the individual's own factors. It is clear that language has a considerable impact on poverty. Firstly, language is the basis for people's access to education, and only by mastering the language can they have access to education; secondly, language is a tool for communication, and residents of impoverished areas often find it difficult to access high-quality employment opportunities due to language constraints; and lastly, language is also an important factor for social integration, and if residents do not understand or speak the dominant language of the locality they may face social exclusion and discrimination, which further exacerbates their impoverished situation. Therefore, improving the language skills of people living in poor areas will not only help them gain access to more educational and employment opportunities but will also enhance their personal development and promote social integration and cultural transmission, thus helping them to escape from poverty. So how should we define the concept of "language poverty alleviation"? According to Chunhui Wang's perspective, language-based poverty alleviation refers to a process of poverty reduction and development that is oriented towards improving overall quality, centered on enhancing language proficiency, and achieved through efficient coordination and cooperation among various linguistic factors and language policies (Wang, 2019a). Furthermore, apart from exploring the basic concept of language-based poverty alleviation, scholars from various countries have also engaged in discussions on the academic topic of "language and poverty" from multiple perspectives. For instance, Qin et al. have studied the impact and mechanism of Mandarin proficiency on poverty reduction. Using the China General Social Survey (CGSS) as their data source, they empirically examined the poverty reduction effects and mechanisms of Mandarin from the perspectives of social integration, social interaction, social equity, and social trust (Qin et al., 2022). Liu argues that targeted language-based poverty alleviation is an important component of poverty reduction efforts. Through case studies, he elaborated on the main pathways of language-based poverty alleviation and discussed the evaluation of its effectiveness (Liu, 2021). Herbert suggests that linguistic capital is itself an economic resource that can be used to provide employment opportunities. His research highlights the role of micro-language planning in poverty alleviation within the West African sub-region through the development of the indigenous language capital and the reduction of illiteracy and disease (Igboanusi, 2014). Bagwasi examined the role of language in poverty reduction in Botswana through adult education pro-

grams. They recommended taking into account the multilingual nature of local communities, allowing learners to participate freely, leveraging their indigenous knowledge, and enhancing their self-esteem and identity (Bagwasi, 2006). Although scholars from various countries have discussed the academic theme of “language and poverty” in various aspects, a systematic theoretical system has never been formed, and most of the studies have focused on the relationship between language and poverty and the economic benefits of language policies.

Diversity is a fundamental feature of China’s linguistic ecology, as China is a country with many ethnic groups and dialects (Gong et al., 2010). With the Chinese government leading the Chinese people to win the battle against poverty on schedule in 2020, China has eliminated the phenomenon of absolute poverty, and the cause of poverty alleviation and reduction in China has made remarkable achievements, among which the cause of language poverty alleviation has also made remarkable achievements, and the research on language poverty alleviation in China has gradually deepened in this process. Since 2018, with the release of China’s Action Plan for Promoting Putonghua and Poverty Alleviation (2018-2020), the launch of the “Learning Putonghua in Pre-school” programme, and the publication of Putonghua 1000 Sentences, a Putonghua textbook aimed at rural and ethnic minority areas, “Language Poverty Alleviation” has been gradually implemented as a policy initiative, and has attracted the attention of Chinese academics as an academic concept. Scholars such as Chunhui Wang (Wang, 2020), Yumin Li (Li, 2019), Hailan Wang (Wang, 2022), Zhaoxue Zhang (Zhang & Gao, 2019), and others have proposed to pay attention to the fundamental role of language in poverty alleviation and elimination. Starting in 2018, the number of articles on the topic of “language poverty alleviation” in China’s academic community has exploded like a rainbow. A staged summation and conclusion of the research findings on language poverty alleviation, along with the identification of the knowledge map in this field, can help us grasp the overall research trends and lay the foundation for subsequent innovative research. Although scholars have reviewed and prospected the research on language poverty alleviation from different perspectives (Wang, 2019b), their works are mostly based on qualitative analysis of a large number of documents, which introduces significant subjectivity in terms of document selection and classification criteria, hot topic tracking, and directional control. Based on this, this article attempts to use the literature on language poverty alleviation research in the CNKI database as the data foundation, and employ the information visualization software CiteSpace as the research tool to conduct a quantitative analysis of the research trends in China’s language poverty alleviation. By mapping out the knowledge map of China’s language poverty alleviation research, this article aims to sort out the research hotspots, frontiers, and evolution patterns in this field, providing innovative spaces for subsequent research.

The CiteSpace software system is a visualization tool developed by Professor Chen Chaomei, a Chinese scholar from the College of Information Science and Technology at Drexel University in the United States, using the Java program-

ming language. This software emerged against the backdrop of scientific metrology, data mining techniques, and information visualization. Through its visualization functions such as keyword co-occurrence, institutional distribution, and author collaboration, CiteSpace software maps out the knowledge graph of a specific field. It is used to showcase and analyze the evolutionary trends and hotspots in the forefront of the discipline, assisting scholars in quickly understanding the relevant conditions in that field (Chen, 2017; Synnestevedt et al., 2005). As a new quantitative analysis method for literature reviews, CiteSpace has garnered widespread attention and application in the academic community worldwide since its inception. Currently, the application of CiteSpace analysis methods in research on knowledge mapping is primarily concentrated in fields such as library and information science, management science, and education (Ashiq et al., 2021; Bicheng et al., 2023; Li et al., 2022). Research in the field of linguistics has a relatively late start. For instance, Chen et al. utilized 648 articles from the Web of Science between 1975 and 2018 and employed the effective tool of bibliometrics, CiteSpace, to provide a mapped knowledge domain of fuzzy linguistics research (Chen et al., 2019). Peng and Hu conducted a bibliometric analysis of research literature on COVID-19 linguistics, discovering that linguistic research related to COVID-19 is thematically limited (Peng & Hu, 2022). Sun et al. used the CiteSpace tool to summarize the current status of social media linguistics research over the past decade, finding that linguistic research on social media is often characterized by interdisciplinarity and mixed methods (Sun et al., 2021). Additionally, Azrifah and Vahid also employed the CiteSpace software to analyze the fundamental contours of research themes in applied linguistics (Zakaria & Aryadoust, 2024). Overall, there is a scarcity of research utilizing the CiteSpace software to analyze the outcomes of language poverty alleviation in China. Research in this field is still in its infancy, and there is an urgent need to comprehensively grasp its current status and progress. This would facilitate subsequent researchers in understanding the latest research trends and hotspots in this domain.

## 2. Materials and Methods

### 2.1. Methodology

Currently, the primary tools used by the academic community to create knowledge maps include Citespace, SPSS, Ucinet, VOSviewer, among others, with CiteSpace software being the most commonly utilized tool. The main function of CiteSpace software is to visualize and analyze the evolutionary trends and knowledge association states of disciplinary frontiers through various visualization functions such as keyword co-occurrence, institutional distribution, author collaboration, and bibliographic coupling. CiteSpace software can format and convert data exported from the CNKI database, create various types of knowledge maps, and display the temporal layout and hotspots of research fields through elements such as node size and network connectivity. Due to its simple

operation and clear visualization, this analytical tool has garnered widespread attention and application worldwide, especially in China. The information visualization tool used in this paper is the CiteSpace (Basic) software, with the version updated on March 10, 2024, being 6.3.R1.64-bit.

## 2.2. Research Setting and Data Collection

To ensure that the original data is comprehensive, accurate, and possesses a high degree of interpretability, authenticity, and reliability, this study utilizes the CNKI China Academic Journal Network Edition as the sample data source due to its extensive coverage and high volume of literature. Furthermore, to accurately grasp the direction of linguistic poverty alleviation research and enhance the quality of literature analysis, academic papers from journals included in CNKI are selected as the primary data source. Given the various expressions used in China for the academic topic of language poverty alleviation, the following search terms were selected: “Language poverty alleviation”, “Language helps to lift people out of poverty”, “Language poverty reduction”, “Putonghua-promotion-oriented poverty alleviation” and “Language revitalisation of the countryside.” Using the “topic” as the search approach, a total of 527 documents were retrieved for the period from 2018 to 2024. Since the concept of language poverty alleviation is a relatively new research area with limited related literature, in order to ensure sufficient data could be collected, we did not opt for the commonly used “title” as the search approach. Under the subject search mechanism of CNKI, the same article may appear in the search results of multiple subject terms. Therefore, it is necessary to record each search process in detail using a data table to avoid statistical errors in the experimental samples due to data duplication. See **Appendix A** for details. After repeatedly checking and organizing the search results, irrelevant entries such as conference notifications, conference calls for papers, newspaper reports, and introductions to achievements were deleted, resulting in a total of 312 valid sample documents. Each document contains information such as author, institution, keywords, abstract, and publication date. The search was conducted on March 17, 2024, and all documents were exported in RefWorks format for processing by CiteSpace software.

## 3. Statistics and Analyses

### 3.1. Analysis of the Temporal Distribution of Paper Releases

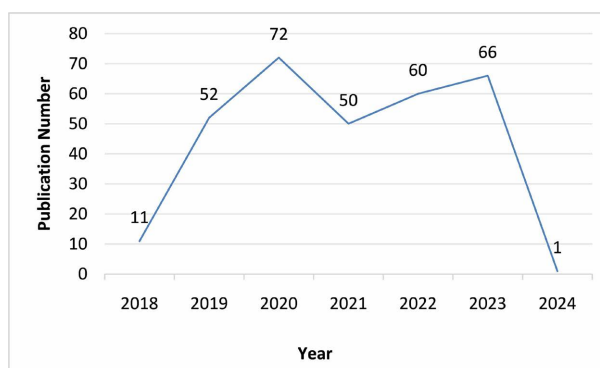
It is worth noting that initially, in order to obtain early relevant research data on this academic topic, we did not place any restrictions on the search time span. However, the search results revealed that prior to 2018, most of the relevant research focused on the impact of language on the economy and the policy effects of language, without paying much attention to the direct relationship between language and poverty alleviation. There were few documents that truly aligned with the thematic research of “language poverty alleviation.” Therefore, we ultimately decided to limit the search time span to 2018-2024. After statistical anal-

ysis of the retrieved documents, we obtained a chart (**Figure 1**) showing the annual publication trends in the field of language poverty alleviation research.

From **Figure 1**, we can observe that the annual total number of articles published in the field of language poverty alleviation in China has not increased year by year. Over the six-year period from 2018 to 2024, based on the characteristics of changes in the number of publications and the national policy background, we can divide it into two stages: The exploratory research stage under the background of poverty alleviation (2018-2020) and the deepened research stage in the post-poverty alleviation era. On January 15, 2018, the Ministry of Education of China, the State Council's Poverty Alleviation Office, and the National Language Commission jointly issued the "Action Plan for Poverty Alleviation Through Promoting Mandarin (2018-2020)," a programmatic document aimed at supporting the fight against poverty. This marked the beginning of a three-year battle against poverty through language. Consequently, scholars began to directly and deeply explore the relationship between language and poverty alleviation, as well as the relevant mechanisms of action, over the next three years starting from 2018. Articles on the topic of language poverty alleviation gradually increased each year. In 2020, China successfully won the battle against poverty, eliminating absolute poverty in the thousands of years of Chinese history. However, this does not mean the end of poverty. With the disappearance of the primary absolute poverty that had long plagued China, the country's poverty issues entered a new stage dominated by secondary and relative poverty. In 2021, China's poverty alleviation work entered a new historical period, and scholars began to deeply consider new directions for research on language poverty alleviation in the post-poverty era. At the same time, the repeated outbreaks of the COVID-19 pandemic in these two years have brought significant inconvenience to scholars' fieldwork in poverty-stricken areas. In summary, there are two reasons for the decrease in the number of documents published in the field of language poverty alleviation in 2021 compared to 2020. Firstly, scholars were exploring and conceptualizing the new stage of research on language poverty alleviation. Secondly, the COVID-19 pandemic restricted the necessary field research and data collection work for the study. Therefore, starting from 2021, the number of documents in the field of language poverty alleviation in China has shown a trend of increasing year by year. The reason for only one document in 2024 is that the data collection for this paper was conducted on March 10, 2024, and many new articles had not been published yet.

### 3.2. Analysis of Authors and Collaborative Networks

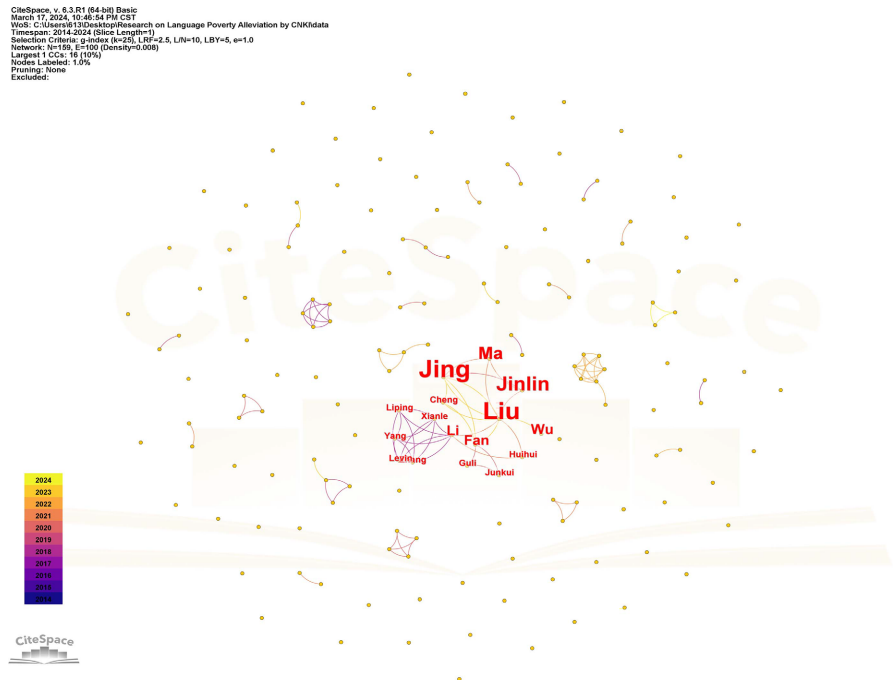
Authors are the mainstay of scientific research, and by analyzing the structural characteristics of the authors and their collaboration networks, we can gain insights into the core author groups and their collaborative relationships within a given field. After converting the data from 312 valid articles and importing them into CiteSpace software, we generated a knowledge graph of author co-citation clusters (**Figure 2**) through relevant settings. In **Figure 2**, the number and size of



**Figure 1.** Number of articles in language poverty alleviation research each year (2018-2024).

nodes represent the frequency of co-occurrence among the core author groups, while the number and thickness of lines reflect the strength of collaboration and cooperation among authors. Together, they form a knowledge graph of author groups and collaboration networks. The graph contains 159 nodes and 100 links, with a network density of 0.008. From the perspective of co-occurrence frequency, the top two authors are Liu Jinlin and Liu Yibing, with co-occurrence frequencies of 7 and 6 times, respectively. Following them are Jing Ma, Yuming Li, Wei Li, Zhihong Zhang, Tong Wu, and Min Du, who have co-occurred more than 3 times. In terms of collaboration networks, language poverty alleviation research exhibits a pattern of small concentrations and large dispersions. This means that while several core research teams have formed in this field, the connections between these teams are weak due to significant disciplinary differences. As can be seen from **Figure 2**, two major core research teams initially emerged in China's language poverty alleviation research: one centered around Jinlin Liu, Jing Ma, Yibing Liu, and Fan Cheng, and the other centered around Yuming Li, Zhihong Zhang, Huihui Li, and Wei Li. From the perspective of collaboration intensity, the internal collaboration within these core research teams is relatively strong. However, the research teams themselves are still in the stage of independent research, with almost no interdisciplinary connections, especially between linguistics and economics. This is not conducive to the sustainable development of language poverty alleviation research in the long run.

The statistics on the number of articles published by the first authors (**Table 1**) reveal that six scholars have authored four or more articles, with Wang Chunhui leading the way with eight articles, making him one of the significant scholars in language poverty alleviation research. Notably, Chunhui Wang rarely collaborates with other scholars, as most of his articles are solely credited to him. A total of 11 scholars have authored three or more articles, accounting for 15.7% of the total number of papers. These scholars constitute the core author group in language poverty alleviation research, laying a solid academic foundation for the field. Among them, Chunhui Wang, Yuming Li, and Ruihua Li stand out as highly productive authors in language poverty alleviation research over the past two years, pushing the research to new heights. Furthermore, the statistics



**Figure 2.** The mapping knowledge domains of authors in language poverty alleviation research (2018-2024).

indicate that 33 scholars have published two or more articles as first authors, contributing to 30.1% of the total paper count. This suggests a high concentration of authors in the field of language poverty alleviation research, with the core author group making significant contributions. A closer analysis reveals that the core author group has recently focused on key issues such as language life and services in rural areas (rural language ecology) (Fu, 2023; Zhang, 2023; Yang et al., 2018), the theoretical logic and practical path of language poverty alleviation supporting rural revitalization (Zhang & Liu, 2023; Li & Fu, 2022), and the exploration and utilization of linguistic landscape resources against the backdrop of rural revitalization (Xia et al., 2022; Li et al., 2023).

**Table 1.** Before the 20 authors and their institutes in language poverty alleviation research (2018-2024).

Number of publications	Author	Author's affiliation	Number of publications	Author	Author's affiliation
8	Chunhui Wang	Capital Normal University (Beijing)	3	Yan Zheng	Kashi University
7	Jinlin Liu	Guangxi Minzu University	2	Wei Li	Wuhan University
6	Jing Ma	Guangxi Minzu University	2	Yin Li	Chengdu Technological University
5	Yuming Li	Beijing Language and Culture University	2	Hailan Wang	Guangzhou University
4	Yibing Liu	Southwest University (Chongqing)	2	Lucong Wang	Guangxi Minzu University

## Continued

4	Min Du	Shaanxi Normal University	2	Jian Su	Shandong University
3	Yirong Fu	Nanjing University	2	Mengxiao Li	Chengdu Technological University
3	Zhihong Zhang	Shihezi University	2	Yichuan Yuan	Yunnan Normal University
3	Ruihua Li	Qinghai Normal University	2	Weiguo Shi	Heilongjiang University
3	Xiaoyun Li	China Agricultural University	2	Tong Wu	Southwest University (Chongqing)

### 3.3. Analysis of Issuing Institutes

Utilizing the CiteSpace software, a statistical analysis was conducted on the institutional affiliations of 312 published articles to gain insights into the research status and practical contributions of these institutions in the field of language poverty alleviation (Table 2). For a more intuitive representation of the institutional landscape, the analysis was limited to the affiliations of first authors. The data analysis reveals that language poverty alleviation research is primarily concentrated in universities, followed by research institutions, publishing houses, and relevant departments of governments at various levels. Nine institutions emerged with a frequency of five or more publications, all of which are universities. Among them, Minzu University of China and Yunnan Normal University lead the way with 13 and 12 articles, respectively. Beijing Language and Culture University, Guangxi Minzu University, Yili Normal University, and Capital Normal University (Beijing) follow closely. The number of articles published by institutions with five or more articles accounts for 71.4% of the total articles published by the top 20 institutions. This indicates a relatively concentrated distribution of research institutions in language poverty alleviation, with significant differences in research capabilities.

**Table 2.** Top 20 institutes in language poverty alleviation research (2018-2024).

No.	Number of publications	Name of the institution	No.	Number of publications	Name of the institution
1	13	Minzu University of China	11	4	Ministry of Education of China
2	12	Yunnan Normal University	12	4	Shaanxi Normal University
3	9	Beijing Language and Culture University	13	3	Shandong University
4	7	Guangxi Minzu University	14	3	Southwest University (Chongqing)
5	7	Yili Normal University	15	3	Peking University
6	7	Capital Normal University (Beijing)	16	3	North Minzu University
7	5	Kashi University	17	3	Yunnan Minzu University

**Continued**

8	5	University of Chinese Academy of Social Sciences	18	3	Xiamen University
9	5	East China Normal University	19	2	Guangxi Academy of Social Sciences
10	5	China Agricultural University	20	2	Xinjiang Normal University

From the perspective of secondary institutions (see **Appendix B** for details), research on language poverty alleviation is primarily concentrated in language or social science departments and education schools affiliated with normal universities and ethnic universities. These are followed by institutions dedicated to linguistic research within universities and other specialized linguistic research units. In terms of geographical distribution, institutions engaged in language poverty alleviation research are mainly clustered in Beijing and regions with dense minority populations. Additionally, some economically developed regions along the eastern coast also have a significant presence. This suggests that there may be a positive correlation between research capabilities in language poverty alleviation and the authority of local language policy decision-making, the number of ethnic minorities in the area, and the level of economic development. From the perspective of the collaboration network among publishing institutions (**Figure 3**), there exists a certain degree of cooperation among these institutions. The main collaboration networks include Guangxi Minzu University - Guangxi Academy of Social Sciences - University of Chinese Academy of Social Sciences, University of Chinese Academy of Social Sciences - Shandong University - Central University of Finance and Economics, and Minzu University of China - Beijing Language and Culture University - Ministry of Education of China. However, overall, the intensity of collaboration is relatively low. The formation of these collaborative institutional networks is primarily driven by the academic affiliations of the authors, with almost no interdisciplinary institutional collaborations.

### 3.4. Analysis of Keyword Knowledge Graphs

Keywords serve as indicators of the primary directions and core viewpoints of an article's content. Conducting a co-occurrence frequency and burst analysis on the keywords of relevant literature in the field of language poverty alleviation can visually present the research hotspots, trends, and knowledge structure within this domain. By importing the data from 312 articles into the CiteSpace software and utilizing its keyword path calculation method, we can calculate the co-occurrence frequency and centrality of the keywords and generate a knowledge map of these keywords. By setting the time span of the database to 2018-2024, with a one-year time slice, and using keywords as network nodes, a co-occurrence map of keywords in language poverty alleviation research was generated (**Figure 4**). The map includes 212 keyword nodes and 451 connections, with a density of 0.0202. The larger the node size (font size), the higher the

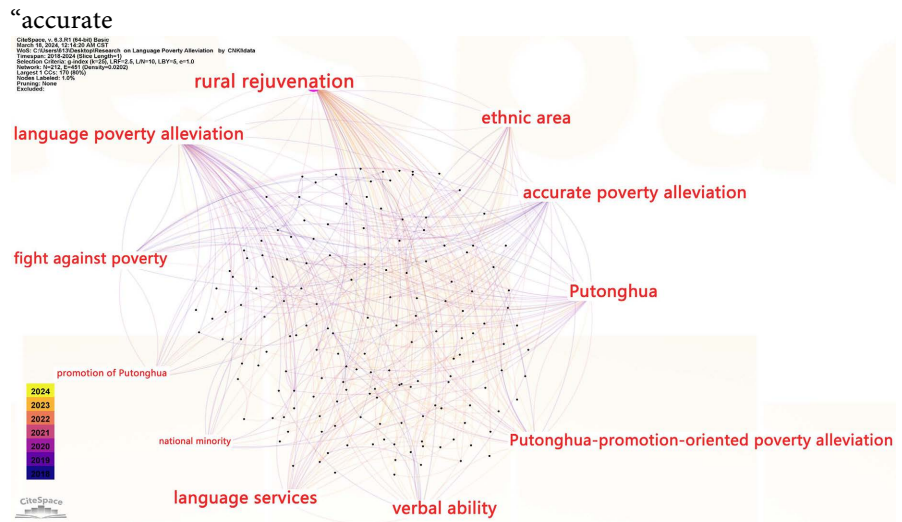
CiteSpace v. 5.3.R1 (64-bit) Basic  
 March 17, 2024, 11:38:53 PM CST  
 WOS: C:\Users\131\Desktop\Research on Language Poverty Alleviation by CNKIdata  
 Timespan: 2018-2024 (Slice Length=1)  
 Selection Criteria: g-index (k=25), LRF=2.5, L/N=10, LBγ=5, e=1.0  
 Network: N=139, e=55 (Density=0.0027)  
 Largest 1 CCs: 8 (5%)  
 Nodes Labeled: 1.0%  
 Pruning: None  
 Excluded:



**Figure 3.** The mapping knowledge domains of Institutions in language poverty alleviation research (2018-2024).

frequency of the keyword's appearance. The more connections between nodes indicate a higher number of co-occurrences between two keywords, reflecting a stronger association. Based on word frequency statistics, the top 20 important keywords were extracted and presented in **Table 3**. The results reveal that “rural rejuvenation” and “language poverty alleviation” are the two keywords with the highest frequencies. Following these are “accurate poverty alleviation,” “fight against poverty,” and “language services.” When considering the years of emergence for these high-frequency keywords, it is notable that “linguistic landscape,” “language life,” “language governance,” and “mutual enrichment” emerged relatively late and have become hot topics in recent language poverty alleviation research.

By comprehensively examining the first appearance year of high-frequency keywords and the annual volume of published articles, combined with the implementation of government policies in each year, the research on language poverty alleviation can be divided into two stages, allowing for a deeper analysis of the hot topics represented by the keywords in each stage. Overall, “rural rejuvenation” and “promotion of Putonghua” (Putonghua-promotion-oriented poverty alleviation) have consistently ranked among the top frequent keywords, serving as the core themes of research in this field. In terms of each stage, the period from 2018 to 2020 marked an exploratory stage against the backdrop of the poverty alleviation campaign. Keywords such as “fight against poverty,”



**Figure 4.** The co-appearance network of keywords in language poverty alleviation research (2018-2024).

poverty alleviation,” and “Putonghua-promotion-oriented poverty alleviation” emerged frequently. Firstly, this was due to the Chinese government’s strategic vision of eliminating absolute poverty and achieving a moderately prosperous society in all respects by 2020. Secondly, since November 2013, when Xi Jinping made the important directive of “seeking truth from facts, adapting measures to local conditions, providing classified guidance, and targeting poverty alleviation” during his visit to Xiangxi, Hunan, accurate poverty alleviation has become the guiding principle for China’s poverty alleviation efforts, which is also emphasized in the field of language poverty alleviation. China’s contribution to global poverty alleviation efforts includes its wisdom and solutions. Finally, poverty alleviation begins with intellectual development, and intellectual development starts with language proficiency. In China, Mandarin (Chinese) and Chinese characters are the national common language and script, and the promotion of Mandarin has always been a core component of China’s language poverty alleviation efforts. During this stage, research on language poverty alleviation primarily focused on discussions of the strategic adaptability, practical pathways, and value implications of language policies, with scholars from various fields such as linguistics and political science contributing to the expansion of the depth and breadth of research in this area. From 2021 onward, we have entered a stage of deepened research in the post-poverty alleviation era, with multiple disciplines beginning to engage in this field. Keywords such as “linguistic landscape,” “language life,” “language governance,” and “mutual enrichment” have emerged as hot topics for research during this stage. As China successfully won the battle against poverty in 2020 and entered a comprehensive phase of rural revitalization, language poverty alleviation, as an important aspect of China’s poverty alleviation achievements, has come into the focus of scholars from various fields. Scholars from different backgrounds have conducted in-depth research on top-

ics such as language governance, language landscapes, and rural language life in poverty-stricken areas, with notable contributions from scholars in economics, geography, and sociology.

**Table 3.** Top 20 keywords in language poverty alleviation research (2018-2024).

No.	Frequency	Keyword	Earliest year	No.	Frequency	Keyword	Earliest year
1	91	rural rejuvenation	2018	1	11	linguistic landscape	2021
2	56	language poverty alleviation	2018	2	10	language life	2022
3	23	accurate poverty alleviation	2018	3	7	language resource	2019
4	21	fight against poverty	2018	4	7	national minority	2019
5	21	language services	2019	5	6	language policy	2018
6	20	Putonghua	2018	6	6	language governance	2021
7	20	ethnic area	2018	7	6	language planning	2018
8	20	verbal ability	2018	8	6	language ecology	2018
9	18	Putonghua-promotion-oriented poverty alleviation	2019	9	6	poverty alleviation	2018
10	13	promotion of Putonghua	2018	10	5	mutual enrichment	2022

Additionally, the exploration of the frontiers and dynamics of language poverty alleviation research can be further facilitated through the application of burst term detection principles. Burst terms refer to key terminologies that experience a sudden increase in frequency of occurrence or a significant growth in usage within a short period of time. The burst strength of keywords can reflect the research areas that have had a significant impact within a certain time frame. By setting the  $\gamma$  [0, 1] attribute value to 0.5 and the Minimum Duration to 1 year in the hotspots function of the CiteSpace software, we updated and reviewed the data to obtain 19 burst terms related to language poverty alleviation research (Table 4). Among these, the top five burst terms, in terms of burst strength, are rural rejuvenation, accurate poverty alleviation, language life, language poverty alleviation, and linguistic landscape. From a chronological perspective, the burst terms from 2018 to 2020 include accurate poverty alleviation (poverty alleviation, targeting, strategies), language policy, language resource, language economy, and fight against poverty. After 2020, the burst terms shifted to trails, rural rejuvenation, mutual enrichment, language life, linguistic landscape, and language governance. The burst strength and timing of these keywords suggest that research on language poverty alleviation in China closely follows national policies and exhibits a clear policy orientation, which once again validates the argument made earlier that this research can be divided into two distinct stages. In terms of the duration of the impact of burst terms, “rural rejuvenation” has the longest duration (6 years), followed by “language planning” with 4 years. Most other burst terms have durations concentrated between 2 and 3 years. Although

the specific issues addressed show a degree of jumpiness, the development of rural areas and the language landscape in poverty-stricken regions has been a consistent theme throughout.

**Table 4.** Burst terms in language poverty alleviation research (2018-2024).

Keywords	Year	Strength	Begin	End	2018-2024
accurate poverty alleviation	2018	5.35	2018	2020	
poverty alleviation	2018	1.71	2018	2020	
language policy	2018	1.71	2018	2020	
language resource	2019	1.77	2019	2019	
accurate	2019	1.1	2019	2019	
strategy	2019	1.1	2019	2019	
language poverty alleviation	2018	2.81	2020	2020	
language economy	2020	1.93	2020	2020	
human capital	2020	1.66	2020	2021	
fight against poverty	2018	1.07	2020	2020	
Putonghua-promotion-oriented poverty alleviation	2019	1.53	2021	2021	
poverty alleviation through education	2019	1.5	2021	2021	
language planning	2018	1.4	2021	2022	
trails	2021	1.09	2021	2021	
rural rejuvenation	2018	10.46	2022	2024	
mutual enrichment	2022	1.32	2022	2024	
language life	2022	3.29	2023	2024	
linguistic landscape	2021	2.35	2023	2024	
language governance	2021	1.39	2023	2024	

#### 4. Discussion and Conclusions

Based on the academic papers related to language poverty alleviation included in CNKI from 2018 to 2024, and utilizing the information visualization software CiteSpace as a research tool, an analysis of the knowledge map structure of language poverty alleviation research in China was conducted. The research findings are as follows: Firstly, in terms of publication timing, the number of articles on language poverty alleviation in China did not increase year by year. Instead, they can be divided into two stages: the initial exploration during the poverty alleviation campaign led by targeted poverty reduction measures (before 2020), and the deepened research in the post-poverty alleviation era (after 2020). Secondly, regarding the authors, Chunhui Wang, Jinlin Liu, Jing Ma, Yuming Li, Yibing Liu, Min Du, Yirong Fu, and Zhihong Zhang are identified as the core authors in the field of language poverty alle-

viation research. In terms of collaboration networks, the research exhibits characteristics of small concentrations and large dispersions. Due to significant disciplinary differences, the strength of connections between different research teams is weak, indicating that most research is still conducted independently. Thirdly, in terms of institutions, language poverty alleviation research is primarily concentrated in universities, followed by research institutes, publishing houses, and relevant departments of governments at various levels. Among them, Minzu University of China and Yunnan Normal University rank at the top in terms of publication volume, followed by Beijing Language and Culture University, Guangxi Minzu University, Yili Normal University, and Capital Normal University (Beijing). The institutions involved in language poverty alleviation research are relatively concentrated. However, the strength of collaboration among these institutions is not significant, and the collaboration network is primarily driven by the academic affiliations of the authors. Lastly, from the perspective of the co-occurrence map of keywords, “language landscape,” “language life,” “language governance,” and “mutual enrichment” are emerging hot topics in recent language poverty alleviation research. Additionally, “rural revitalization” stands out as the keyword with the highest burst strength and the longest duration of influence, indicating that this theme has been a consistent focus throughout the research on language poverty alleviation.

It is worth noting that the CiteSpace analysis tool has threshold requirements for keyword co-occurrence rates and citation rates of documents, which may result in the exclusion of important recently published literature from the analysis. On the other hand, despite the advanced graph mapping capabilities of CiteSpace software, interpreting these graphs remains a challenging task prone to issues such as misinterpretation, overlooked information, and selective interpretation. These issues can potentially affect the accuracy of the result analysis to a certain extent. Therefore, future research utilizing the CiteSpace method should emphasize the normalization and rigor of graph interpretation to ensure accurate and reliable outcomes.

## 5. Implication and Recommendations

Overall, there is a paucity of research utilizing bibliometric tools to analyze specific topics in the field of linguistics. By selecting the area of language poverty alleviation research in China as a typical case, this study fills a gap in this academic domain. Meanwhile, as research on language poverty alleviation in China is still in its infancy, there is an urgent need to grasp its current research status and progress holistically. This study facilitates future researchers in understanding the latest research trends and hotspots in this field.

The findings of this study indicate that government policies and research foci play a significant guiding role in the direction of language poverty allevi-

ation efforts. Undoubtedly, the Chinese Government has made outstanding contributions in terms of policy leadership and institutional safeguards, but there are still problems in the area of language poverty alleviation, such as long cycles, large regional differences, imbalances in inputs and outputs, and imperfect monitoring and evaluation mechanisms. Here, we would like to make the following suggestions for China's language poverty alleviation work: Firstly, it is necessary to formulate a long-term language poverty alleviation plan, to ensure sustained investment in policies and resources, and to set clear language poverty alleviation goals and timetables in accordance with the specific conditions of impoverished regions and groups. Secondly, we should increase investment in language education in impoverished areas, build language education bases, train language teachers, develop language teaching materials and so on, so as to raise the level of local language education. Thirdly, it is important to give full play to the cross-regional and easy-to-share advantages of network information technology, to guide poor groups in using the "Language Poverty Alleviation App", and to increase the promotion and popularisation of the software. Finally, it is necessary to establish a mechanism for supervision, inspection, assessment and evaluation, and to conduct regular inspections and evaluations of language poverty alleviation work. Localities and individuals who have achieved remarkable results will be honored and rewarded, while those with problems will be urged to rectify them. With the continuous enhancement of China's international status and the deepening of rural revitalization efforts, the cause of language poverty alleviation in China will face new crises and development opportunities, posing new challenges and innovative spaces for research. In the future, we need to focus on the following aspects.

Firstly, it is crucial to strengthen theoretical innovation research in language poverty alleviation. Since 2018, research on language poverty alleviation in China has made significant progress, and practical efforts are being vigorously carried out in various poverty-stricken areas. However, on the whole, there are more case studies and insufficient corresponding theoretical summaries. Additionally, Chinese scholars' research has primarily focused on the impact of language on the economy and practical paths for language poverty alleviation, without paying sufficient attention to the inherent relationship and influence mechanism between language and poverty alleviation. Therefore, it is urgent to construct a relatively unified cognitive and theoretical framework.

Secondly, it is essential to enhance methodological innovation research in language poverty alleviation. Currently, qualitative and quantitative research are the two primary research methods in this field. Quantitative research often employs techniques such as GIS technology, statistical analysis, and mathematical modeling, while qualitative research is typically conducted through field investigations, archival research, in-depth interviews, and case studies. Nevertheless, on the whole, qualitative methods account for a relatively small proportion of lan-

guage poverty alleviation research, and there is a notable lack of innovative research that integrates multiple methods. This is not only a bottleneck that needs to be overcome in future research methods in this field but also one of the paths for deepening and expanding research. Given the continuous development of cutting-edge technologies such as artificial intelligence and big data, novel research ideas and methods derived from these emerging technologies are being extensively developed and utilized by scholars across various disciplines. It is certain that AI and big data will also have a profound impact on the progress of language poverty alleviation, which may be manifested in the following three aspects: firstly, AI can extract valuable information from the large amount of data collected in poverty-stricken areas, such as the distribution of the population, the state of the economy, the level of education, etc., by means of machine-learning algorithms and data-mining techniques. Secondly, AI technology can provide students in poor areas with customised language learning resources and paths according to their learning abilities and needs, helping them to improve their language skills more effectively. Finally, through the big data platform, data sharing and exchange can be realised among a number of departments and units, such as education, poverty alleviation, public security and medical care. This will help all parties to work together to promote progress in language poverty alleviation and ensure that poverty alleviation resources can be accurately channelled to where they are needed. Therefore, research and practical efforts in language poverty alleviation in China should keep up with the times, strengthening the learning and application of new technologies and methods.

Thirdly, it is imperative to strengthen cross-disciplinary, cross-regional, and cross-national cooperation and exchanges among scholars, disciplines, fields, and regions. On one hand, according to previous data analysis, it is evident that the intensity of academic cooperation among core authors and mainstream research institutions in the field of language poverty alleviation in China is generally low. Therefore, we need to explore diversified research perspectives, develop various horizontal and vertical cooperation mechanisms, and promote interdisciplinary and cross-field collaboration. This will broaden the scope of China's language poverty alleviation efforts and enhance the influence of this research field. On the other hand, poverty is a global challenge, and China, as the largest developing country in the world, has made remarkable achievements in the field of language poverty alleviation. The Chinese philosophy of "harmony is precious" and "universal brotherhood," as well as President Xi Jinping's vision of a "community with a shared future for mankind," urge us to strengthen academic and practical exchanges with other countries in the world. While absorbing advanced technologies and theoretical essences from developed countries, we also need to promote and collaborate on the wisdom of China's language poverty alleviation efforts in underdeveloped regions and among those in need. Our goal is to contribute Chinese strength to the global cause of poverty reduction. To

achieve this, we should establish platforms for international cooperation and exchanges, promote joint research projects, and facilitate the sharing of best practices and successful cases. By doing so, we can learn from each other's strengths, complement each other's weaknesses, and jointly explore innovative approaches to address the complex challenges of poverty alleviation through language. This international cooperation will not only benefit China but also contribute to global efforts to reduce poverty and promote sustainable development.

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## Conflicts of Interest

No potential conflict of interest was reported by the authors.

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## Appendix A

Literature Search Data Record Sheet for CNKI.

Total articles	Number of articles repeating the previous theme word	Number of new articles added	Valid or invalid (selected or not)	Academic Journals	PhD thesis	Academic Collection Publications	Featured Journals	sessions	newsprint	books	Subtotal	total	Figures shown for "Selected labels"	Actual increase in the number of active literature (removing overlap)
186	0	186	Valid or selected	131	21	2	10	0	0	0	164	186	164	164
			Invalid or unselected	1	1	1	2	15	2	0	22			
53	20	30	Valid or selected	34	3	0	2	0	0	0	39	53	183	19
			Invalid or unselected	4	2	0	1	4	3	0	14			
105	15	90	Valid or selected	17	4	0	1	0	0	0	22	105	190	7
			Invalid or unselected	13	63	1	0	4	1	1	83			
145	60	84	Valid or selected	65	17	2	9	0	0	0	93	145	223	33
			Invalid or unselected	14	0	0	19	18	1	0	52			
155	18	137	Valid or selected	88	9	5	5	0	0	0	107	155	312	89
			Invalid or unselected	22	21	0	2	2	1	0	48			
<b>Total number of documents retrieved 527</b>													<b>Number of valid documents 312</b>	

## Appendix B

Top 20 institutes in language poverty alleviation research (2018-2024)

No.	Institution	Second-tier institutions	Frequency	Aggregate
1	Minzu University of China	Chinese Academy of Minority Languages and Literatures	6	13
		college of education	4	
		College of International Education	3	
		Faculty of Foreign Languages	5	
2	Yunnan Normal University	Faculty of Education	3	12
		Department of Geography	2	
		Cadre Training Base of Southwest United University	1	
		Editorial Department of Journal	1	
3	Beijing Language and Culture University	Institute of Chinese International Education	4	9
		Academy of Language Sciences	2	
		High Precision Innovation Centre for Language Resources	1	
		Research Centre for Chinese Language and Writing Standards	1	
4	Guangxi Minzu University	China Institute of Language Policy and Standards	1	7
		School of Ethnology and Sociology	4	
		Guangxi Institute of Chinese National Community Consciousness	3	

## Continued

		College of Chinese Language and Literature	2	
		College of Educational Sciences	2	
5	Yili Normal University	College of Foreign Languages	1	7
		College of Network Security and Information Technology	1	
		Border Chinese Literature and History Research Centre	1	
6	Capital Normal University (Beijing)	School of International Cultures	4	7
		Language Governance Research Centre	3	
		School of Chinese Language	3	
7	Kashi University	Office of Scientific Research	1	5
		College of Humanities	1	
		School of Marxism	2	
8	University of Chinese Academy of Social Sciences	Institute of Ethnology and Anthropology	2	5
		Graduate School	1	
		College of International Chinese Language and Culture	2	
9	East China Normal University	Faculty of Education	1	5
		Institute of National Education Macro Policy	1	
		School of Marxism	1	
10	China Agricultural University	College of Humanities and Development	4	5
		National Institute of Rural Revitalisation	1	
11	Shaanxi Normal University	College of Liberal Arts	4	4
12	Ministry of Education of China	Institute of Language and Writing Application	4	4
13	Shandong University	Institute of Economic Research	3	3
14	Southwest University (Chongqing)	Southwest Ethnic Education and Psychology Research Centre	3	3
		Guanghua School of Management	1	
15	Peking University	Department of Social Sciences	1	3
		Institute for the Development of Impoverished Areas	1	
		College of Matriculation Education	1	
16	North Minzu University	College of Literature and Journalism and Communication	1	3
		College of Foreign Languages	1	
		Faculty of Education	1	
17	Yunnan Minzu University	College of Foreign Languages	1	3
		College of Ethnic Culture	1	
		Department of Anthropology and Ethnology	1	
18	Xiamen University	Kagan College College of Humanities and Communication	1	3
		College of Humanities	1	

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**Continued**

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19	Guangxi Academy of Social Sciences	Institute of Philosophy	1	2
		Office of Scientific Research	1	
20	Xinjiang Normal University	College of Chinese Language and Literature	2	2

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