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# Use of the Baidu Index to Analyze Spatiotemporal Characteristics of Online Attention to Adult Education

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## Abstract

**Purpose:** This study aims to analyze the spatiotemporal evolution of public attention to "adult education" over the past decade. **Methods:** Using Baidu Index data from January 1, 2014, to November 1, 2024, we examined search trends, demand distribution, and user characteristics through trend research, demand mapping, and user profiling. **Results:** The online search index for adult education shows a fluctuating upward trend, with peaks in April and October each year. Demand mapping indicates interest in areas such as adult college entrance exams, self-study exams, educational institutions, exam schedules, registration, major selection, tuition, and application procedures. User profiling reveals higher attention from males aged 30~39 in Guangdong Province. **Conclusion:** Changes in online attention to adult education correlate closely with career aspirations, policy announcements, and social contexts.

**Keywords:** Baidu Index; adult education; online attention; spatiotemporal characteristics

## 1.Introduction

Adult education, also known as continuing education (Allmendinger et al., 2019), aims to enhance the cultural literacy and professional skills of working individuals (Zhu & Yao, 1993). It cultivates talent at various levels, from associate and bachelor's degrees (Guan, 1990) to even

higher academic levels (He, 2004). Characterized by flexible learning durations ranging from several weeks to several years (Gu, 1991), adult education is a crucial component of China's lifelong education system (Song, 2002). Internationally, adult education has long been an important focus of social policy (Jenkins, 1987), while Europe increasingly emphasizes the growing social importance of adult education and lifelong learning (European Commission, 2017; German Council of Economic Experts, 2017). With the rapid development of the knowledge economy and deepening globalization, the concept of lifelong learning has gained widespread acceptance. It plays a vital role in enhancing personal qualities and promoting social progress. Rooted in both education and career development (Allmendinger et al., 2019), adult education, as an integral part of lifelong learning, not only provides a broad platform for individual career advancement but is also increasingly recognized as a critical force driving societal progress and development (Cui, 2022).

Against this backdrop, the Chinese government has placed unprecedented emphasis on adult education, issuing a series of supportive policies, including the National Medium- and Long-Term Education Reform and Development Plan (2010–2020), aimed at further promoting its development. However, despite the abundance of research on adult education, most studies have focused on policy analysis and educational models. There remains a lack of in-depth understanding regarding public attention to adult education and its evolving trends, particularly in terms of systematic analyses of online attention.

In recent years, adult education has emerged as a hot topic in China. According to a report titled *Analysis of the Current Status and Future Development Trends of the Adult Education Industry (2024~2029)* published by China Research & Consulting Group: a leading Chinese institute that has provided consulting and planning services over 200,000 times to governments, enterprises, and investors—the scale of China's adult learning market reached 576.2 billion yuan in 2022. It is projected to grow to 1.04 trillion yuan by 2027, with an annual compound growth rate of 12.6%. This growth is primarily driven by intensified workplace competition, individual career development planning, increased societal demands for academic qualifications and skills, and the widespread acceptance of lifelong learning. The frequent appearance of "adult education" in online searches and discussions reflects its significance and growing attention in today's era. Against this backdrop, what are the specific areas of interest regarding adult education among internet users? What unique spatiotemporal characteristics do these interests exhibit? Due to insufficient existing literature and statistical data, there is a lack of systematic research on these questions within the academic community. Therefore, utilizing Baidu Index, a web big data tool, to study the spatiotemporal characteristics of online attention

to "adult education" offers a new perspective on real demand and points of interest. This approach provides valuable research opportunities, shedding light on the true needs and focal points of adult education.

Big data has become the next frontier for innovation, competition, and productivity, marking the world's entry into the "big data era" (Manyika, 2011; Zikopoulos, 2011). The United Nations' report *Big Data for Development: Challenges & Opportunities* posits that "the emergence of big data will have profound impacts on all sectors of society" (Du et al., 2016). This assertion is indeed accurate. Today, the amount of data transmitted over the internet each second exceeds the total volume of data stored on the entire internet two decades ago (McAfee, 2012). The transformative power of big data has permeated various aspects of human life, including economics, politics, healthcare, and education (Zhang & Zhao, 2016), with people deriving value and insights through the analysis of vast datasets (Fosso, 2015). In the realm of education, big data also demonstrates immense potential and an irreversible trend (Sun & Zheng, 2016). It can assist educational administrators and policymakers in gaining a deeper understanding of actual educational conditions (Viktor, 2015), thereby enhancing decision-making processes and improving educational outcomes.

Specifically, the internet has transformed everything (Carruthers, 2020), making online searches the primary means for the public to access information and knowledge. Search engines have become the most trusted global sources of information (Edelman Trust Barometer, 2021). For instance, the average user visits Google.com 18.15 times daily (Alexa, 2021). In response to this trend, China's State Council issued the *Guiding Opinions on Actively Promoting the "Internet+" Action* (State Council, 2015) to foster the development of internet-based educational services. This initiative accelerated the transformation of information technology in education, impacting higher education, adult education, vocational training, and primary education. Subsequently, the *Action Plan for Promoting the Development of Big Data* (State Council, 2015) proposed the construction of educational big data (Yang et al., 2016), making online search behavior a crucial reference for formulating and adjusting adult education strategies.

Currently, China's online trend analysis primarily relies on Baidu Index, a data-sharing platform launched by Baidu in 2006 based on its extensive user behavior data. From 2011 to 2020, Baidu maintained its dominance in China's search engine market (Huang et al., 2021), and the core functionalities of Baidu Index encompass trend tracking, demand distribution, and user profiling. The platform updates daily with search data from both Personal Computer and mobile endpoints, accurately capturing online search trends and revealing public information-

seeking interests and patterns. As a research tool, Baidu Index has been widely applied across multiple disciplines: in the medical field, it has explored preventive measures for chickenpox (Zhang et al., 2024) and influenza detection (Dai & Han, 2023); in tourism, it has analyzed regional tourism development and marketing effectiveness (Yang et al., 2024); in finance and economics, it has measured indicators of economic uncertainty in China (Shu et al., 2024) and analyzed the impact of investor attention on stock markets (Bai et al., 2023); in education, it has investigated moral education (Zhao et al., 2024) and explored pathways for integrating big data into ideological and political education (Li, 2024); additionally, it has examined legal online attention regarding standardized Mandarin speech and writing (Yao & Chang, 2024), as well as studies on public attention to China's policies and activities along the China-Myanmar border (Tan et al., 2024). This study aims to systematically analyze the attention paid to "adult education" by the Chinese public over the past decade using Baidu Index, revealing the spatiotemporal characteristics and underlying factors influencing the changes in online attention to adult education.

## 2. Material and Methods

This study utilizes the Baidu Index platform to conduct an in-depth analysis of the spatiotemporal characteristics of online attention to "adult education." The China Internet Network Information Center (CNNIC), responsible for managing national internet operations and security, released its 54th *Statistical Report on the Development of China's Internet* (CNNIC, 2024). The report indicates that as of June 2024, China has 1.09967 billion internet users, with an internet penetration rate of 78.0%. Among these, 841 million users, or 78.0%, are search engine users, underscoring the critical role of the internet and mobile searches as the preferred channels for information acquisition. Moreover, Baidu and Google collectively hold over 80% of the search market share, highlighting their significant influence. Given Baidu's leading position in the Chinese market, this study selects Baidu Index (<https://index.baidu.com/v2/index.html>) as the data source, aiming to provide robust data support and insights into the spatiotemporal features of the "adult education" field.

Baidu Index offers several key functional modules, including trend research (comprising overall trends, PC trends, and mobile trends), demand mapping, and demographic profiling. For this study, we set the time span to cover nearly a decade, from January 1, 2014, to November 1, 2024, to better illustrate the historical evolution of online attention to adult education. We used "adult education" as the core keyword to ensure data consistency, comprehensiveness, and accuracy. Leveraging Baidu Index's features such as geographic distribution and temporal

trends, we conducted a systematic analysis of the geographical differences, seasonal fluctuations, and long-term development trends in online attention to adult education.

### 3.Results

On the Baidu Index platform, we can fully leverage the Target Group Index (TGI) to gain insights into internet users' search attention to specific keywords and track their ongoing changes. The TGI, or Target Group Index, reflects the strength or weakness of a target group within a specific research scope, such as geographic regions, demographic segments, media audiences, or product consumers. It is calculated using the formula:  $TGI = 100 \times (\text{the proportion of a characteristic in the target group} / \text{the proportion of that characteristic in the overall population})$ . A higher TGI indicates more frequent searches for the keyword by internet users, signaling greater public interest in the underlying topic or subject. By monitoring the search index, we can not only accurately reveal the trending patterns of keywords but also precisely reflect the scope and changes in user interests.

#### 3.1 Search trend research

Analyzing the Baidu Search Index for the keyword "adult education" (Figure 1) from January 1, 2014, to November 1, 2024, reveals a pattern of significant fluctuations in online attention over the decade. The search index experienced multiple notable peaks and troughs. Annually, the peak positions follow a certain regularity, particularly evident in the pronounced peaks in 2015 and 2019. Specifically, the search index reached its highs on August 25, 2014 (Point B), and April 26, 2019 (Point E), indicating heightened attention to adult education during these periods. Between 2013 and 2015, the search index exhibited substantial volatility; however, from 2015 to 2019, the fluctuations decreased, with the highest peak occurring on April 26, 2019 (Point E). After 2019, the volatility decreased again, but the overall trend remained high, showing that the topic of adult education continued to receive attention.

Simultaneously, a comparative analysis of the Baidu Search Index for the keyword "adult education" from April 6, 2013, to November 29, 2024, across PC (Figure 3) and mobile platforms (Figure 2) reveals distinct annual fluctuation trends. Around 2015, both platforms experienced significant growth, particularly in the period around August 25. However, on April 26, 2019, the mobile search index reached an unprecedented peak, while the increase on PC was relatively modest. This reflects the growing preference for smartphones as information sources, driven by advancements in mobile internet technology and the widespread adoption of smartphones, including for accessing adult education resources. After 2019, although overall

attention decreased, the mobile search index remained at a high level, whereas the PC search index dropped significantly. This further underscores that mobile devices have become indispensable tools for information retrieval, especially within the realm of adult education.

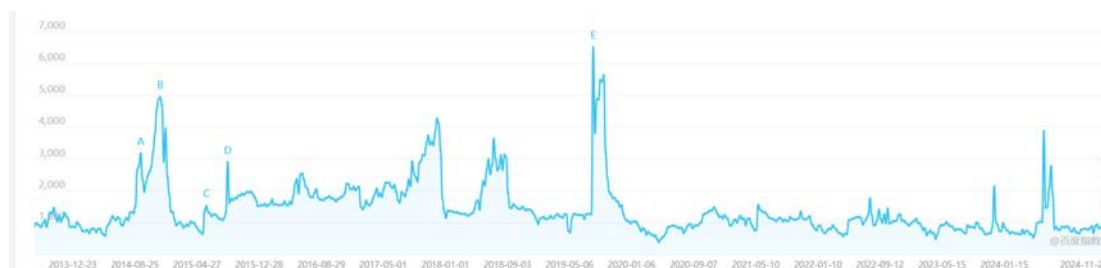


Figure 1. Baidu search index of China's "adult education" PC+ mobile two ports (Date:2014.01.01-2024.11.01)

Source: authors' own research through Baidu Index



Figure 2. Baidu search index of China's "adult education" mobile port (Date:2014.01.01-2024.11.01)

Source: authors' own research through Baidu Index

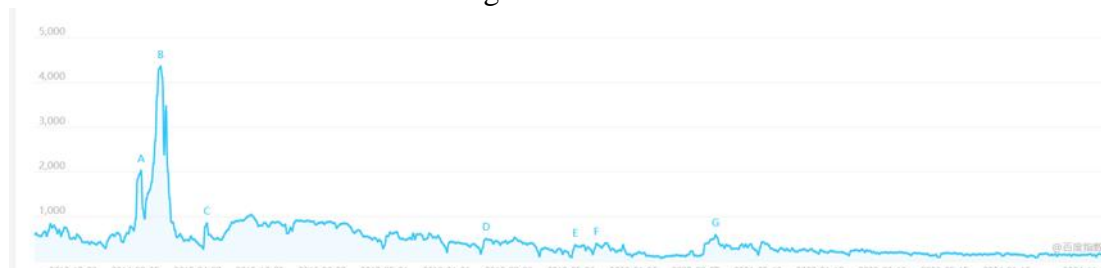


Figure 3. Baidu search index of PC ports for "adult education" in China (Date:2014.01.01-2024.11.01)

Source: authors' own research through Baidu Index

### 3.2 Regional distribution characteristics

Regarding the geographical distribution of online attention to adult education (Figure 4), the map uses varying shades of blue to indicate the search volume across different provinces, where the depth of blue shows a significant positive correlation with the level of attention. Specifically, deeper shades of blue signify higher interest in adult education within those provinces.

Analysis reveals that the map regions for Guangdong, Henan, Jiangsu, and Zhejiang provinces are marked with deeper shades of blue, indicating leading search volumes for "adult

education" nationwide (Table 1). Among the top 10 cities, demand is particularly robust in economically developed provinces and regions. Guangdong tops the list, reflecting its residents' high attention to skill and knowledge enhancement; closely followed by Henan, Zhejiang, and Jiangsu, where large populations and rapidly developing economies drive a continuous need for high-quality labor. Shandong ranks fifth, highlighting the region's emphasis on adult education resources. Sichuan and Beijing also make it into the top ten, indicating that central-western areas and municipalities directly under the Central Government equally prioritize adult education. Hebei, Anhui, and Shanghai occupy the eighth to tenth positions, demonstrating that both coastal and inland cities have significant numbers of adults seeking to improve their personal qualities and professional competitiveness through continued education. These cities boast abundant educational resources and large bases of migrant workers, making them key hotspots for adult education. Overall, the charts reveal significant differences in attention and demand for adult education across different regions, reflecting an increasing societal recognition of lifelong learning.

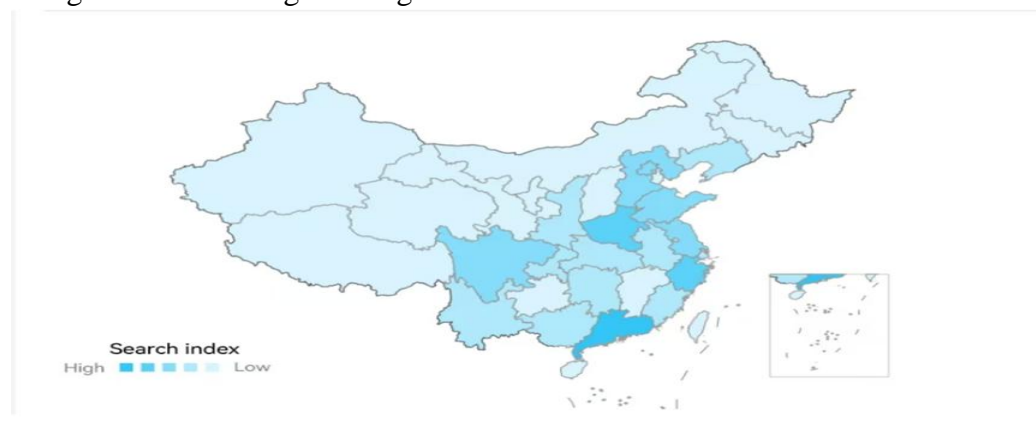


Figure 4. Geographical distribution of the index "Adult Education"  
(Date:2014.01.01-2024.11.01)

Source: authors' own research through Baidu Index

Rank	Province	Search index
1	Guangdong	1000
2	Henan	697
3	Zhejiang	602
4	Jiangsu	537
5	Shandong	533
6	Sichuan	525
7	Beijing	452
8	Hebei	414
9	Anhui	343
10	Shanghai	310

Table 1. Top 10 provinces in terms of "Adult education" search attention

Source: authors' own research through Baidu Index

### 3.3 Gender and age distribution characteristics

The demographic analysis feature in Baidu Index utilizes Baidu users' search data and employs data mining techniques to categorize the characteristics of user groups related to specific keywords, revealing the distribution of demographic features such as age and gender.

Observational studies on online information search behavior have found that categorizing data by gender is notably necessary (Urman & Makhortykh, 2023). According to the 54th *Statistical Report on the Development of China's Internet* by CNNIC (2024), the gender ratio among Chinese internet users is 50.8% male and 49.2% female, showing a relatively small disparity. However, when it comes to the search behavior for the keyword "adult education," there are distinct differences between genders (Figure 5a). Males account for 58.97% of searches, while females make up 41.03%. The Target Group Index (TGI) for males is 114.52, compared to 84.59 for females, indicating that males exhibit approximately 29.93 percentage points higher attention. Therefore, in the field of adult education, males show significantly greater interest and participation.

Examining the attention to "adult education" across different age groups (Figure 5b), the highest proportion is found among those aged 30~39, at 32.14%, followed by the 20~29 age group at 27.03%. The 19 and under group accounts for 9.65%, while those aged 40~49 make up 20.5%, and individuals aged 50 and above constitute 10.68%. However, when considering the Target Group Index (TGI) values, the situation reverses: the TGI for the 20~29 age group is the highest at 133.04, indicating particularly strong interest in adult education within this demographic. The TGI for those 19 and under is also relatively high at 93.54. In contrast, the TGI for individuals aged 50 and above is only 68.42, reflecting lower levels of attention. This highlights the enthusiasm for self-improvement and continued learning among young and middle-aged adults, especially younger individuals, while also revealing a trend of decreasing demand for adult education resources as age increases.



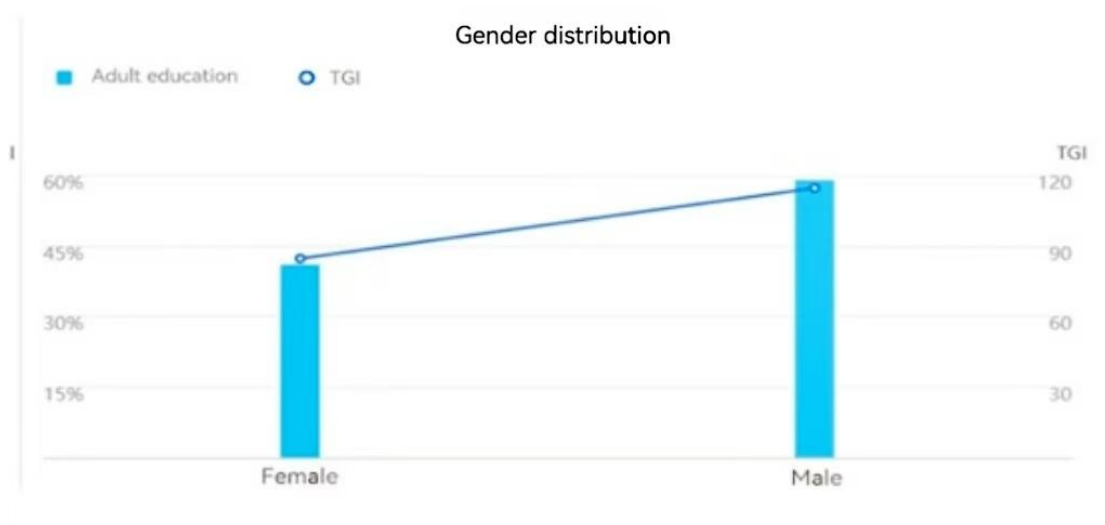


Figure 5(a) Gender

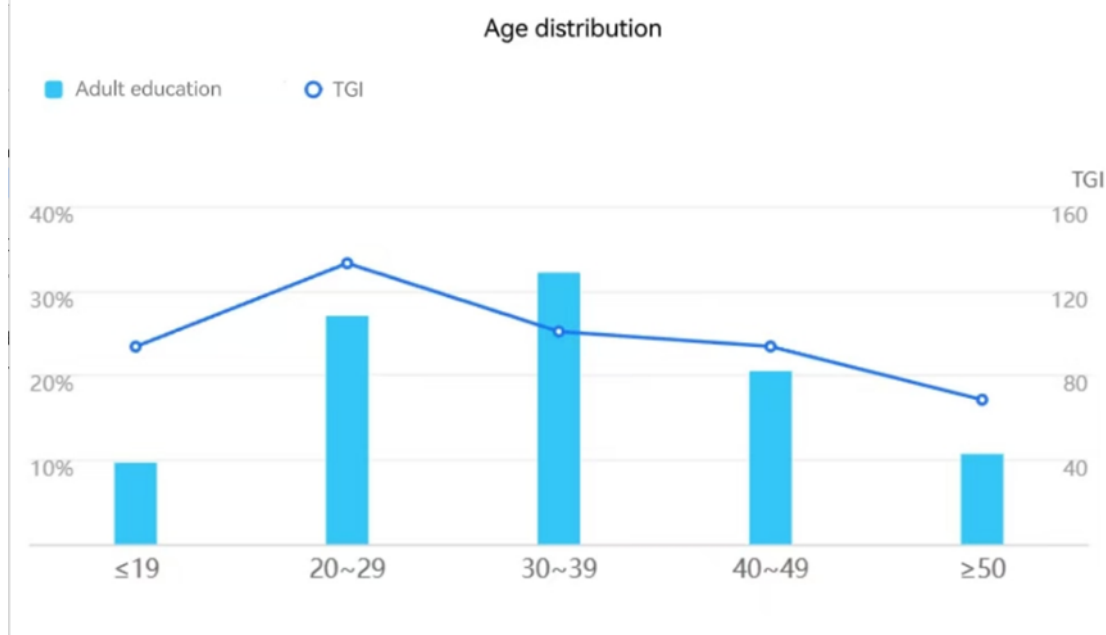


Figure 5(b) Age

Figure 5. Demographic profile for searching "adult education"  
(Date: 2014.01.01-2024.11.01)

Source: authors' own research through Baidu Index

### 3.4 Demand Mapping

The demand map illustrates changes in related search terms before and after users search for "adult education," reflecting their patterns of need-based search behavior. This map provides an in-depth analysis of multiple dimensions, including the hierarchy of user needs, preferences, and the relationships between different needs. Summarizing the changes in the demand map from November 27, 2023, to November 24, 2024, we ranked the popular search terms related

to "adult education." It was found that Baidu users showed the highest attention to "adult college entrance exam," followed by "adult self-study examination." Additionally, "adult education college" and "adult education school" received significant attention, ranking third and fourth, respectively. Furthermore, keywords such as "when is the adult education exam," "adult education registration," "adult education majors," "adult education tuition," and "adult education eligibility requirements" also exhibited high search frequencies. This indicates a strong interest in specific information about adult education, such as exam dates, registration procedures, major choices, and costs. These data reveal the primary concerns of users when considering or participating in adult education, providing guidance for educational institutions and service providers.

Rank	Related Keywords	Frequency
1	National College Entrance Examination for Adults	20
2	Self-study Examination for Adults	16
3	Adult Education College	13
4	Adult Education School	11
5	When are the Adult Education Exams	7
6	Adult Education Registration	5
7	Adult Education Majors	4
8	Adult Education Tuition Fees	3
9	Adult Education Enrollment Requirements	3
10	Adult Education Application Process	3

Table 2. "Adult education" related search terms  
Source: authors' own research through Baidu Index

## 4. Discussion

### 4.1 The overall time distribution of "adult education" attention

The study found that China's online attention to adult education exhibits a trend of fluctuating upward over time. Notably, search index peaks tend to occur around April and October each year. Overall, the data showed significant fluctuations between 2014 and 2017, with reduced volatility from 2017 through the first quarter of 2019. The amplitude of fluctuations reached its peak value in April 2019, marking the highest point in nearly a decade, after which it became more stable but remained at a consistently high level of attention.

Firstly, the search trend for the keyword "adult education" shows significant fluctuations around April and October each year, which correlates with the scheduling of related exams during these periods. Adult education is highly attractive to individuals looking to enhance their

academic qualifications (Zhang et al., 2023) or acquire new skills (Jia et al., 2023) due to its flexibility and suitability for learners of various age groups. In China, adult education can be divided into self-study examinations and adult college entrance exams. The self-study examination (higher education examination for self-learners) is a national higher education examination system in China designed for independent learners, characterized by selection through exams without traditional student registration management. The adult college entrance exam (National Unified Examination for Admission to Adult Higher Education Institutions) is an educational system that began in the early 1950s (Rong, 2018), aimed at improving workers' competence and promoting lifelong learning (Pan, 2022). Both forms provide opportunities for adults to continue their education.

The National Unified Examination for Admission to Adult Higher Education Institutions (adult college entrance exam) has evolved from self-organized admissions to unified exams organized by provincial or industry departments, and finally to a nationwide standardized test (Zhang, 2020). After 1986, the adult college entrance exam became a single annual national examination held on the third weekend of October each year (Shi, 2018), with a lower difficulty level compared to the regular college entrance exam. The higher education examination for self-learners is offered four times annually—in January, April, July, and October—but since 2015, most regions have adjusted the frequency to twice a year, in April and October. During these periods, major media outlets and educational institutions provide extensive coverage and analysis of the registration process, exam subjects, and preparation strategies related to the adult college entrance exam (Yu, 2006), further boosting the 热度 of topics related to adult education. Admission plans for adult education in some regions are also likely to be announced during this time, attracting close attention and in-depth research from candidates and their family members, leading to a sharp increase in online searches around April and October, forming peak periods. The concentrated media reporting and policy interpretations contribute significantly to the noticeable fluctuations in search indices.

Secondly, the sustained influence of China's "lifelong learning" philosophy has deeply ingrained the awareness of self-directed learning among people, contributing to the high search volumes for adult education over the past decade. If lifelong learning is an ongoing, self-motivated quest for knowledge throughout one's life, then self-directed learning is the critical skill that enables this process. In adult education, the concept of self-directed learning is fundamental and has been widely used since its introduction in the 1970s (Tough, 1971). As a self-guided approach to learning that embodies self-improvement and self-education (Tøsse, 2005), it encompasses sociological, pedagogical, and psychological dimensions (Long, 1989).

Since Cyril Houle published *The Inquiring Mind* in 1961, positioning self-directed learning as a crucial component of adult learning (Brockett & Donaghy, 2005), the concept has achieved almost sacred status in adult education literature by the 1980s (Candy, 1988). Specifically, self-directed learning means individuals take proactive responsibility for their own education (Loeng, 2020); hence, those who learn actively tend to acquire more and better knowledge compared to those who passively receive instruction (Knowles, 1975), with self-motivation playing a significantly larger role (Suanmali, 1981). The "National Lifelong Learning Week," initiated by the Ministry of Education since 2005, is a distinctive event aimed at promoting the concept of lifelong learning through various educational activities. It encourages all citizens to participate proactively in learning to foster personal growth and social progress (Ministry of Education, 2024). Running for nearly two decades and covering the entire country, this officially endorsed initiative has greatly promoted the 普及 of self-directed learning in China, further enhancing and sustaining the continuous high level of online searches for adult education over the years.

Finally, building on the consistently high search volumes over the years, there were notable increases in search numbers in 2014, 2018, and 2019, primarily influenced by policy changes during those years. In June 2014, the State Council of China issued the *Decision on Accelerating the Development of Modern Vocational Education* (State Council, 2014), which outlined the guiding principles, basic policies, goals, and measures for accelerating modern vocational education development up to 2020. This document emphasized forming a modern vocational education system characterized by lifelong education concepts, Chinese features, and world-class standards. Consequently, search volumes rapidly increased from mid-June to the end of June, reaching Point A and maintaining a strong upward trend until Point B in August before gradually declining. The significant fluctuations in search indices in 2018 and 2019 can be attributed partly to the *Opinions on Deepening the Reform of Teacher Team Building in the New Era* released by the Ministry of Education (State Council, 2018). This policy highlighted the importance of lifelong learning and encouraged teachers to enhance their professional competence through adult education. Following its release, more educators and members of the public began paying attention to opportunities in adult education, especially those seeking career advancement. Subsequently, the State Council issued the *Action Plan for Skills Improvement (2019-2021)* (State Council, 2019), which aimed to promote large-scale vocational skills training for all types of workers and emphasize policies supporting adult education and skills enhancement. This initiative was designed to comprehensively boost adults' skill levels and career development. The strong support for adult education reflected in

this plan acted as a powerful stimulus, pushing online attention to its highest peak in nearly a decade. Additionally, educational institutions like "Think Academy" and "Homework Help" introduced courses across multiple fields, including English and vocational skills improvement, offering comprehensive learning support for adults. Their promotional activities further contributed to the rise in search volumes.

Since 2020, the search index for "adult education" has remained relatively stable but has shown a general decline compared to previous years. This situation can be partly attributed to various societal factors. Toward the end of December 2019, the novel coronavirus outbreak occurred in China. Following this, China implemented a series of measures to control the spread of the virus. It wasn't until the National Health Commission issued the *Notice on Further Optimizing and Implementing COVID-19 Prevention and Control Measures* (NHC, 2022) that pandemic restrictions were fully lifted. During the three years impacted by the pandemic, many industries faced layoffs and closures, leading to instability in the job market. In response to the uncertainties brought about by the pandemic, people placed greater emphasis on long-term career planning and adjustment, favoring professions that offer long-term stability and security. Some individuals may have shifted toward more direct employment routes or sought alternative forms of learning and development opportunities, resulting in a reduced focus on adult education. Nonetheless, adult education remains a crucial avenue for many to enhance themselves and adapt to the rapidly changing work environment.

#### 4.2 The geographical distribution of "adult education" network attention

Regarding the ranking of attention levels across Chinese provinces, Guangdong Province holds the top position. Henan and Zhejiang Provinces also exhibit high levels of interest in adult education, ranking second and third, respectively. A further comparison of provincial search indices reveals that the top-ranked Guangdong Province has a search index of 1000, more than three times higher than that of Shanghai, which stands at 310 and ranks tenth. This clearly demonstrates the significant level of attention paid to adult education by internet users in Guangdong Province.

The aforementioned phenomenon primarily stems from the strong pursuit of lifelong learning and personal career development by the people of Guangdong Province. According to human capital theory (Becker 1964; Mincer 1974), individuals can enhance their capabilities and professional competitiveness through education and training, thereby securing better job opportunities and higher incomes (Peng et al., 2024). Therefore, vocational education should focus on three aspects: human capital development, designing pathways for lifelong learning,

and fostering collaboration among multiple parties, to help adults achieve employment and promote sustainable career development (Chen, 2024). As a pioneer in the reform and opening-up policy, Guangdong boasts a developed economy and intense competition, leading its residents to place greater emphasis on improving professional skills and knowledge levels through adult education to adapt to the rapidly changing work environment.

The emphasis on adult education by people in Guangdong can be explained from multiple aspects including economics, culture, and social psychology. Firstly, Guangdong Province boasts a robust economy and vibrant market environment, with its GDP reaching 13.57 trillion yuan in 2023, representing a year-on-year growth of 4.8%, and it has continuously ranked first nationwide for 35 years. The province hosts over 18 million business entities, with total foreign trade imports and exports amounting to 8.3 trillion yuan (Xie et al., 2024). As the largest provincial economy in China with the strongest comprehensive competitiveness, Guangdong demonstrates formidable strength in economic output and market dynamism. This sustained economic growth and active market environment provide residents with abundant employment opportunities and development prospects, while also stimulating their strong pursuit of lifelong learning and personal career advancement.

As economic pressures increase and the job market becomes increasingly competitive (Wang & Liu, 2024), many companies face the stress of layoffs and salary reductions, creating an uncertain work environment. In contrast, enhancing one's qualifications and skills through adult education can better equip individuals to meet career challenges and improve employment stability. Finally, social psychology and family expectations are also significant reasons driving the pursuit of adult education among people in Guangdong. Parents' educational expectations serve as a crucial intermediary factor influencing the next generation's career choices and development (Chen et al., 2024). In various social settings, relatives and friends often discuss their children's career development and future plans, with higher education and specialized skills frequently seen as more competitive options. This external pressure subtly increases the demand for adult education among individuals.

In summary, it is the strong pursuit of lifelong learning and personal career development that drives the people of Guangdong to invest more attention in understanding information related to adult education. Whether motivated by considerations for their children's future career planning or their own aspirations for career advancement, these factors encourage individuals from Guangdong to actively seek out details regarding enrollment conditions, course offerings, exam schedules, and more through online channels. As a result, Guangdong Province exhibits a notably high level of online attention toward adult education.

### 4.3 Demographic distribution of online attention to "adult education"

According to the preceding text (Figure 5b), the group aged 30~39 shows the highest level of attention to adult education, accounting for 32.14% of the total population. The primary reason lies in the fact that individuals in this age group are mostly at a critical stage in their careers. According to the career lifespan theory (Super, 1957), a career is a continuous life process that develops through various career stages (McMahon and Patton, 2018). For the 30~39 age group, many have accumulated initial work experience and begin to realize that skill enhancement and lifelong learning are crucial means to overcome career anxiety (Eidlin-Levy et al., 2023) as they adapt to the ever-changing professional environment and market demands. Moreover, adults aged 30~39 may be at a balancing point between family responsibilities and personal development, seeking to enhance their competitiveness through adult education to address multi-dimensional challenges such as self-awareness in the workplace, career goals, and career choices (Liu et al., 2024).

Adult education, as a flexible learning approach, offers a variety of options for individuals in this age group. In terms of admission policies, adult education programs typically exhibit high inclusiveness and flexibility, allowing learners from diverse backgrounds to participate. For instance, many adult education programs provide multiple formats such as online courses, night classes, or weekend sessions, facilitating working professionals to balance their work and study commitments. Regarding program offerings, adult education spans a broad spectrum of academic fields, including management, information technology, engineering, education, and more. These disciplines are designed to meet the needs of various industries and career development. Each specialty has its own characteristics in curriculum design, training objectives, and career orientation, enabling learners to choose the most suitable path based on their individual circumstances.

Given the rich content and unique requirements of adult education in terms of enrollment conditions, admission policies, and program offerings, this information undoubtedly becomes a critical focus for the 30~39 age group, who must delve deeply into these aspects. To accurately determine their suitability for a specific adult education program and how to apply based on their personal circumstances, they inevitably rely heavily on various information sources. Through online searches, consultations with educational institutions, attending relevant seminars, and more, internet users in this age group actively seek out all kinds of information about adult education. They do this to ensure they can achieve better development in their career paths.

#### 4.4 Content distribution of "adult education" network attention

As shown in the preceding text (Table 2), the search content related to "adult education" is characterized by its consistency and clarity, with search data primarily concentrating on several key aspects: adult college entrance exams, self-study exams for adults, adult education colleges and schools, exam schedules, registration information, program selection, tuition fees, and application procedures. Regarding adult college entrance exams, the search frequency is the highest at 20 times, indicating significant public interest in this pathway for further education. Self-study exams for adults follow closely with 16 searches, suggesting that many people hope to enhance their educational qualifications through this means. The search frequencies for adult education colleges and schools are 13 and 11 times, respectively, reflecting interest in specific educational institutions.

Regarding exam schedules, the search frequency is 7 times, indicating candidates' attention to examination arrangements. This is because the exam periods for adult education are typically concentrated, and missing one cycle means waiting for the next, so candidates need to determine the dates in advance and prepare accordingly. The search frequencies for registration information (5 times) and enrollment conditions (3 times) are also relatively high, showing that potential students wish to understand how to participate in adult education programs and the specific enrollment requirements. Additionally, the search frequencies concerning program selection (4 times) and tuition fees (3 times) reflect people's concerns about educational content and economic costs. Searches related to the application process (3 times) indicate that candidates seek detailed information about the entire enrollment procedure.

In summary, the search content presented in the table shows that public attention to adult education encompasses multiple levels and is both concentrated and in-depth. These data reflect the significant role and influence of adult education in today's society. Whether through adult college entrance exams or self-study exams for adults, or by choosing specific adult education colleges and schools, the public demonstrates a strong thirst for knowledge and a demand for career development. At the same time, there is considerable focus on practical issues such as policy specifics, exam schedules, enrollment procedures, and economic costs, enabling individuals to make the most suitable decisions.

#### 5. Conclusion and Limitation

Baidu Index is an effective tool for measuring public attention to adult education. Analysis of the data reveals that Chinese internet users' online interest in adult education shows a trend of fluctuation with gradual upward momentum over time. Notably, search heat peaks



significantly around April and October each year, a phenomenon closely linked to career development aspirations and parents' expectations for their children's education. In terms of gender differences, males exhibit stronger interest and participation. Regarding age distribution, individuals aged 30~39 is the most active group, accounting for the highest proportion of total searches. As for geographic distribution, Guangdong Province leads in search indices, indicating that netizens in this region hold a high level of concern for issues related to adult education.

Although Baidu is one of China's primary search engines with a broad user base, it does not capture the behavior of all internet users. Baidu Index only reflects and collects search activities conducted on the Baidu platform. However, China has short video platforms like "Xiaohongshu" and "TikTok" which attract a large number of users with their unique interactivity, content formats, and entertainment value. Discussions and interpretations of adult education on these platforms are often more vivid, intuitive, and diverse. For example, many educational institutions and individuals register accounts on these short video platforms to post content such as course introductions for adult education, sharing of learning experiences, and policy analyses. The discussions, video postings, and other data related to adult education on these platforms are not covered by Baidu Index, leading to an incomplete representation of the extent and spatiotemporal differences in Chinese netizens' attention to adult education.

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