Qinyi Tan*
 0000-0002-2291-4554

Xiaolu Chen****
 0000-0002-9718-8454

Meijie Wang**
 0000-0002-4396-6468

Haiou Liu*****
 0000-0003-1314-8824

Fang He***
 0000-0002-8302-7609

Luyan Teng******
 0000-0001-7673-3217

ANALYZING THE SPATIO-TEMPORAL CHARACTERISTICS OF PUBLIC INTEREST IN GENDER DISCRIMINATION THROUGH BAIDU INDEX DATA

ABSTRACT

Gender equality has always been a hot topic of global concern. This study aims to understand the temporal and spatial characteristics of public interest towards gender discrimination in China, providing information support for eliminating gender discrimination and promoting social equity in China to achieve the United Nations Sustainable Development Goal 5. It uses Baidu Index as the research tool, selecting gender discrimination as the keyword, taking July 1, 2013, to October 13, 2022, as the research interval to analyze the trend research, demand map, and population portrait of gender discrimination. It has been found that the search trend of gender discrimination has been slowly rising year by year, from the overall trend of

* Southwest University, Chongqing (China), e-mail: qinyi.tan@outlook.com (co-first author).
** Southwest University, Chongqing (China), e-mail: 2352279525@qq.com (co-first author).
*** Jinyu School in Liangjiang New Area, Chongqing (China), e-mail: 1281469105@qq.com
**** Egongyan Primary School, Chongqing (China), e-mail: 2275551063@qq.com
***** Chengdu University (China), e-mail: k1114233994@163.com (corresponding author).
****** Sichuan International Studies University, Chongqing (China), e-mail: luyan.teng@outlook.com (corresponding author).

personal computers (PC) and mobile. The peak appears periodically during the Spring Festival and summer vacation each year; "Gender discrimination" has a significant peak in early March 2017 and mid-June 2022. Additionally, the public also shows great concern for discrimination and racial discrimination. Most netizens who pay attention to gender discrimination come from East China. Females pay more attention to gender discrimination than males, and most of the females are under 19 years old and 20-29 years old. Finally, it contrastively analyzes the search trend of terms such as "discrimination" and "gender discrimination" and finds that the search index of "discrimination" is like that of "gender discrimination."

Keywords: gender discrimination, Baidu index, public interest, social concern, search engine

1. INTRODUCTION

The United Nations adopted the 2030 Agenda for Sustainable Development on September 25, 2015, which addresses 17 Sustainable Development Goals (SDGs), calling on the world to act together to eradicate poverty, protect the planet, and improve the lives and futures of all people. Among them, SDG5 is gender equality (United Nations, 2015; Leal Filho et al., 2022; Shang et al., 2022; Makam et al., 2009), that is, to "achieve gender equality and empower all women and girls"; it reflects the ever-increasing efforts of the UN towards gender equality (Leal Filho et al., 2022). However, gender equality has encountered serious challenges in recent years. Men working in obstetrics and gynecology often suffer from patient discrimination, female patients reject or even deny male gynecologists out of preference for their gender (Haivas, 2005), and a large number of incidents of discrimination against medical students occur in obstetrics and gynecology (Kim et al., 2019). The 58.2% of working women reported to suffer from gender discrimination in terms of income, compared to 5.2% of men, while 79.3% of women reported gender discrimination in terms of promotion opportunities, compared to 3.9% of men (Kim & William, 2012). Women may also quit their jobs after childbirth to raise their children, which may influence their pregnancy planning decisions (Fishbein, 1996). Thus, gender discrimination has a significant negative impact on human development. Fishbein defined discrimination as "harmful actions towards others because of their membership in a particular group" (UN, 1982). Gender discrimination mostly treats individuals or groups differently or unequally because of their sex and gender; thus, the United Nations Convention on the Elimination of All Forms of Discrimination against Women states that gender discrimination may affect the human rights and fundamental freedoms of citizens in political, economic, cultural, or any other aspect (Kouta & Kaite, 2011). Gender discrimination is any distinction, exclusion or restriction made based on socially constructed gender roles and norms which prevents a person from enjoying full human rights (Li, 2007).

It has been studied that gender discrimination is classified as direct discrimination (explicit discrimination) and indirect discrimination (implicit discrimination) (Guo, 2013). Direct discrimination is the intentional granting of significantly lower opportunities and treatment to one person or group of people based on certain characteristics (e.g., race, color, gender, religion, age, etc.) than to another person or group of people under the same conditions (WEF, 2022). Indirect discrimination is when apparently neutral regulations, standards, or practices have a disproportionately adverse effect on the opportunities and treat-

ment of people or groups with certain characteristics (WEF, 2022). According to the Global Gender Gap Report 2022 published by the World Economic Forum (WEF), only 68.1% of the gender gap has been closed globally, which means that it will take another 132 years to achieve gender equality (CIKD, 2021). This is a slight improvement compared to 2021 (the figure is 136 years in 2021), but a 30-year extension compared to the situation in 2020. The worldwide COVID-19 epidemic hit women harder than men, leading to the further expansion of gender inequality globally (CIKD, 2021). The report also predicts that it will be at least another 132 years before the world achieves full gender equality (Li, 2007). Therefore, gender discrimination is effectively addressed in favor of the Sustainable Development Goals (SDGs). Gender equality is not only a fundamental human right, but also a necessary foundation for peace, prosperity, and sustainable development in the world (UN, 1982; Roy & Huang, 2022).

In China, gender equality is an old and realistic topic. The number of women experiencing gender discrimination problems is much higher than that of men, which may be related to various factors such as political, economic, and cultural aspects of a certain social period in China. In early human societies, women dominated the society, but with the development of the economy, there was a surplus of means of production, which further accelerated the birth of private ownership and hierarchy (Zhang, 2004). Politically, the inferior status of women was gradually institutionalized, legalized, and canonized under patriarchal male domination; at the same time, the religious culture of male superiority and female inferiority permeated implicitly, and women were constantly weakened, interiorized, and even cheapened (Zhang, 2004). From the spread of such phrases as "only women and villains are difficult to raise" and "Helen of Troy", to the regulation of roles such as "three cardinal guides and five constant virtues" and "men are in charge of the outside world and women are in charge of the inside world", "all of these roles have been regulated" and other role norms, all of which suppress, restrain, monitor, and discriminate against women, and include women in the marginal position of the patriarchal cultural system (Zhang, 2004). Data from the Global Gender Gap Report 2022 show that China ranks 102nd in terms of gender gap, with an overall ranking of 5 places higher than last year (CIKD, 2021), such as "the scale and scope of women's employment are steadily increasing". The proportion of female employed persons to all employed persons nationwide was 43.2% in 2019, up 0.1% from 2016; urban non-private units the number of employed women reached 66.842 million, an increase of 1.57 million over 2015. The scale of women's employment has continued to expand. With the introduction and improvement of relevant laws and regulations such as the Law of the People's Republic of China on the Protection of Women's Rights and Interests and the Special Provisions on Labor Protection for Female Workers, the legitimate rights and interests of women have been further protected (Zhang, 2004; NPC Standing Committee, 1992; the State Council of PRC, 2014). It is also reported by UNDP that the HDI values for Chinese women increased. Additionally, in 2020, China's Gender Development Index (GDI) value rose to 0.957, an increase from 0.912 in 1995, indicating that the HDI values for Chinese women increased from 0.522 to 0.744 from 1995 to 2020. In addition, in 2020, China's Gender Development Index (GDI) value rose to 0.957, an increase from 0.912 in 1995, indicating that gaps between women and men are narrowing in education, health, and command over economic resources. Despite the positive trend in addressing gender discrimination in China, the problem of gender discrimination is still prominent. We still need to analyze Chinese netizens' attention to gender discrimination,

understand the spatial and temporal characteristics of the online attention to gender discrimination, and other related issues, to support the creation of an inclusive society by eliminating gender discrimination, and achieve the goal of gender equality in the Sustainable Development Goals as soon as possible.

The 50th China Internet Development Statistics Report shows that as of June 2022, the size of China's search engine users reached 821 million, accounting for 78.2% of the overall Internet users, of which the number of active users reached 500 million (CNNIC, 2022). The rapid development of the Internet has provided great convenience for people to find information, obtain and analyze data quickly. The use of search engines further enhances the valuable value of the Internet in people's life and work. Baidu, as the largest search engine in China, has a database of over 100 billion Chinese web pages and can quickly find relevant search results (Bergemann et al., 2018). Baidu index is a big data platform developed by Baidu search engine. Baidu index is like Google trends, both are tools to analyze the search behavior of users on the platform (Fang et al., 2020). Therefore, using the Internet search trends of Baidu index to collect and analyze data can effectively reflect the spatial and temporal characteristics of China's Internet users' interest about gender discrimination.

2. MATERIALS AND METHODS

As with Google, Baidu is an important representative of the search engine with a huge amount of information. Since 2011, Baidu Index data reflect the daily search volume of different keywords (CNNIC, 2022; Zeng & Zhou, 2019), and users can select a specific time and region according to their needs to query the attention of netizens to a certain keyword. The statistics provided by Baidu Index are mainly divided into three major sections: trend research, demand maps, and demographic profile. The trend research includes 3 categories: PC trend, mobile trend, and PC trend and mobile trend. The demand maps reflect the demand for other related search terms as shown in the change of users' search behavior before and after searching for the term; demographic profile is a statistical analysis of the regional distribution and attributes of people searching for the keyword.

This study analyzed the research trends, demand maps, and demographic profiles of the keyword "gender discrimination", and the collected data covers the period from from July 1, 2013 to October 13, 2022. As the demand maps take "week" as the statistical unit, it provides the data within the last year. Therefore, we used Microsoft Excel 2016 to summarize the collected information for gender discrimination during the period from October 2021 to October 2022, and the word cloud of gender discrimination was generated. We can analyze what other related words netizens need to search except for the keyword gender discrimination. At the same time, the search trends were compared with those of gender discrimination, and discrimination.

3. RESULTS AND DISCUSSIONS

In recent years, Baidu Index has attracted the attention of researchers and has been applied to knowledge management, mental health, disease prevention and control, and other fields (Tan et al., 2022a; Hu & Mou, 2020; He et al., 2022; Tan et al., 2022b). This research is the

first exploration of the spatio-temporal characteristics of Chinese netizens' online behavior of "gender discrimination", which truly reflects the public's online attention to "gender discrimination."

The trend research of Baidu Index is divided into three parts: PC trend, mobile trend, and PC and mobile trend. This study selects the data from July 1, 2013 to October 13, 2022 to analyze the temporal and spatial characteristics of the network attention of the keyword gender discrimination. The research found that, from the overall trend of PC and Mobile, the search trend of gender discrimination has been slowly rising year by year. The trough appears periodically during the Spring Festival and summer vacation every year, while "gender discrimination" appears obviously at the beginning of March 2017 and the middle of June 2022 (Figure 1).

At the beginning of March 2017, the Baidu search index of "gender discrimination" reached the highest value ever recorded. The main reason found in the study is, firstly, the arrival of International Women's Day on March 8 that arouses netizens' high attention to "gender discrimination" (Carneiro, 2021). International Women's Day (IWD) can be defined as a milestone for struggle and social transformation and the symbol of women's active participation in changing their lives (Gökçe et al., 2020). So on this day, women from all continents in the world pay attention to women's human rights, regardless of nationality, race, language, culture, economy, and political differences (Wen, 2011). The United Nations Convention on the Elimination of All Forms of Discrimination against Women points out that gender discrimination may affect citizens' human rights and fundamental freedoms in the political, economic, social, cultural or any other fields (UN, 1979). Therefore, people pay close attention to gender discrimination that may affect women's rights while celebrating International Women's Day. Secondly, according to the results of the 2017 Survey Report on the Status of Chinese Women's Workplace released by Zhaopin on March 6, 2017, more than 80% of women believed that there was gender discrimination in employment (Zhilian, 2017), which immediately triggered extensive public discussion. The survey report collected 128576 valid samples, 57% of which were male and 43% were female. The survey found that 22% of women believed that there was serious gender discrimination in the process of employment; 25% of women believed that there was serious gender inequality in the process of promotion, while 14% and 18% of men, respectively. Another 44% of women said they had not been promoted so far, compared to 31% of men. In terms of the gender of the direct leadership, only 28% of the leaders are women, and the rest are men. The workplace has become a disaster area of "gender discrimination", and even some enterprises have adopted the screening method of "not checking the female resume" when recruiting to directly exclude female job seekers. Gender discrimination in the workplace has seriously damaged women's rights and interests, so it is bound to cause widespread concern in the community. In addition, Baidu's search trend of "gender discrimination" in the middle of June 2022 was on the rise, which may be related to the attack in Tangshan, China, on June 10, 2022 (Wang & Jing, 2022). On June 10, 2022, a video about provocation and violence against women spread on the Internet and caused public anger. Since then, under the continuous follow-up and reporting of the media, the beating incident has been growing, which has aroused great attention of the government and heated discussion from all walks of life. The issue of "gender discrimination" has once again become a hot topic of concern in all sectors of society. At the same time, it also shows that the public's attention to "gender discrimination" is vulnerable to public opinion.

The bottom value of the search trend of "gender discrimination" often appears during the Spring Festival (January–February) and summer vacation (July–September) every year, which is related to the inferior position of women in the workplace. Up to now, the problem of gender discrimination in the workplace is still serious, and the gender differential treatment and marginalization of women such as harassment of pregnant women, entry threshold, and promotion ceiling occur frequently (Volpe et al., 2020; Bernhardt & Dewenter, 2022; Hang et al., 2022). According to the Research Report on Gender Discrimination in China's Workplace by the Women's Law Research and Service Center of Peking University Law School, on average, one out of every four female respondents was rejected because of gender (Wang, 2009). A survey shows that female students have fewer employment opportunities than male students. 91.9% felt the gender bias of employers (Wu, 2022). To sum up, the situation of women in the workplace is worrying. Fortunately, the arrival of holidays can keep women away from the workplace, greatly reducing the probability of women suffering from gender discrimination. At the same time, the relaxed and happy atmosphere of the holiday will reduce people's negative emotion level (YongHyun & Hoon, 2019), thus reducing people's attention to "gender discrimination."
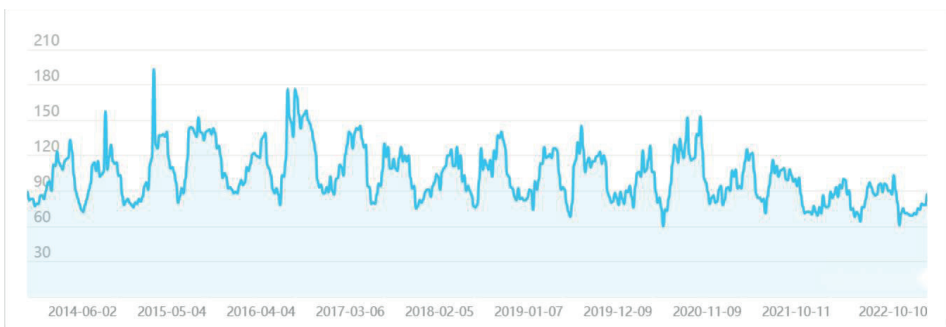
Figure 1
Baidu Search Trend chart of gender discrimination (A. General Search trend chart; B. PC search trend chart; C. Mobile search trend chart)
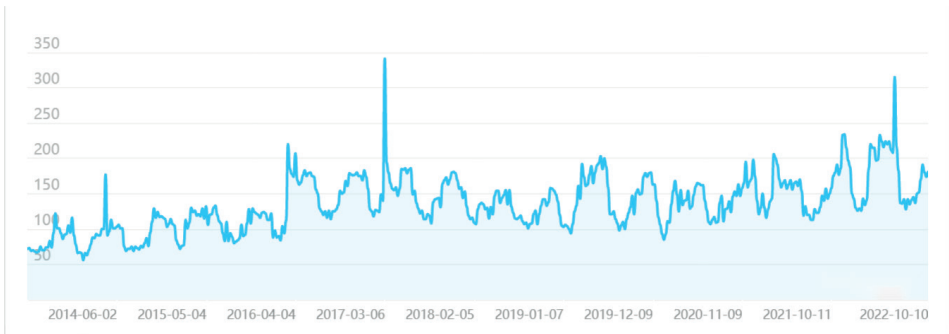
A
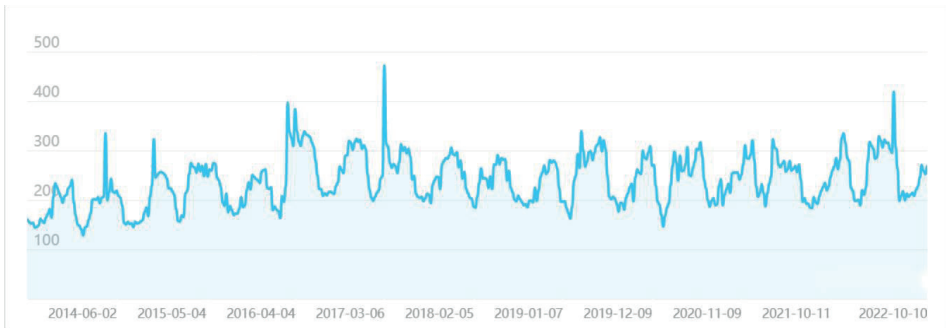
B

C

The demand map of Baidu Index can reflect the change of users' search behavior before and after searching for a keyword, as well as users' demand for other relevant search words. In the demand map, the retrieved keyword is the center of the circle, and the distance between related words and keywords, and the size of the search index of related words themselves are the basis for determining the degree of correlation between related words and keywords. The closer the related words are to the keywords, the stronger the correlation is. The larger the search index of the related words, the greater the correlation is. As the demand map only shows the data in week as the statistical unit in the past year, this study summarized the top ten words of "gender discrimination" from October 2021 to October 2022, analyzed and sorted the summary data in the past year, recorded the top nine keywords according to the retrieval frequency (Table 1), and made a visual word cloud map (Figure 2). The research found that "discrimination" and "racial discrimination" had the highest search frequency. The reason is not hard to know. First, when people use search engines to retrieve information, they will adopt the strategy of narrowing the scope and gradually focusing. Therefore, when people want to focus on gender discrimination, they must first focus on the relevant information of discrimination, and then go to obtain the information of "gender discrimination," which leads to the search frequency of the word "discrimination" ranking first. Secondly, discrimination in Europe is believed to be widespread, particularly on the grounds of age, gender, and ethics (Öblom & Antfolk, 2017). In south Europe, in the labor market, the gender gap is reflected in the different outcomes men and women reach in terms of participation in the labor force, types of occupations they choose, and relative incomes or hourly wages they receive (Castellano et al., 2018). These results show that discrimination based on race and sex is still widespread in many countries, including China. Therefore, when people access the information of gender discrimination, the closely related "ethnic discrimination" is also one of the information that people want to know, which leads to the second retrieval amount of "ethnic discrimination."

The population portrait of the Baidu Index can identify the region of Internet users searching for gender discrimination. The analysis found that Internet users in East China ranked first in terms of search volume for gender discrimination, while those in South China and North China ranked second and third. Internet users in Guangdong ranked far higher than those in Jiangsu Province and Beijing. Beijing netizens were most interested in searching for "sexism," followed by Shanghai and Guangzhou (Figure 3).

Table 1

The most popular terms related to gender discrimination for Internet search from October 2021 to October 2022

Order	Keywords	Frequency
1	discrimination	25
2	racial discrimination	21
3	feminism	18
4	gender	13
5	women's rights	12
6	gender equality	12
7	prefer sons over daughters	11
8	Ye Yongzhi	6
9	male chauvinism	4

Notes: In the Chinese language, there are two different translations of feminism; the frequencies are 13 and 5, specifically. Then, the frequency of feminism is 18 at last.

Figure 2

Visual word cloud map of gender discrimination – related words from October 2021 to October 2022
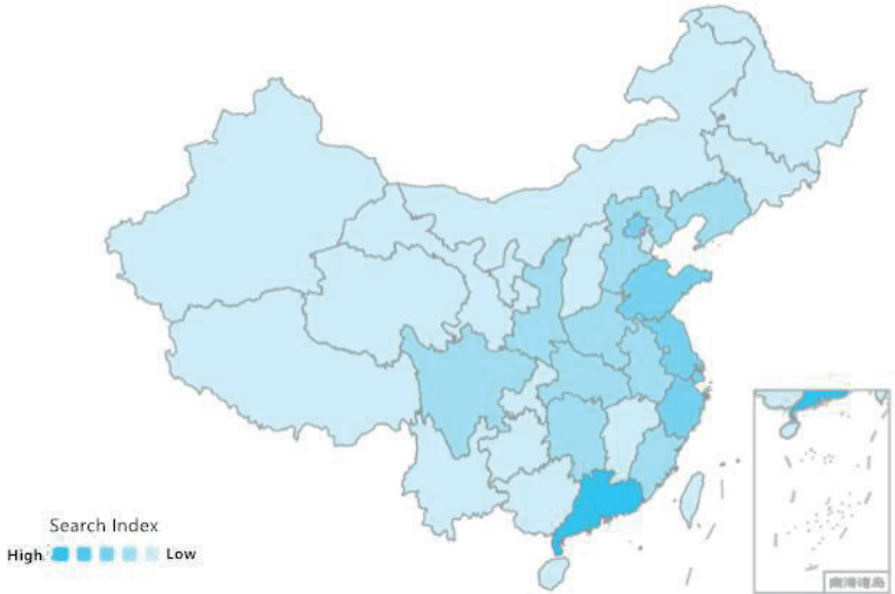
Figure 3

*Geographic distribution of search population with gender discrimination*

A

B

Exploring the reasons why Internet users in Guangdong ranked first in terms of search volume for gender discrimination, it was found that male chauvinism was widespread in Guangdong Province, especially in the Chaoshan area in eastern Guangdong, which showed "son preference," "there are three ways to be unfilial," "more children and more blessings," "raising children to prevent old age," "men outside the home, women inside the home," "ignorance is woman's virtue," "women with long hair and short knowledge," and so on. Women in the Chaoshan area have a low status (Chen, 2009). The low status of women is shown as follows: first, women cannot enter the family tree. The compilation of genealogy is a common cultural phenomenon among Chaoshan people, and women are not qualified to enter when the clan people are compiling genealogy (Chen, 2009); second, influenced by the ideology of son preference, the traditional Chaoshan community shows a serious phenomenon of male superiority and female inferiority, and women are discriminated against and excluded (Yang, 2021). The imbalance between the male and female population in Guangdong Province has further led to the unequal treatment of women. According to the data of the seventh national census, the permanent population of Guangdong Province has reached 126 million, ranking first in the country. Among the permanent residents of the province, the male population is 66.8736 million, accounting for 53.07%; the female population is 59,138,800, accounting for 46.93% (Women's Network of China, 2021). In addition, by analyzing the reasons why Beijing and Shanghai rank second or third in the city rankings, it can be found that Beijing and Shanghai are both first-tier cities in China, with highly developed economies and education. According to the survey, Beijing will achieve a GDP of 4026.96 billion yuan in 2021, an increase of 8.5% over the previous year, of which the urban population is 19.161 million, accounting for 87.5% of the permanent population; the permanent migrant population is 8.348 million, accounting for 38.1% of the permanent population (Beijing Municipal Bureau of Statistics, 2022). Therefore, the competition for jobs is quite fierce, and women encounter more discrimination in the process of employment. The 2021 China Women's Workplace Status Survey Report shows that women are still dragged down by gender factors in workplace development, and 55.8% of women are asked about marriage and childbearing in job seeking (Beijing Municipal Bureau of Statistics, 2022). In addition, 29.6% of women were once restricted by employers for gender reasons when seeking employment, 18.2% of women were forced to give up their career development because of taking care of their families, 7.7% of women had experienced sexual harassment in the workplace, and 7.8% of women were transferred to other posts during the marriage and childbearing stage, and 4.1% did not enjoy holidays (Beijing Municipal Bureau of Statistics, 2022). The proportion of men encountering the above situations is lower than that of women, and women are subject to obvious "gender restrictions" in the workplace (Beijing Municipal Bureau of Statistics, 2022). In Shanghai, of the 300,000 newspaper job advertisements published from 1995 to 2005, the proportion of posts limited to men exceeded 30% (Yang, 2021). In 2022, Shanghai will recruit 500 policemen for basic police posts, including 450 males and only 50 females (Shanghai Police College, 2022). Therefore, it is not difficult to see that women in the workplace in Beijing and Shanghai face serious discrimination, and the public's attention to gender discrimination naturally increases.

Through population portlet, we can learn the gender and age distribution characteristics of Internet users who search for gender discrimination. This study analyzed the data from July 1, 2013 to October 13, 2022 (Figure 4).
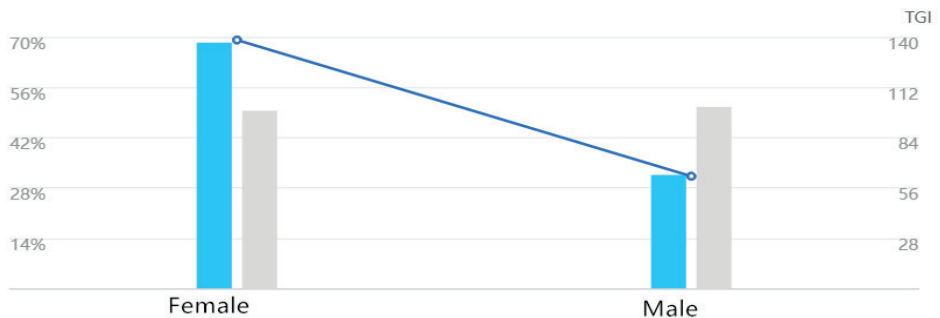
Figure 4

Population distribution characteristics of search for gender discrimination (age group and gender group)

A
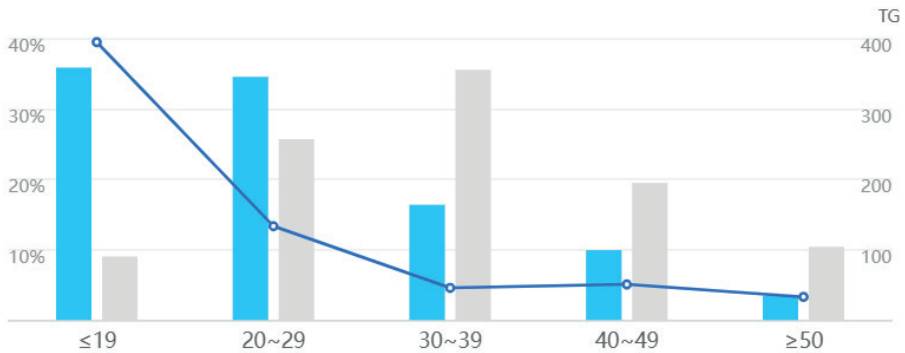
B

The results showed that most of the netizens' attention to gender discrimination came from women (68.43%), mainly distributed under 19 years old (35.81%) and 20–29 years old (34.5%). It is obvious that women pay much more attention to "gender discrimination" than men. The attention of the 20–29 years old group was 34.5%, that of the 30–39 years old group was 16.34%, of the 40–49 years old group was 9.92%, and of the people over 50 years old only accounted for 3.43%. The group under 19 years old paid the highest attention to "gender discrimination" (Figure 4), accounting for 35.81%. Most of them are primary and secondary school students under the age of 19. They are in puberty, which is also a critical period of sex identity. Before the age of 3, children can accurately label themselves (and others) according to their gender. In the middle to late childhood, they can clearly express their views on the social status of these groups and show their awareness of prejudice and discrimination (Akiba et al., 2004). The middle childhood (7–12 years old) is an important

period to explore the emergence of social identity, because children's cognitive progress and social pressure urge them to think about the relationship between themselves and others in a new way, using social concepts, such as race and gender (Akiba et al., 2004; Burchinal et al., 2008; Rogers & Meltzoff, 2017). In the year 2000, for example, the U.S. Department of Education's Office for Civil Rights received approximately 5000 complaints regarding instances of discrimination (Brown & Bigler, 2004). The majority of these complaints (approximately 70%) were filed on behalf of elementary and secondary school children) (Brown & Bigler, 2004). In addition, the reason why the groups under 19 pay attention to gender discrimination stems from both family and school factors. In terms of family, parents have different attitudes towards different children, and parents prefer younger children to older ones (Ma & Zhang, 2019). The eldest son will experience negative psychological states such as anxiety, inferiority, selfishness, etc The strong possessive desire of the eldest son makes them do things that are not conducive to others (Ma & Zhang, 2019). In a period after the birth of the second child, parents will be busy taking care of the second child and reduce their attention to the first child to a certain extent, especially the initiative of the mother to interact with the older child may be significantly reduced (Liu, 2017). In terms of schools, it is mainly teachers' different attitudes towards different students. For example, some teachers now often arrange students with good academic performance, high social status, and special relationship with themselves in seats near the podium, while students with poor performance and so-called disobedient students in teachers' minds are placed in the back row. In this way, student seating represents the status and identity of students in the class, which implies obvious discrimination and unfairness (Ju, 2013). The 20–29 age group represents college students and young workers. College students are easy to be treated differently between men and women on campus and in the process of job hunting after graduation. Unfair employment opportunities or employment treatment are adopted for college students. At present, gender discrimination against female college students is the most obvious (Zhao & Zhu, 2020; Yang, 2015). On the one hand, the words "only recruit men" and "men first" are openly used in recruitment advertisements. On the other hand, women are employed with strict employment standards, providing less opportunities for training and promotion. Some enterprises even deliberately lower women's wages under the same conditions, and some enterprises attach unfair conditions such as restrictions on marriage and childbearing age in their employment conditions (Zhao & Zhu, 2020; Yang, 2015). Women, as new workers in the workplace, are more vulnerable to unfair discrimination and pay more attention to gender discrimination (Yang, 2015).

In addition, Target Group Index (TGI) can reflect the strength or weakness of the target group within a specific research scope (such as geographic region, demographic field, media audience, product consumers). The TGI index represents the differences in the concerns of users with different characteristics. The larger the TGI index is, the stronger the characteristics are in the target group and all users, and the smaller the TGI index is, the opposite is true. When the TGI index is equal to 100, it means that there is no difference in the performance of the feature between the target group and all users. In the gender distribution, the TGI of women is 138.37%, while that of men is only 62.46%, indicating that women are more interested in information related to gender discrimination.

It is found that the search trend of Internet users for keywords "discrimination" and "gender discrimination" was similar (Figure 5). And the peak value and valley value appear at the same time, which reflects the consistency of Internet users' search behavior and inter-

est in time and space. In general, the overall search trend of discrimination is far higher than that of gender discrimination. The reason is that gender discrimination, as a sub-concept of discrimination, is one of the types of discrimination. In addition, religious discrimination and racial discrimination are also involved. When people encounter this situation, most of them will have a search motivation for the word discrimination.

Figure 5

Comparison Chart of Trend Research on Baidu Index of Discrimination and Gender Discrimination
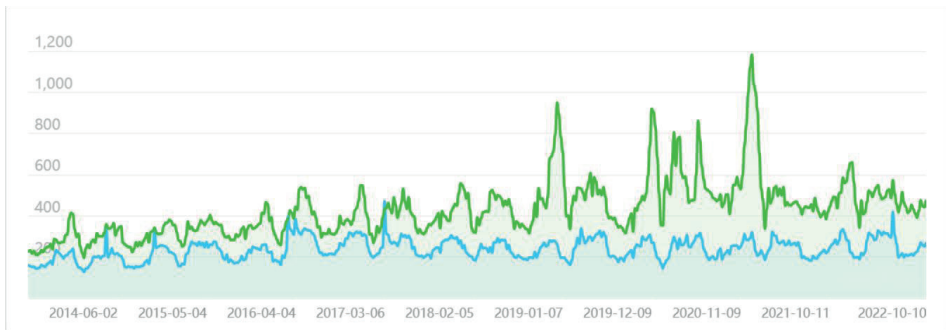
4. CONCLUSIONS AND LIMITATIONS

Baidu Index can understand the online behaviors and interests of netizens about gender discrimination. The declining trend of gender discrimination in search is closely related to the traditional Chinese holidays, Spring Festival, and summer vacation, while the rising trend is related to International Women's Day, news, and public interest. In terms of gender, women who often encounter gender discrimination are more inclined to understand the relevant content of gender discrimination than men. Guangdong has become China's most concerned province about gender discrimination because of its male chauvinism. The search trend of "discrimination" is similar to that of "gender discrimination" but because discrimination is the upper concept of gender discrimination, the search volume of "discrimination" is much higher than that of "gender discrimination."

   Although Baidu is now the largest search engine in China, the data of Baidu Index is aimed at the users who use Baidu search engine. Therefore, the search engines cannot fully represent the views of all the public. Baidu index simply analyzes the data of search users in three parts: trend research, demand map and population portrait, without data based on other characteristics in terms of demographics. In addition, Baidu index collects data by keyword input, which tends to ignore the motives behind the crowd's search behavior, whether they search out of personal interest or out of research needs. Different search motives will have different influences on the degree of reflection of "gender discrimination" social attention. Finally, while search data are valuable for studying the population, young people may be overrated in terms of Internet use. Overall, the methodology of this study has captured the most representative search terms in the field. Although the Baidu Index

only provides data for the Baidu search engine, Baidu users account for 78.2% of the entire Chinese Internet population (CNNIC, 2022). Therefore, Baidu Index can represent the views of most Chinese netizens.

FUNDING

REFERENCES

Akiba, D., Szalacha, L. A., & García Coll, C. T. (2004). Multiplicity of ethnic identification during middle childhood: Conceptual and methodological considerations. *New Directions for Child and Adolescent Development, 104*, 45–60. https://doi.org/10.1002/cd.103

Angélica, Q., Eva, M., Juan A. M., & Guillermo B. W. (2021). 'Congratulations for your day': benevolent attitudes during March 8 in Mexico. *Journal of Gender Studies, 32*(1), 6–17 https://doi.org/10.1080/09589236.2021.1910802

Beijing Municipal Bureau of Statistics. (2022). *Statistical Bulletin of Beijing's National Economic and Social Development in 2021.* http://www.beijing.gov.cn/gongkai/shuju/tjgb/202203/t20220301_2618806.html

Bergemann, D., Bonatti, A., & Smolin, A. (2018). The design and Price of Information. *American Economic Review*, *108*(1), 1–48. https://doi.org/10.2139/ssrn.2981406

Bernhardt, L., & Dewenter, R. (2022). Does the tonality of US news casts indicate race and gender discrimination? *Caroline Criado Perez, 5*, 13–15. https://doi.org/10.1080/13504851.2022.2071826

Brown C. S., & Bigler R. S. (2004). Children's perceptions of gender discrimination. *Developmental Psychology*, *40*(5), 714–726. https://doi.org/10.1037/0012-1649.40.5.714

Burchinal, M. R., Roberts, J. E., & Zeisel, S. A. (2008). Racial identity, social context, and race-related social cognition in African Americans during Middle Childhood. *Developmental Psychology*, *44*(6), 1537–1546. https://doi.org/10.1037/a0013349

Cai, M. (2009). Research report on gender discrimination in China workplace released. *China Women's News.* https://kns.cnki.net/kcms2/article/abstract?v=eK9vp3Kgfwss9N6wfFwyzpCqumd9rrT5m55gmyGiCLALarIn2iPJ1rQejETKXE2j23-1yvD-zFCsPaZI3XlTqoB5ueqE_yrNO-G8zlT8CHrnIwRcmfjyfdw7cX-2anK2im90IEoWbfQ=&uniplatform=NZKPT&language=CHS

Carneiro, M. (2021). International women's day: fighting for the right to health care while facing COVID-19. *Women & Health*, *61*, 219–220. https://doi.org/10.1080/03630242.2021.1891622

Castellano, R., Punzo, G., & Rocca, A. (2018). The generational perspective of gender gap in wages and education in Southern Europe, *Review of Social Economy*, *76*(2), 227–258. https://doi.org/10.1080/00346764.2017.1423512

Center for International Knowledge on Development (CIKD). (2021). *Progress Report on the Implementation of the 2030 Agenda for Sustainable Development in China.* http://www.cikd.org/ms/file/getimage/1485868666176765953

Chen. Y. Y. (2009). Exploring the social phenomenon of son preference in Chaoshan area. *Higher Vocational Education Exploration, 03*, 56–60. https://doi.org/10.34257/gjhss-cvol22is5pg29

China Internet Network Information Center (CNNIC). (2022). *The 50th China statistical report on internet developmen*t. http://www.cnnic.net.cn/n4/2022/0914/c88-10226.html

Fang, J., Gozgor, G., Lau, C.-K. M., & Lu, Z. (2020). The impact of Baidu Index sentiment on the volatility of China's stock markets. *Finance Research Letters*, *32*, 101099. https://pure.hud.ac.uk/ws/files/15766613/BaiduIndexSentiment_FRL_V2.0.pdf

Fishbein, H. D. (1996). Peer prejudice and discrimination: Evolutionary, cultural, and developmental dynamics. *Boulder, CO: Westview Press.* https://www.researchgate.net/publication/248942334

Gökçe, Y., Huriye, T., & Işik, Ö. (2020). International women's day: ostensible celebrations or historical milestone of women's emancipation, *Voprosy Istorii*, *12*(2), 150–165. https://doi.org/10.31166/voprosyistorii202012statyi30

Guo, Y. J. (2013). Legal Judgment Criteria of Gender Discrimination in Employment--Based on the Investigation of American Legal Practice. *Global Law Review, 4*, 23–33. https://doi.org/10.4324/9781003306962-1

Haivas I. (2005). Sexual discrimination and harassment affects career choices. *BMJ*, *13*, 221–264. https://doi.org/10.1136/sbmj.0506226a

Hang, Y. N., Chen, F., & Rohe, K. (2022). Social Media Public Opinion as Flocks: Conceptualizing and Measuring Social Media. *Journal of Computer-mediated Communication, 27*, 17–19. https://doi.org/10.1093/icmc/zmab021

He, Z., Teng, L., & Tan, Q. (2022). Utilizing Baidu Index to Track Online Interest in Influenza during the COVID-19 Pandemic in China. *Cureus*, *14*(8), e27582. https://doi.org/10.7759/cureus.27582

Hu, Q., & Mou, YL. (2020). Using the Baidu Index to understand Chinese interest in thyroid related diseases. *Scientific Reports*, *12*, 1–4. https://doi.org/10.1038/s41598-022-21378-y

Ju, X. W. (2013). An Examination of teacher eccentricity: A Study of Teachers' Life History. *Journal of Shanghai Educational Research, 03*, 40–43. https://doi.org/10.1111/j.1944-9720.2011.01117.X

Kim, J.-H., Oh, S. S., Bae, S. W., Park, E.-C., & Jang, S.-I. (2019). Gender discrimination in the workplace: Effects on pregnancy planning and childbirth among South Korean women. *International Journal of Environmental Research and Public Health, 16*(15), 2672. https://doi.org/10.3390/ijerph16152672

Kim, S.-S., & Williams, D. R. (2012). Perceived discrimination and self-rated health in South Korea: A nationally representative survey, *PLoS ONE*, *7*(1). https://doi.org/10.1371/journal.pone.0030501

Kouta, C., & Kaite, C. P. (2011). Gender discrimination and nursing: A literature review. *Journal of Professional Nursing*, *27*(1), 59–63. https://doi.org/10.1016/i.profnurs.2010.10.006

Leal Filho, W., Kovaleva, M., Tsani, S., Ţîrcă, D.-M., Shiel, C., Dinis, M. A., Nicolau, M., Sima, M., Fritzen, B., Lange Salvia, A., Minhas, A., Kozlova, V., Doni, F., Spiteri, J.,

Gupta, T., Wakunuma, K., Sharma, M., Barbir, J., Shulla, K., & Tripathi, S. (2022). Promoting gender equality across the sustainable development goals. *Environment, Development and Sustainability, 25*, 14177–14198. https://doi.org/10.1007/s10668-022-02656-1

Li, A. (2007). The Identification of Gender Discrimination. *Hebei Law Science, 1*, 68–72. https://doi.org/10.1093/law-mpeccol/e127.013.127

Liu, T. T. (2017). From "One Child" to "Two Children": Transformation and Adjustment of Family System. *China Youth Study, 10*, 23–30. https://doi.org/10.33540/1520

Ma, Z. Y., & Zhang J. (2019). Study on the psychological influence of the second child on the long child and its countermeasures. *The Science Education Article Collects, 05*, 172–173. https://doi.org/10.35534/pc.0311129

Makam, A., Mallappa Saroja, C. S., & Edwards, G. (2009). Do women seeking care from obstetrician–gynaecologists prefer to see a female or a male doctor? *Archives of Gynecology and Obstetrics*, *281*(3), 443–447. https://doi.org/10.1007/s00404-009-1199-5

NPC Standing Committee. (1992). *Law of People's Republic of China (PRC) on the Protection of Women's Rights and Interests.* http://www.gov.cn/guoqing/2021-10/29/content_5647634.htm

Öblom, A., & Antfolk, J. (2017). Ethnic and gender discrimination in the private rental housing market in Finland: A field experiment, *PLoS ONE*, *12*(8). https://doi.org/10.1371/journal.pone.0183344

Rogers, L. O., & Meltzoff, A. N. (2017). Is gender more important and meaningful than race? an analysis of racial and gender identity among black, White, and mixed-race children. *Cultural Diversity and Ethnic Minority Psychology*, *23*(3), 323–334. https://doi.org/10.1037/cdp0000125

Roy, C. K., & Huang X. L. (2022). Achieving SDG 5, gender equality and empower all women and girls, in developing countries: how aid for trade can help? *International Journal of Social Economics*, *49*(6), 930–959. https://doi.org/10.1108/ijse-12-2020-0813/v1/review2

Shanghai Police College. (2022). *Regulations for Shanghai Police College to Enroll People's Police Students in the Public Security System and Judicial Police Students in the Court System in 2022.* https://www.shpc.edu.cn/gaxy/zs-dezkzsxx/20220309/5210.html

Shang, Y., Sivertsen, G., Cao, Z., & Zhang, L. (2022). Gender differences among first authors in research focused on the Sustainable Development Goal of gender equality. *Scientometrics*, *127*(8), 4769–4796. https://doi.org/10.1007/s11192-022-04430-6

State Council of the People's Republic of China (PRC). (2014). *Special Provisions on Labor Protection for Female Workers*. http://www.gov.cn/zwgk/2012-05/07/content_2131567.htm

Survey Report on the Status of Women in the Workplace in China. (2021). http://www.cn-women.com.cn/2021/03/08/wap_99222107.html

Tan, Q., He, F., & Teng, L. (2022a). Using Baidu index to investigate the spatiotemporal characteristics of public concern towards knowledge management in China. *Scientific Bulletin of Mukachevo State University. Series "Economics"*, *9*(3), 48–55. https://economics-msu.com.ua/en/journals/tom-9-3-2022/vikoristannya-indeksu-baydu-dlya-doslidzhennya-prostorovo-chasovikh-kharakteristik-upravlinnya-znannyami-v-kitayi

Tan, Q., He, F., & Teng, L. (2022b). "Using Baidu Index to Understand the Public Concern of Children's Mental Health in Mainland China in the Context of COVID-19 Epidem-

ic", *Journal of Education, Health and Sport*, *12*(10), 189–198. https://apcz.umk.pl/JEHS/article/view/40383

UN. (1979). *The Convention on the Elimination of All Forms of Discrimination against Women*. https://www.ohchr.org/zh/instruments-mechanisms/instruments/convention-elimination-all-forms-discrimination-against-women

UN. (1982). *The Convention on the Elimination of All Forms of Discrimination Against Women. Law Press*. https://www.un.org/womenwatch/daw/news/ye0401.htm

UN. (2015). *Transforming our World: The 2030 Agenda for Sustainable Development*. https://www.un.org/sustainabledevelopment/development-agenda/

Volpe, V. V., Dawson, D. N., & Laurent, H. K. (2020). Gender discrimination and women's HPA activation to psycho social tress during the postnatal period. *Harvard Business Review*, *27*, 352–362. https://doi.org/10.1177/1359105320953470

Wang, Z., & Jing, J. (2022). How should the media guide netizens' emotions in hot emergencies? Take the beating case in Tangshan as an example. *Press Outpost*, *17*, 28–29. https://kns.cnki.net/kcms2/article/abstract?v=eK9vp3KgfwuAGRpt1vCUaYAuLBCU9Ock7slogRgNBbNNt3YVVGopxEzGPzO00BGVL70HYMhKybimy5pi0Xje3R8OASSVbPXTXdVn7eHlPp62IRgqRYHxtxhPZ8KsPC8A-q_DAauYJo=&uniplatform=NZKPT&language=CHS

World Economic Forum. (2022). *The Global Gender Gap Report 2022*. https://www.weforum.org/

Wu, L. (2022). Ensuring Women's Rights and Interests and Ending Gender Discrimination in Employment. *China Employment*, *1*(56). https://kns.cnki.net/kcms2/article/abstract?v=eK9vp3KgfwuCSBCCPSqqSXMLSdIG_lY1zs-bfSLq_gpkugIH9Qylyi-NuolBoWjhH689si1tv7yc7o1valQxtyIZGwqt9S8M5_AWUqAZjIiFHmlOrt5VAaWu8p88-ApjPy3yPdm5iys=&uniplatform=NZKPT&language=CHS

Yang, X. H. (2021). Changes, Causes and Thoughts of Guangdong's Population Structure in Recent Ten Years (I): Analysis based on the data of the 7th National Census. *Lingnan Journal, 5*, 95–107. https://kns.cnki.net/kcms2/article/abstract?v=eK9vp3KgfwtR8C3O6co4GTm5HCw31-RNqEb3uYxe5NDtCPWiqAY3CG2hYTeP2zfwriGr4i4S3SoDtV9EsKvs1IrGh4NiBuSSXPIiWvAqKL1RykT1hvjFYMJ2QLqb59sqyi6BWGcqkds=&uniplatform=NZKPT&language=CHS

Yang, H. (2015). Study on Gender Discrimination in Recruitment of College Students and Its Social Impact. *Journal of Chinese Women's Studies, 4*, 97–103. https://kns.cnki.net/kcms2/article/abstract?v=eK9vp3Kgfwuw9weWCMBvRwneJmBHVxopOjGcZarrJE0-2yupVXqRY2mFaEHc6YrePC0c2xhiZGiZpBYMykws15WSe_AqZKqtCVHgQzqVlptr_pW-V31m6Id1aCap5UqPbP2Nym2ECD8=&uniplatform=NZKPT&language=CHS

YongHyun, K., & Hoon, L. (2019). The Effect of Festival Experience Attributes on festival Satisfaction, Existential Authenticity and Subjective Well-being. *Journal of Tourism Management Research*, *14*, 205–225. https://www.kci.go.kr/kciportal/ci/sereArticleSearch/ciSereArtiView.kci?sereArticleSearchBean.artiId=ART002843497

Zeng, K. Y., & Zhou, L. J. (2019). Analysis on network attention of class 5A and 4A tourist spots in Northeast China based on Baidu index. *Journal of Northeast Normal University (Natural Science Edition)*, *51*(1), 133–138. https://kns.cnki.net/kcms2/article/abstract?v=eK9vp3KgfwsdHQUeeOa0mAWAYaC1LiWKy4AudA9QClQcWuy3cNzi6FQvM7-suhn

A_V-hecYCMCroSovIqybGpo2C3P4VjCmV1klLN2cnSnU5XG9zgFekiTcWyZTFpC
2uLN4eiQGluaM=&uniplatform=NZKPT&language=CHS

Zhang, K. S. (2004). An analysis of the historical and cultural background of gender discrim-
ination. *Study and Exploration, 04*, 48–51. https://kns.cnki.net/kcms2/article/abstract?v-
=eK9vp3KgfwuOfk32OJ5qXzBLv3hziaAcbLz3qRWHzUm0n1HEdEkuLQeRD0KFK
PtSq8zK412pzxjcgS477dyoTEEr11zhusozO8UlsPnrsSve848gBR4epppZlF5KdZVW&
uniplatform=NZKPT&language=CHS

Zhao, M., & Zhu, K. (2020). Study on the Legal Governance Mechanism of Employment
Discrimination of College Students in China. *Heilongjiang Researches on Higher Educa-
tion, 10*, 46–50. https://kns.cnki.net/kcms/detail/detail.aspx?doi=10.19903%2Fj.cnki.
cn23-1074%2Fg.2020.04.027

Zhilian Recruitment. (2017). *China Women's Workplace Status Survey Report 2017*. http://
news.fengone.com/d/20170307/592939.html