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Utilizing Baidu Index to Explore the Spatiotemporal Characteristics of Public Concern towards Law of the People's Republic of China on the Standard Spoken and Written Chinese Language in China

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Abstract

Objective: This article seeks to explore the spatiotemporal patterns of public interest in the "Law on the Standard Spoken and Written Chinese Language". **Method:** Use Baidu Index as a research tool to collect and analyze netizens' attention data to the law from January 1, 2014, to December 31, 2023. **Results and Conclusion:** Temporally, the attention to this law has shown an upward trend from 2013 to 2023, with the highest interest occurring from September to December. "Mandarin," "law," and "Chinese characters" are the most popular related information among the public. Spatially, the geographical distribution of the law's attention group has generally spread from the eastern coastal and western frontier regions to the central and western regions, showing a spreading trend. Moreover, The ten-year geographical concentration index has evolved from dispersion to aggregation. In terms of demographic structure, males dominate. The age group with the most interest is netizens aged 40-49.

Keywords: Baidu Index; Law of the People's Republic of China on the Standard Spoken and Written Chinese Language; Online Attention Level

1. Introduction

It is put forward in The Yuelu Proclamation released by the United Nations (2018) that "Language is essential for people to communicate with one another, allowing them to share knowledge, ideas, beliefs, and traditions across generations. This capability is crucial for human survival, self-worth, happiness, development, and harmonious living." Language is the essential "breath" necessary for the survival of a nation; it is where its soul resides. Through a language, a human

group can coalesce into a nation. The characteristics of a nation are fully engraved only within its language (Humboldt,1993). At the beginning of the founding of New China, a nationwide survey of language and writing was conducted, identifying and determining 130 languages, most of which are used by ethnic minorities, and a few are minority languages used by the Han nationality, with some ethnic groups using two or more languages. For example, the Yao nationality uses multiple languages. Those who call themselves "Mian" use Mian language, those who call themselves "Bunu" use Bunu language, and those who call themselves "Lajia" use Lajia language. The father of modern linguistics, Saussure *et al.* (2022), believed: "The linguistic community can determine the social community." "In the issue of the national unity, the first thing we should ask about is language. Linguistic evidence is more important than any other evidence." Therefore, as a multi-ethnic country, China needs to promote the Standard Spoken and Written Chinese Language, popularizing Law on the Standard Spoken and Written Chinese Language. In the course of China's historical development, this spoken and written Chinese language were formed through the mutual influence and integration of various ethnic languages. For example, some Mongolian vocabulary has been passed down and has actually become part of Chinese characters and Mandarin, such as "Station," "Hutong," and "Posture." "Station" is a transliteration of the Mongolian word jam, which has the same meaning as the ancient Chinese "Post," and it is believed that jam comes from the Turkic language yam, which in turn originates from the Chinese "Post." The post stations in the Ming Dynasty are a combination of Chinese and Mongolian vocabulary. "Posture" is a transliteration of the Mongolian word baqshi, and baqshi originates from the Chinese "doctor." That is, this word, which is interpreted in modern Chinese as "martial arts stance," was borrowed from Chinese by Mongolian and then borrowed back by Chinese. "Hutong" is a transliteration of the Mongolian word quduq, originally meaning well. After the Mongols entered Dadu, they used quduq to refer to the streets and alleys of Dadu city, and the term has been used ever since. The language has significantly contributed to shaping and evolving the rich and unified framework of the Chinese nation. For example, Beijingers who speak a northern dialect cannot directly converse with Cantonese speakers from Guangzhou. But they use unified Chinese characters, which tightly connect the various regional dialects and form a community of shared Chinese character usage. This language and writing system allows people from all over China to transcend regional dialects and communicate directly, forming a community of shared language - the Modern Standard Chinese Mandarin community. The history of the Standard Spoken and Written Chinese Language policy has evolved through various phases, starting with the simplification of Chinese characters, advancing to the promotion of Mandarin, and culminating in the standardization of both language and script. In October 2020, Law of the People`s Republic of China on the Standard Spoken and Written Chinese Language (hereinafter referred to as "The Law") was promulgated, marking the entry of the Standard Spoken and Written Chinese Language policy into the period of legal construction. Article 4 of the "General Principles" (2020) of this law clearly stipulates: "Citizens have the right to learn and use the Standard Spoken and Written Chinese Language. The state provides conditions for citizens to learn and use the Standard Spoken and Written Chinese Language. Local people's governments at all levels and, along with their relevant departments, should take steps to promote the use of Mandarin and ensure the implementation of standardized Chinese characters." The law allows this language to have a more significant impact on social life and to enhance economic and cultural interactions among different ethnic groups and regions. Therefore, in the new historical period, it is our mission to re-examine and explore the profound historical implications and contemporary value of The Law, allowing its legal concepts to permeate the thoughts and actions of every citizen.

Baidu Index has been widely applied in scientific research and behavioral analysis across various fields. Leveraging its vast platform data, Baidu Index can not only analyze the search categories and popularity of keywords but also delve into users' information preferences, search demands, and keyword characteristics, thereby accurately reflecting the public's focal points and interest levels in specific hot topics. Previous studies have utilized Baidu Index to explore topics such as Knowledge Management (Tan *et al.*, 2022), Kidney Stones (Wang *et al.*, 2020), Influenza (He *et al.,* 2022), COVID-19 Pandemic (Zhu *et al.,* 2021), Lifelong Education (Tan *et al.*, 2024), Negative Emotions (Ding *et al.,* 2024), and many others. The paper on the topic of Law on the Standard Spoken and Written Chinese Language (Yao *et al.,* 2024) is discussed from the perspective of its policy development. This study also uses the Baidu Index as a tool, focusing on the spatiotemporal characteristics of public online interest in this law. By conducting an in-depth analysis of the Baidu Index, this study not only offers a new perspective on understanding the public's attention to the law but also paves a new path for analyzing public reactions to legal policies using big data technology.

2. Materials and Methods

This study uses "《Law of the People's Republic of China on the Standard Spoken and Written Chinese Language》" as a keyword to analyze its search index situation. The "search index" is derived from extensive Baidu search data, using

keywords as the basis for statistical analysis. It determines the search frequency and additional information using a weighted approach, presenting the weighted calculation value of each keyword as a curve graph. This article will first obtain the Baidu Index of 31 provinces (cities, districts) from January 1, 2014, to December 31, 2023, on a daily basis. It will process the data using EXCEL 2010, and after accumulation, obtain the search data for different years and months. The article analyzes the spatiotemporal trend of attention to the method from 2014 to 2023, the demand map for 2023-2024, and the distribution of the population in the last 7 days.

3. Results and Discussion

3.1 Temporal Differences in Internet Attention to Law on the Standard Spoken and Written Chinese Language

Figure 1 shows the online public attention to the law since 2014, overall demonstrating an upward trend. From 2016 to 2019, there was a significant increase in attention. This is partly due to the demands of the era. Due to the relatively weak innovation in language and script information technology and the capacity for social application, we need to implement the Internet+ Language and Script Service Project and the Research and Application Project on Key Technologies for Language and Script Informationization (Zhang and Xie, 2022). On the other hand, national planning plays a role. 2016 marked the beginning of the "13th Five-Year Plan," and in accordance with the deployment of the "13th Five-Year Plan for the Development of the standard spoken and written Chinese language Work," efforts were made to comprehensively advance the basic construction of language and script, strengthen application governance by law, and strive to build a harmonious linguistic life with diverse subjects. Therefore, the value of this law becomes increasingly evident with the advancement of the times and the implementation of national planning. In Figure 2 the main reason for the decline in 2020 was that the COVID-19 pandemic became the primary focus of attention, with the average attention to the pandemic reaching 6195. The online attention to this law increased in 2021. From the perspective of cultural identity, since language knowledge enables people to participate in the expression of cultural practices and beliefs, language and cultural identity are interrelated (Schroeder *et al.*, 2017). For example, the rise of national style and trend, cultural displays such as the Twenty-Four Solar Terms, the Yellow River, and Sending Feelings with a Willow Branch at the Beijing Winter Olympics; cultural variety shows like "Chinese Poetry Congress," "The Reader," and "National Treasures"; and red tourism to revolutionary museums, memorials, and historical sites have become people's travel choices. This reflects the enhancement of cultural confidence among Chinese people, prompting them to consciously inherit the language, and pay more attention to this law. From the perspective of educational policy, schools have been the fundamental front for language and script work. Over the long term, significant progress has been made in school language and script work, but there are still issues such as insufficient promotion of the Language from a higher standpoint and students' lack of language and script application abilities (Wan and An, 2022). To address various school language and script issues, teachers, students, and parents have paid more attention to the language, and they are also concerned about the impact of this law on language education (Verga and Kotz, 2013). From a social interaction standpoint, spoken language serves as the most prevalent means of human communication and is fundamentally a social activity. While fully respecting the freedom to use each other's dialects and local accents, people also actively implement policies related to the language£¬and consciously learn and use the Standard Spoken. Therefore, the attention to this law is increasing.

With the development of technology, personal computers and mobile phones have become indispensable tools in people's lives. The PC trend mentioned in this article refers to search behaviors conducted on personal computers, while the mobile trend refers to search behaviors on personal mobile devices. Both search trends are facilitated through search engines, such as Google, Baidu, etc. This article is based on the Baidu search engine. As shown in Figure 1, the search index on the PC side was higher than that on the mobile side before 2018. As shown in Figure 1, the search index on PC was higher than that on mobile devices before 2018. The PC platform can provide abundant information with detailed content display, and its exquisite graphics and text make the information more appealing. In 2018, the search index on PC tended to stabilize, and its overall attention was lower than that on mobile devices. The reason may be that the COVID-19 pandemic has affected people's lifestyles, with more people choosing to work remotely, leading to increased mobile usage. Additionally, as technology advances, mobile devices have become more convenient and better able to meet people's needs for searching linguistic and textual information. Therefore, the number of users has gradually increased. Looking at the overall index and mobile index changes, the overall index after 2018 is mainly related to the mobile index changes. This phenomenon is closely related to the high penetration and usage rates of smartphones. As smartphones continue to evolve in the future, the mobile search index is expected to far exceed that of PCs, making mobile the mainstream method of search. Therefore, continuously optimizing and improving the search experience on mobile
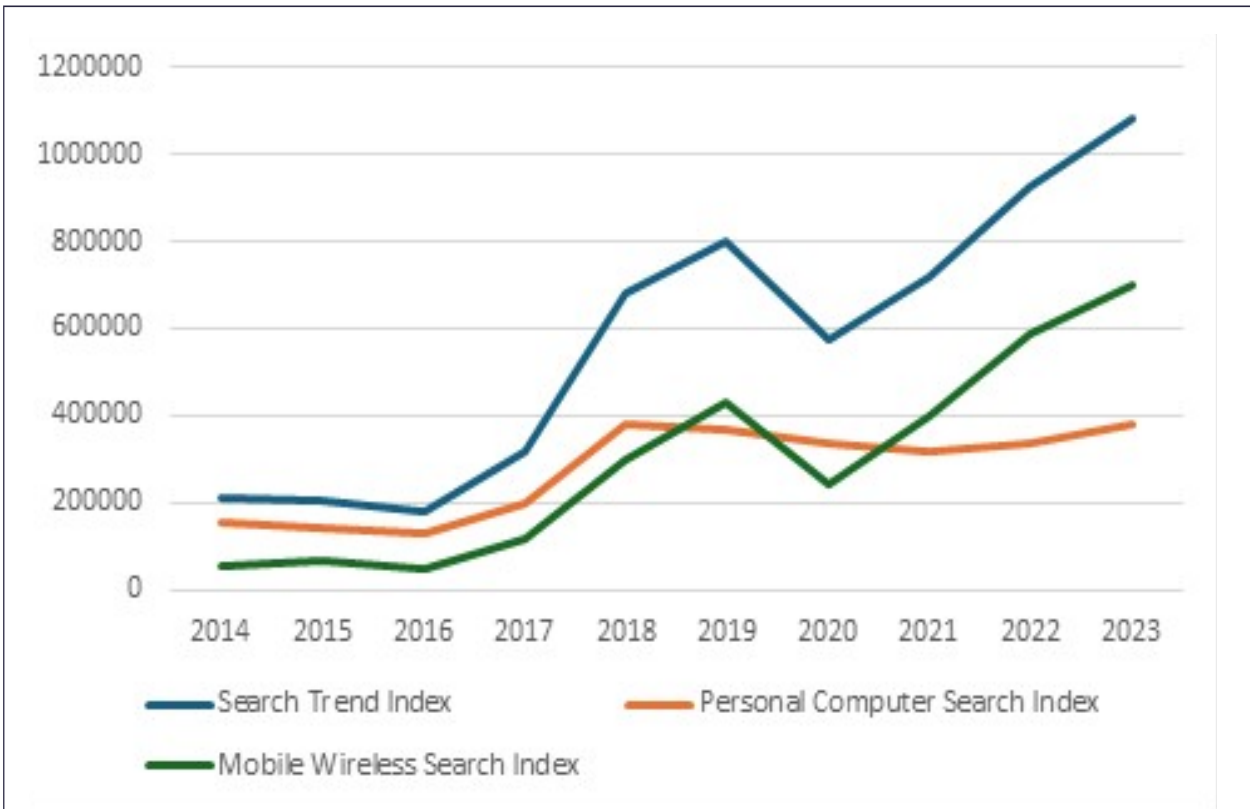
Figure 1: Changes in the Online Attention Index for Law on the Standard Spoken and Written Chinese Language
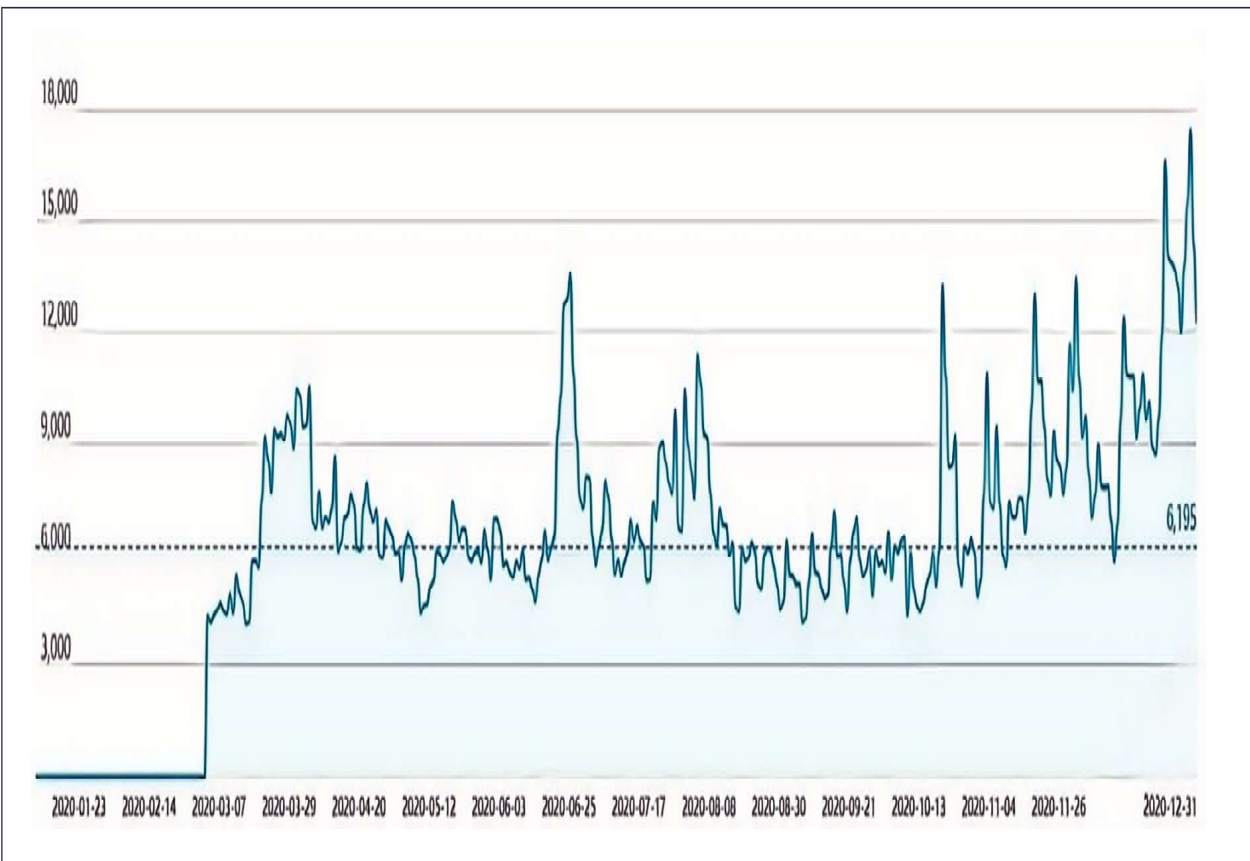

Figure 2: Internet Attention Index Chart for the COVID-19 Pandemic in 2020

devices, grasping the trends and patterns of mobile search, is an important way to enhance the competitiveness and influence of businesses or individuals. Overall, mobile communication methods have a broad development prospect and are worthy of attention and importance.

3.1.1. The Monthly Differences in Internet Attention to Law on the Standard Spoken and Written Chinese Language

From a monthly perspective, the law's online attention curve shows a wavy pattern (Figure 3). The attention is significantly higher in September-December than in March-June, with the lowest attention observed in January, February, July, and August. Among these, September sees the highest attention, followed by October and November. The aim of this law is to encourage the use and advancement of the language, allowing individuals to express their thoughts and opinions freely. Therefore, the attention and use of the language also enhance the attention to the law. The highest level of attention is in September. On one hand, it is the start of the academic year. At this time, schools often enhance the education and promotion of the language, to encourage students to use and pass on the language correctly. On the other hand, the National Mandarin Promotion Week is held in September. During this period, the government, schools, media, and social organizations join forces to organize various activities focused on the language, the harmony of language life, and the inheritance of excellent traditional culture. This emphasizes the importance of Mandarin in fostering national identity, enhancing exchanges and integration among different ethnic groups, and promoting economic and social progress. Then, October is the month when the entire nation celebrates the country's birthday. In discussing the national community, Feng (2018) identified five key components: a common language, shared territory, unified economy, collective spiritual homeland, and common political system. Citizens' attention to the language is closely related to their sense of national identity. In November, various schools hold Ethnic Culture Festivals, where the language play a crucial role. Using the language enables better understanding and learning of other ethnic cultures, facilitating communication and integration among different ethnic groups. During the summer and winter vacations, the attention to this law hits a low point. On one hand, people focus more on leisure, entertainment, and travel. On the other hand, other significant current events and topics occupy the public's attention. For instance, during the Spring Festival, people are more concerned with family reunions and traditional culture. The emergence of such hot topics may reduce the attention to this law. PCs generally have larger screens and more powerful processing capabilities, allowing users to conduct more complex, detailed searches. This period includes winter and summer vacations. Users have more complex search needs during this time, such as students and educators who may use PCs more for learning, research, and teaching preparation, leading to an increase in PC search volume.
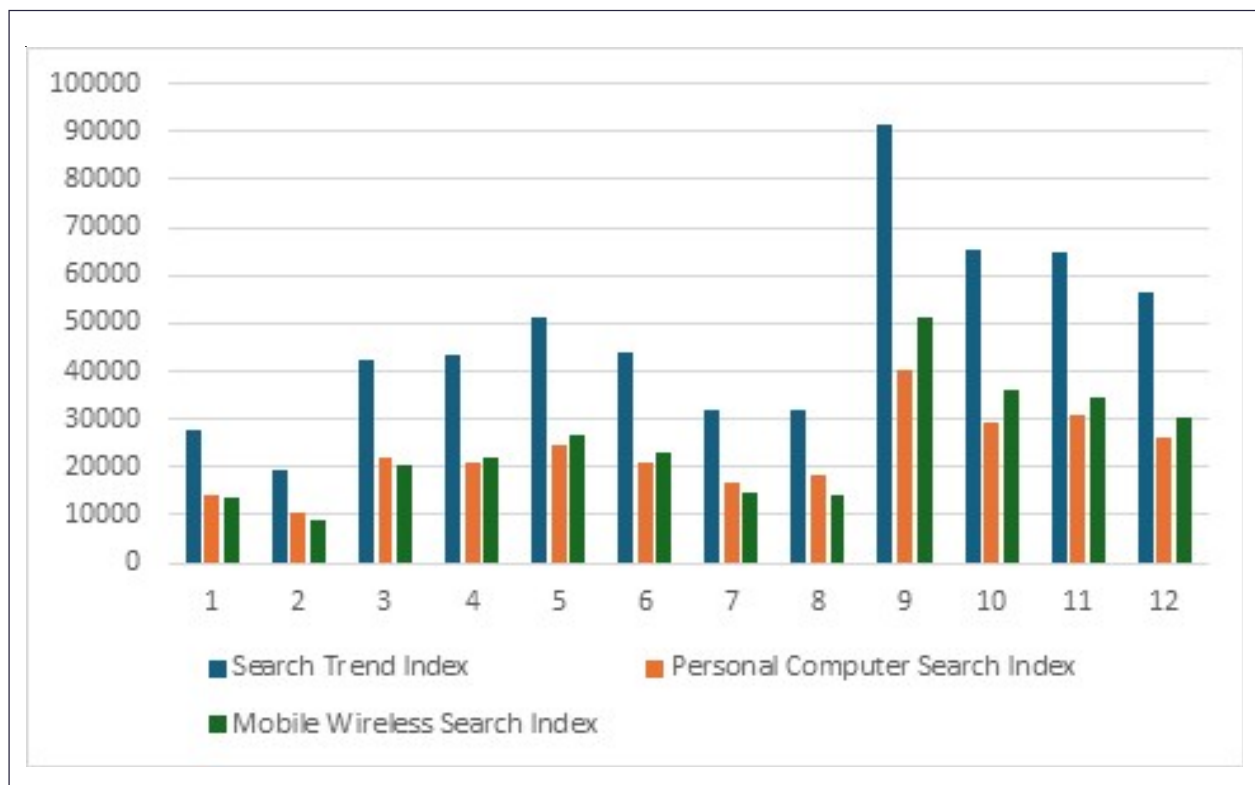

Figure 3: Average Monthly Internet Attention for Law on the Standard Spoken and Written Chinese Language from 2014 to 2023

3.1.2 The Online Attention to Keyword Searches Related to Law on the Standard Spoken and Written Chinese Language

This article uses the "Law on the Standard Spoken and Written Chinese Language" as a keyword to analyze the "Demand Graph" module indexed by Baidu. The research findings show that the top five keywords are respectively "Mandarin", "law", "Chinese characters", "intangible cultural heritage" and "the Chinese nation". Table 1 shows the average results for each keyword. In a longitudinal comparison, looking from 2014 to 2023, the overall attention to "Mandarin" has shown a gradual upward trend, with a 10-year average of 2289.6. The attention to "law" is on a downward trend, which may be due to the improvement of legal awareness among Chinese citizens, resulting in a decrease in direct searches for "law" as a keyword, with more specific laws being used as keywords instead. The attention to "Chinese characters" has remained basically unchanged. The search volume for "intangible cultural heritage" has been increasing year by year. Intangible cultural heritage represents the unique cultural characteristics of a nation or community, including performing arts, customs, celebrations, and other traditional knowledge and skills. It is an important component of their identity and social cohesion.

Table 1: Changes in Online Attention to Information Related to Law on the Standard Spoken and Written Chinese Language from 2014-2023					
Year	Mandarin	Law	Chinese Characters	Intangible Cultural Heritage	Chinese Nation
2014	1900	2167	1266	607	475
2015	1899	2721	1329	792	554
2016	1817	2069	1229	932	538
2017	1979	1793	1473	1087	674
2018	2182	1834	1320	1229	782
2019	2408	1787	1289	1252	708
2020	2188	1753	1435	1169	767
2021	2712	1869	1372	1269	764
2022	2364	1651	1334	1323	759
2023	3447	1838	1215	1287	668
Aerage	2289.6	1948.2	1326.2	1094.7	668.9

3.2 The Spatial Differences in Online Attention to Law on the Standard Spoken and Written Chinese Language

3.2.1 Regional Differences in the Internet Attention to Law on the Standard Spoken and Written Chinese Language

Divide according to the seven major geographical regions of China. From an overall evolutionary trend perspective, during the period from 2014 to 2023, there was a diffusion from the eastern and western regions towards the central part of China. Except for the North China and Northwest regions, the other regions maintained a generally similar trend in terms of internet attention. Before 2016, the online attention to this law in the northwest region was relatively low, but it rapidly increased afterwards, far exceeding other regions. The country is actively pursuing the "Belt and Road" initiative, which presents new opportunities for the development of the Northwest region. At the same moment, it increases the frequency of use of the language. The first is to build a trade platform that opens to the west. The national common language, as a tool for communication and exchange, can reduce communication barriers, ensuring that all parties can effectively conduct business negotiations, contract signings, and exchanges. For example, Trade ports need to handle various documents such as import and export contracts, customs declarations, and transportation documents. Using the language can ensure the accuracy and consistency of documents, reducing misunderstandings and disputes. Secondly, the construction of a cultural platform for opening to the west is essential. The language is essential for content creation and media operations on the cultural platform. Whether it's movies, music, literary works, or other media forms, using the language can better express and convey cultural connotations, making it easier for audiences

from various countries to understand and accept. Third, a training platform for opening up to the west was established. The language affects the social and adaptation abilities of international students. International students mastering the language can help them better integrate into Chinese society, enhancing their adaptability and cross-cultural communication abilities. Before 2020, the online attention to this law in the North China region was comparable to other regions, and it increased rapidly from 2020 to 2021. The North China region includes Beijing, Tianjin, Hebei Province, Shanxi Province, and Inner Mongolia Autonomous Region. Analyzing the shifts in provincial data, it becomes clear that the Inner Mongolia Autonomous Region played a significant role in influencing the changes in attention within the North China region. Inner Mongolia Autonomous Region is one of China's border areas. Compared to other regions, the promotion and dissemination of the language in these border minority areas are uneven and inadequate (Lang, 2020). This is the biggest shortcoming restricting the modernization of education in ethnic regions. Therefore, more attention was paid to the language in 2020. Firstly, promoting the language serves as a vital indicator of the modernization of national education and is an essential pathway to achieving this goal. Secondly, language, as a valuable asset, can significantly contribute to addressing educational disparities. This, in turn, can enhance employment opportunities and alleviate economic challenges, ultimately supporting the objective of revitalizing rural areas (Wang, 2018). Lastly, the language is closely related to national security. Ma and Sang (2022) believe that people of all ethnicities, through learning the law, can easily grasp the state's current political news, the country's international status, the challenges faced in national development, and the hidden dangers to national security without the need for translation. People of all ethnicities pay attention to the fate of the nation and consciously integrate themselves into the national polity and state system. In Figure 4, the Northeast region is overall lower than other regions. From a population standpoint, in 2020, Liaoning Province had a population of 42.59 million, a decrease of 1.155 million from ten years ago; Jilin Province had a population of 24.07 million, a decrease of 3.38 million from ten years ago; Heilongjiang Province had a population of 31.85 million, a decrease of 6.46 million from ten years ago. In terms of population structure, Liaoning Province is home to 10,954,467 individuals aged 60 and older, making up 25.72% of the total population. Among them, 7,417,481 people are aged 65 and above, which represents 17.42%. This data highlights a significant demographic decline. In Jilin Province, there are 5,551,165 individuals aged 60 and older, making up 23.06% of the population. Among them, 3,757,224 people are aged 65 and above, representing 15.61%. Heilongjiang Province had a total of 7,395,690 individuals aged 60 and older, representing 23.22% of the population. Among them, 4,972,868 were aged 65 and above, making up 15.61%. Both figures surpass the threshold for significant aging. Therefore, the level of attention to this law is also relatively low.
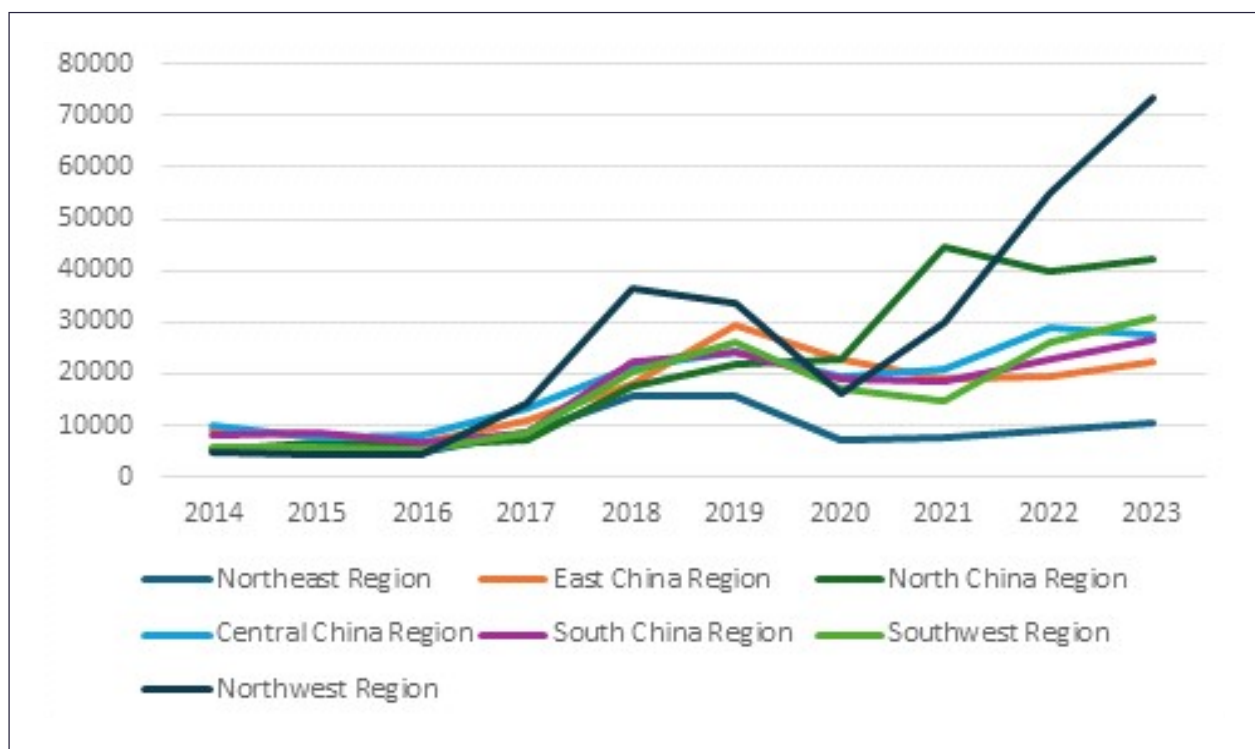

Figure 4: Trend of Internet Attention to Law on the Standard Spoken and Written Chinese Languageby Region, 2013-2023

3.2.2. Provincial Differences in the Online Attention to Law on the Standard Spoken and Written Chinese Language

Regarding provincial differences, we conducted statistical analysis on the annual average online attention of this law for the years 2016, 2018, and 2020. The study found that the online attention to this law showed significant spatial differences during the periods of 2016, 2020, and 2023. In Figure 5, areas with high online attention to this law in 2016 include Beijing, Henan, Guangdong, and Sichuan. In Figure 6, the online attention in 2018 was mainly concentrated in Xinjiang, with Guangdong following. In Figure 7, for the year 2020, the focus was mainly on Inner Mongolia, Xinjiang, Beijing, Guizhou,
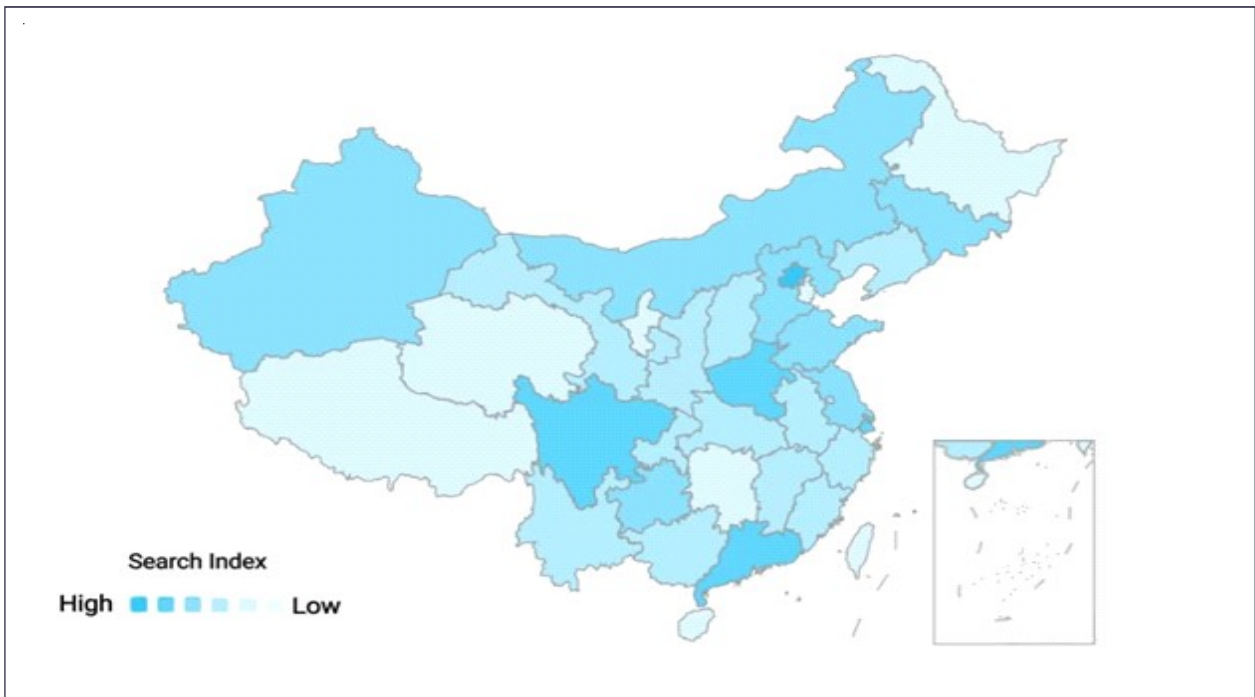

Figure 5: Distribution of Online Attention for Law on the Standard Spoken and Written Chinese Language in 2016

Figure 6: Distribution Map of Online Attention for Law on the Standard Spoken and Written Chinese Language in 2018
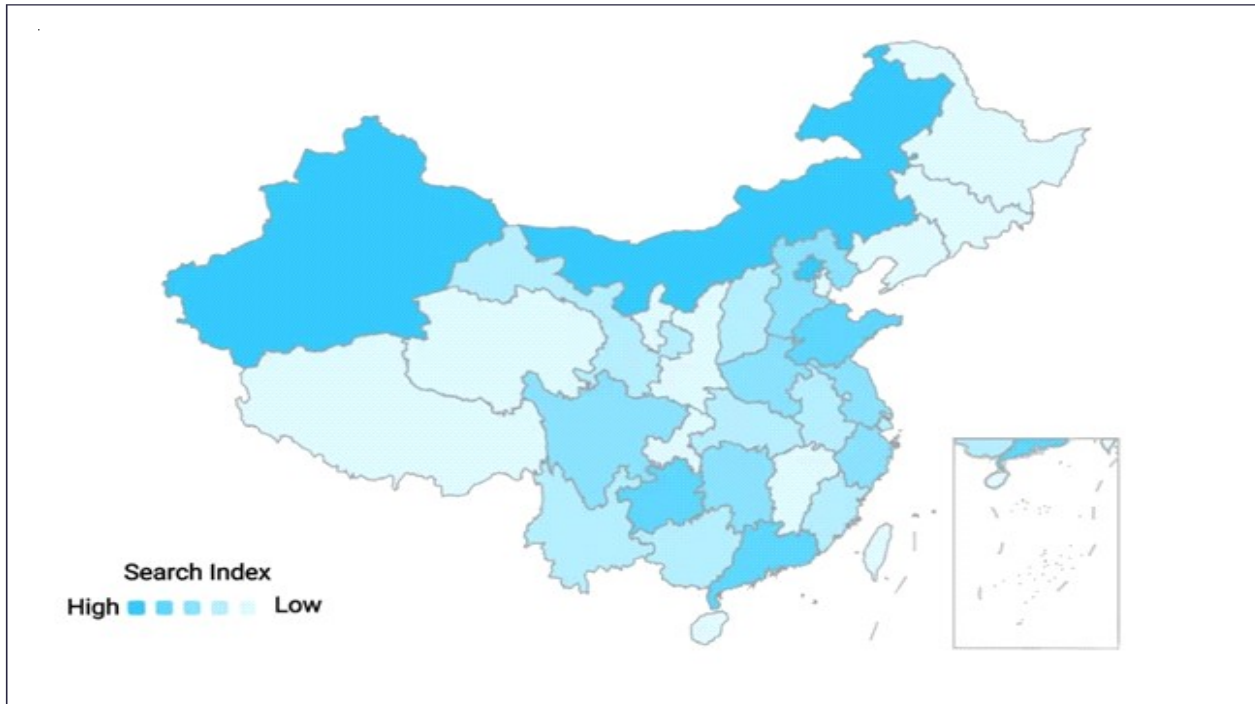
Figure 7: Distribution Map of Online Attention to Law on the Standard Spoken and Written Chinese Language in 2020

and Shandong. The online attention to this law in ethnic minority regions was higher in 2018 and 2020. On one hand, population mobility has brought about an intrinsic motivation and favorable conditions for language learning among ethnic minorities. According to the seventh national census data, Xinjiang had a migrant population of 8.051 million, including 3.39 million people moving across provinces and 4.66 million moving within the province, representing a 101.78% increase in migrant population compared to 2010 (Wang *et al.*, 2023). The improvement in the language has to some extent facilitated people's linguistic and cultural adaptation. As people integrate into communities, companies, and campuses, they extensively use the language for smooth communication with others. On the other hand, the ethnic minority groups have an urgent expectation for the use and mastery of the national common language. For instance, during street interviews, the owner of a naan shop expressed her hope that her children could meet the requirements for university admission through learning the language; similarly, a beauty salon owner believed that mastering the national common language would satisfy the needs of his business; and a primary school student reading books in a bookstore felt that reading books in the national common language enriched his knowledge. Through their actions, they have proven that the use and mastery of the language can further improve individuals' and families' economic income and living standards, reflecting their eager anticipation for a better life.

Table 2 lists the top ten cities during the period from 2014 to 2023. Among them, Urumqi, Hotan, Kashgar, Aksu, and Bayingolin are all cities within the Xinjiang Uyghur Autonomous Region; Hohhot is in the Inner Mongolia Autonomous Region, both of which are ethnic minority areas. One reason for this might be the numerous policies aimed at promoting the language in minority areas. For example, the Fifth Plenary Session of the 19th Central Committee of the Communist Party of China proposed "improving the quality and level of education in ethnic areas, and intensifying the promotion of the language"; and the Central Ethnic Work Conference emphasized the promotion and popularization of the language the scientific protection of the languages and scripts of all ethnicities, and respecting and safeguarding the learning and use of languages and scripts by ethnic minorities. The Central Conference on Ethnic Affairs, the Seventh Central Symposium on Work Related to Tibet, and the Third Central Symposium on Work Related to Xinjiang have all given important instructions regarding the work of promoting and popularizing languages and scripts in ethnic minority areas. They have 'emphasized that languages and scripts are important carriers of culture. The State Ethnic Affairs Commission of the People's Republic of China (2023) put forward that 'promoting and popularizing languages is a constitutional obligation. On the other hand, the public in ethnic minority areas, aiming to improve communication skills, expand educational and employment opportunities, promote social integration and shared cultural resources, as well as enhance political participation and democratic awareness, pay more attention to the language. For example, the active interest of the public in ethnic minority areas in the language can improve their ability to communicate and participate with government departments, better involve themselves in political decision-making and social affairs, and drive the

Table 2: Online Attention to Law on the Standard Spoken and Written Chinese Language in Cities of North China from 2014 to 2023

North China Region	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Beijing	8897	10150	9649	11368	17894	21565	23530	25171	24777	29346
Tianjin	1551	1609	1496	1083	7198	7798	2994	2923	2708	2922
Hebei Province	5896	8822	8758	8340	31202	41496	29095	30859	20451	22214
Shanxi Province	4848	5212	3700	8542	19478	24556	13458	15838	30213	27826
Inner Mongolia Autonomous Region	5734	8508	6982	6239	12592	12739	44786	148954	119875	127730

development and progress of their regions. The other cities among the top ten listed in Table 3 are Guangzhou and Hangzhou. The social and economic development levels of Guangzhou and Hangzhou are also among the top ten in the country. Language ability is an important human capital and the foundation for other skills. In cities with higher levels of socio-economic development, people pay more attention to learning and using the language in order to communicate with other regions and countries for business, expanding markets and business opportunities.

3.2.3 The Geographical Concentration Index of Internet Attention to Law on the Standard Spoken and Written Chinese Language

To gain a deeper insight into the recent changes in the geographical distribution of this law, we will perform a detailed analysis utilizing the Geographic Concentration Index. The Geographic Concentration Index (G) serves as a tool for assessing how concentrated the population is in their pursuit of online attention across different locations. This index helps to examine the spatial distribution patterns of online attention. The calculation formula is:

$$G = 100 \times \sqrt{\sum_{i=1}^{n} \left(\frac{x_i}{s} \right)^2}$$

Table 3: Top 10 Cities in Terms of Online Attention to Law on the Standard Spoken and Written Chinese Language

Number	Region	Attention
1	Urumqi	133427
2	Hotan	101040
3	Hohhot	82635
4	Kashgar	79104
5	Chengdu	63551
6	Aksu	61753
7	Guangzhou	59886
8	Ili	57725
9	Bayingolin	46561
10	Hangzhou	43655

In this study, the network attention of the ith province is denoted as X_i; the total network attention of the top 10 provinces each year is denoted as S; and n represents the total number of selected provinces. A smaller G value indicates

a more dispersed spatial distribution of network attention, while a larger G value indicates a more concentrated spatial distribution. We collected the daily average online attention values for the law in each province from 2014 to 2023, and calculated the proportion of online attention for each province according to the formula. Table 4 presents the geographical concentration index obtained from this calculation. The overall trend of the geographical concentration index for this law from 2014 to 2023 shows a development from dispersion to aggregation, with fluctuations occurring in 2019 and 2020, coinciding with the COVID-19 pandemic. This demonstrates that significant events have a notable impact on the spatial aggregation of network attention. After 2021, the geographical concentration index has been increasing annually. From the perspective of spatial distribution data, the network attention for this law is concentrated in two major areas: one is the economically developed and densely populated regions of China, represented by megacities such as Beijing, Shanghai, and Guangzhou; the other includes areas with a relatively large population of ethnic minorities, such as Urumqi, Hohhot, Hotan, and Kashgar.

Table 4: Geographic Concentration Index of Internet Attention to Law on the Standard Spoken and Written Chinese Language

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
G	33.14	33.21	32.66	35.36	40.53	34.8	32.23	41.87	42.08	44.71

3.3 The Demographic Structure of Internet Attention to Law on the Standard Spoken and Written Chinese Language

3.3.1 The Age Group of People Who Pay Attention to Law on the Standard Spoken and Written Chinese Language

By analyzing the "Crowd Portrait" module, we gain insights into the spatial sources of attention for this law. The Figure 8 shows that the two largest age groups among the concerned population are those aged 30-39 and 20-29, accounting for a total of 68.90%. The smallest proportion is the group aged 50 and above, with a percentage of 6.14%. The least attention comes from the group aged 50 and above, with a proportion of 6.14%. There are several reasons why the 20-39 age group pays more attention to the national language and script: First, employment competition. The Figure 9 shows that in our country's employed population, those under 30 account for 17.7%, the 30-39 age group accounts for 27.6%, the 40-49 age group for 25.1%, the 50-59 age group for 20.8%, and those aged 60 and above for 8.8%.
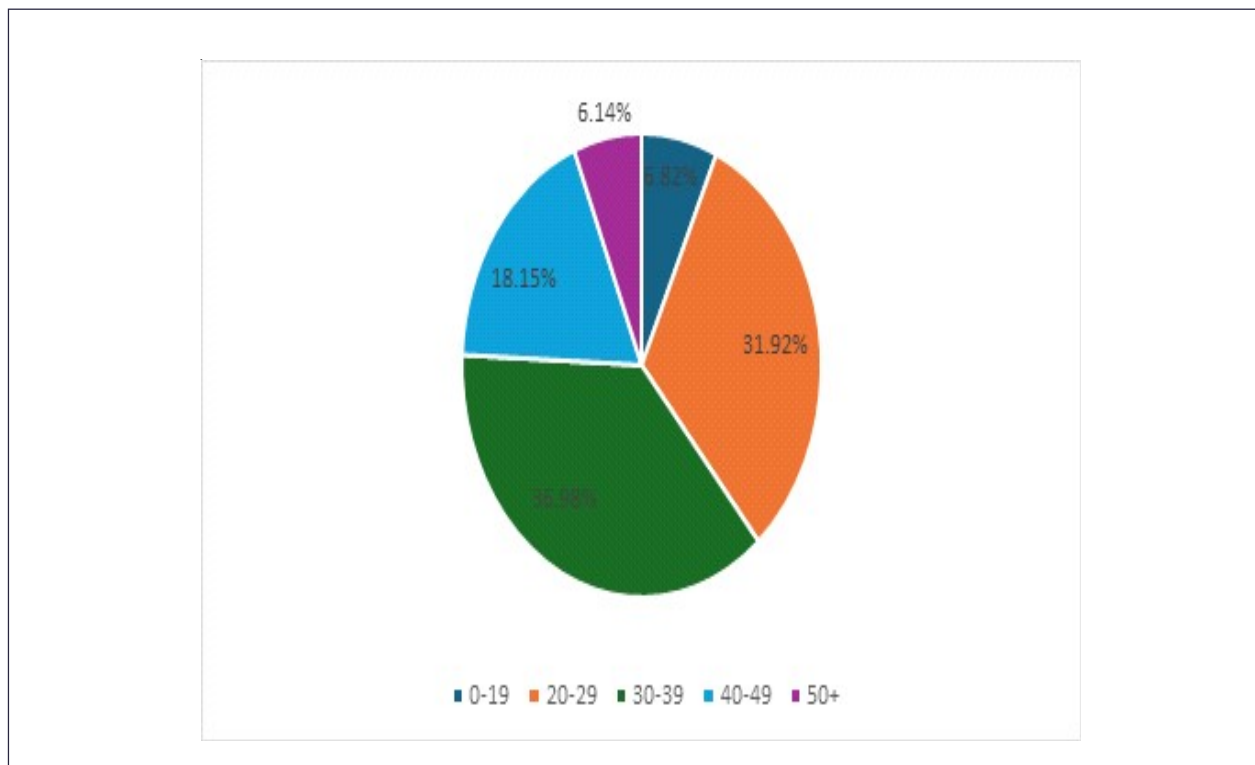

Figure 8: Age Distribution of the Audience Concerned with Law on the Standard Spoken and Written Chinese Language
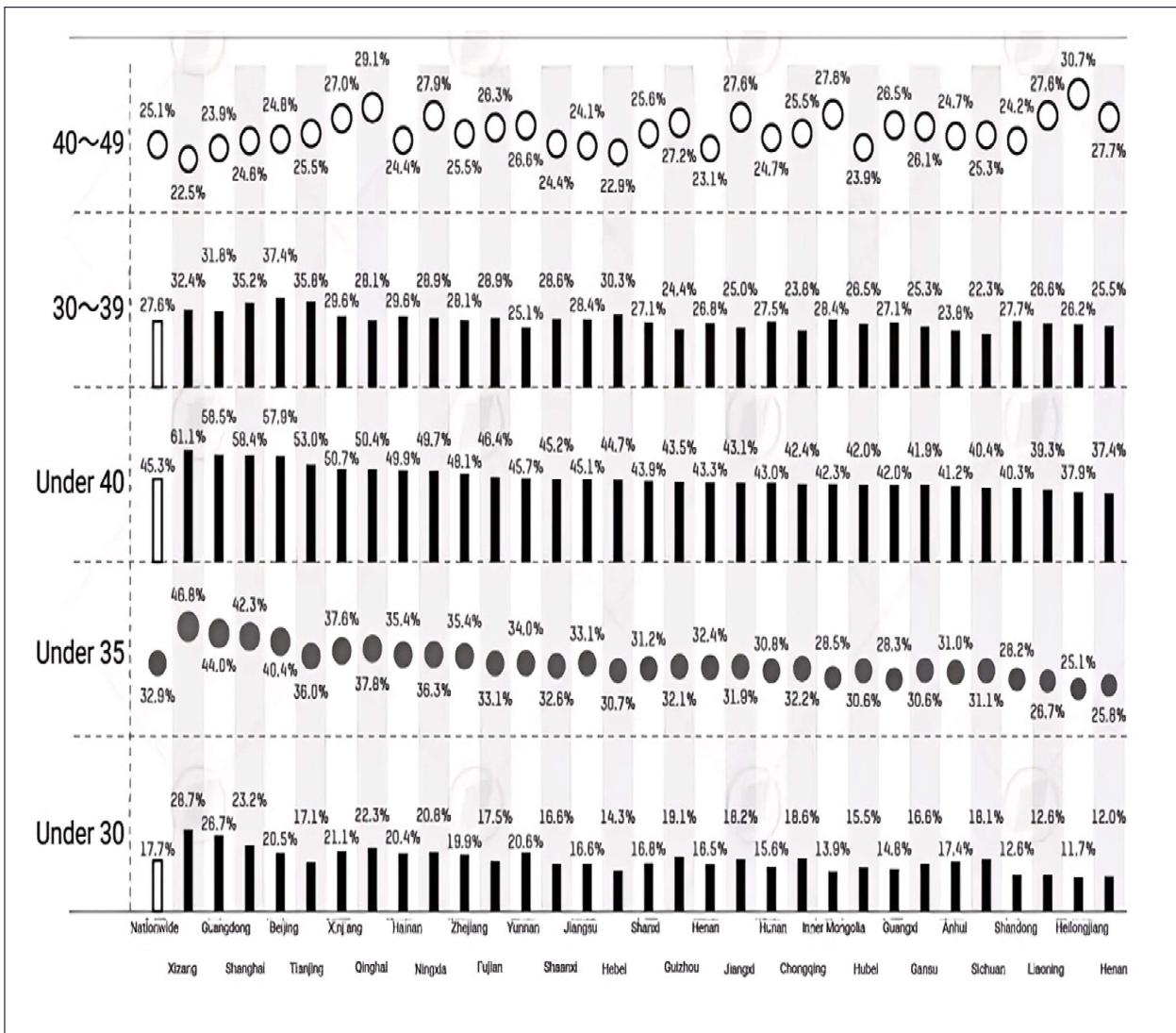
Figure 9: Employment Population Percentage by Age in Various Regions in 2020

Source: China Population and Housing Census (2020)

The 20-39 age group is usually at a critical stage of career development, and they realize that having good language and script abilities is crucial for job-seeking and career advancement. Second, the influence of social media. The 20-39 age group has grown up in the digital era, more familiar with and reliant on social media. The dissemination of information and expression of opinions on social media platforms need to comply with this law, hence they pay more attention to this law to avoid violations and inappropriate remarks. Third, educational background and learning needs. The 20-39 age group is usually in the stage of receiving education or continuously learning and improving their skills in the workplace. They need to master the correct language and script knowledge to better learn and express their views. Fourth, a sense of social responsibility. The 20-39 age group is in an active phase of life, starting to take on family and social responsibilities. They realize that complying with the law is an important way to maintain social order and public interest. Therefore, they use the language more and pay more attention to the national language law to ensure their learning and expression abilities meet the standards.

3.3.2 The Gender Demographics of Internet Attention to Law on the Standard Spoken and Written Chinese Language

By using the "crowd portrait" module to understand the spatial source of interest in the law, the statistical information on the online attention to the law reveals the gender distribution of the interested audience (Figure 10). Males account for 65.75%, while females account for 34.25%. Males show higher interest. This phenomenon may exist because traditionally, males are assigned more social responsibilities and roles. They may pay more attention to the law to ensure compliance with legal provisions and perform their social obligations. Therefore, they are more likely to be concerned with the law to ensure their own and others' legal rights are protected.
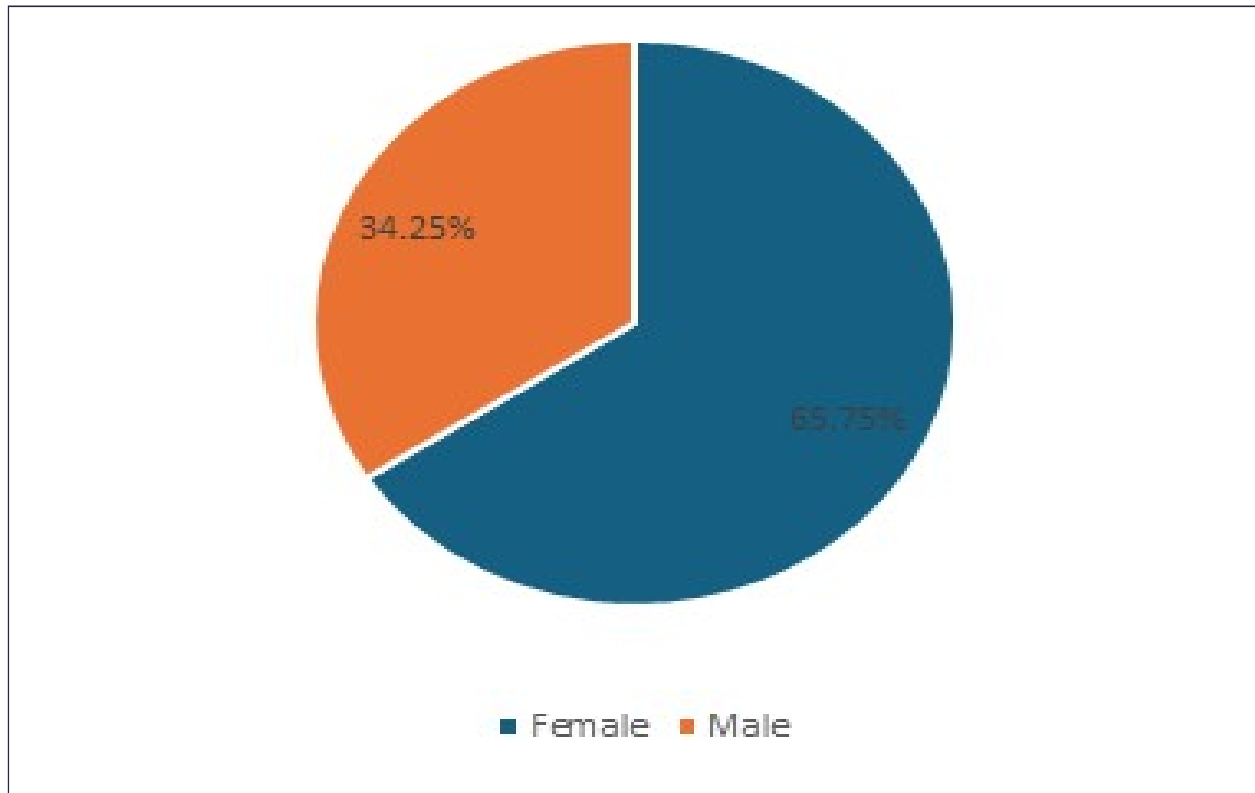
Figure 10: Gender Distribution of Online Attention to Law on the Standard Spoken and Written Chinese Language

4. Conclusion

1. Temporally, from 2014 to 2023, the overall attention to This law has shown an upward trend. Among these years, 2016-2019 witnessed an increased value of This law due to the progress of the era and the implementation of national planning. In 2020, the attention experienced a decline due to the COVID-19 pandemic. In 2021, with the enhancement of Chinese cultural confidence, the implementation of educational policies, and the increased demand for social interaction, the attention to this law continued to rise. The year 2018 was a pivotal point for changes in PC and mobile data. After 2018, due to changes in lifestyle and the convenience of mobile devices, mobile search indexes surpassed those of PCs. From September to December, the focus on this law was influenced by the start of the school year, Promotion Week, National Day, and Ethnic Culture Festival, leading to increased attention to language standardization, harmonious linguistic life, and the inheritance of language and script. During the winter and summer vacations in January, February, July, and August, people's attention shifts more towards leisure, entertainment, and travel, or is drawn to important hot topics such as the Spring Festival and traditional culture. However, during these vacations, teachers and students need to use PCs to complete more complex tasks, resulting in higher PC search volumes than mobile. In terms of popular search terms related to this law on the internet, "Mandarin," "law," and "Chinese characters" are the most popular among netizens, while "intangible cultural heritage" and "Chinese nation" are preferred terms related to moral education content.

2. Spatially, the online attention to this law among various provinces (cities, districts) shows a spatial mismatch distribution, characterized by a trend of increasing from the northwest and southeast towards the center. The implementation of the "Belt and Road" initiative, with the opening of trade, cultural, and educational platforms, has increased the frequency of use of the national common language in the northwest region. Between 2014 and 2023, the top ten cities included Guangzhou and Hangzhou, ranking seventh and tenth, respectively. Cities with higher levels of socio-economic development place more emphasis on learning and using the language to facilitate business communications with other regions and countries, thereby expanding market and business opportunities. Other cities are in minority autonomous regions. Minority areas have a higher demand for improving communication skills, expanding educational and employment opportunities, and maintaining national security. Population mobility aids in the adaptation of language and culture. The implementation of national policies also greatly promotes the rapid learning of the national common language. Therefore, the attention to this law has been enhanced. The Northeast region, due to severe population aging and loss, overall shows lower attention than other areas. From 2014 to 2023,

the geographic concentration index of online attention to this law overall shows a development process from dispersion to aggregation.

3. From the perspective of demographic profiles, due to employment competition, social media influence, educational background, learning needs, and a sense of social responsibility, the 20-39 age group pays more attention to this law. They make more use of the language and pay more attention to this law to ensure their learning and expression abilities meet standards. Additionally, men pay more attention to This law, which may be due to the need for attention in their professional fields; it may also be because men are traditionally assigned more social responsibilities and roles, requiring them to pay attention to legal protection for themselves and their families.

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