

Research Hotspot Changes of Employment of University Graduates before and after the COVID-19: Evidence from Bibliometrics Atlas

Li Wu¹, Zhe Wang² and Xing Wang¹

¹Law&Business College of Hubei University of Economics, Wuhan, 430205, China

²Hubei University, Wuhan, 430062, China

Abstract

Since the beginning of 2020, the epidemic situation in COVID-19 has become a major health event affecting the economic and social development at home and abroad. In the post-epidemic era, how to correctly guide college students to establish a scientific concept of employment and career choice has become the top priority of current research. In this study, CiteSpace visualization software was used to map and visually analyze 709 relevant documents on employment of college graduates in the CSSCI database from 2018 to 2021, showing the changes of employment situation of college graduates before and after the COVID-19 epidemic. After we found the epidemic, the phenomenon of "slow employment" of college graduates has become more prominent. However, the state has issued a number of employment policies on employment support to help precise employment, explore multi-directional employment channels and actively promote employment. At the same time, the multiple psychological pressures brought by the epidemic make college students start the psychological defense mechanism. All kinds of influencing factors brought by psychological defense may be one of the reasons that cause college students to evade employment.

Keywords

COVID-19; Bibliometrics; Employment and entrepreneurship; Psychological defense.

1. Introduction

General Secretary Xi Jinping stressed during his inspection in Tsinghua University that "the majority of young people should shoulder the historical mission and strive to become the new generation worthy of the important task of national rejuvenation". What kind of people are trained? Where do the people trained go to the motherland? This is the main content of the employment of college graduates. In recent years, the employment competitiveness of college graduates in our country has become more and more competitive, and the problem of "difficult employment" has become increasingly prominent. In November 2021, the Human and Social Affairs Department of the Ministry of Education reported that the number of college graduates in the 2022 term is expected to exceed 10.76 million, an increase of 1.67 million year-on-year. Since the outbreak of the COVID-19 epidemic in 2020, the country has put forward an important strategic goal of "stabilizing employment and ensuring people's livelihood". Facing the new situation and tasks of employment, college graduates, as one of the important employment groups, stabilize and broaden the employment path of students is the livelihood of the people, and is the main starting point of the employment department in colleges and universities. The outbreak of the epidemic is a major challenge under the severe employment situation with the number of graduates rising in recent years. Terms such as "slow employment" and "slow employment" are beginning to appear. As a public crisis, the COVID-19 epidemic is sudden and unpredictable. We should explore the changes in the employment hot spots of college students

before and after the epidemic, in order to objectively and accurately know the impact of the large-scale public relations crisis on college students' employment and provide evidence.

2. Data Sources and Research Methods

The main data in this paper are from CSSCI database in CNKI, which is authoritative and representative. The COVID-19 epidemic officially broke out in early 2020, so we took this time point as the node, searched "2018-2019 and 2020-2021" as two time periods, and carried out advanced search with the theme of "employment of university students". The retrieval time is November 17, 2021. By browsing the titles, abstracts, key words and other information of the initial documents one by one, non-research documents such as news reports and conference summaries are excluded, among which 383 papers are selected from 2018 to 2019 and 326 papers are selected from 2020 to 2021 as the sample data set of this paper.

CiteSpace software is an information visualization software which is developed based on Java language and citation analysis theory and can measure the literature in a specific field. It helps users to analyze the development and evolution of a certain field and the potential dynamic change trend.

3. Visual Analysis of Changes in Research Hotspots of Employment of University Graduates before and after the Epidemic

3.1. Keywords Co-occurrence Map

In the study and exploration of literature, the key word is a conceptual word that appears frequently in an article or work and plays a decisive role in the problem. By using CiteSpace software to co-locate and analyze the key words in the literature of college students' employment field, we can obtain the research focus that is being paid attention to in this research field more directly and conveniently.

Through CiteSpace keyword co-occurrence analysis on 383 Chinese documents retrieved from 2018 to 2019, the keyword co-occurrence map was obtained. There are a total of 124 nodes and 154 connections in the figure, with a network density of 0.0202. The overall structure is relatively compact. According to the statistics of keyword frequency n , excluding the keywords of "college students" ($N=75$) and "employment" ($N=26$), the total number of occurrences of "employment quality" and "entrepreneurship education" ($N=24$) is the highest, followed by "employability" and "employment guidance" ($N=22$).

Through Citespace keyword co-occurrence analysis on 326 retrieved Chinese documents from 2020 to 2021, the keyword co-occurrence map was obtained. There are a total of 105 nodes and 125 connections in the figure, with a network density of 0.0229. The overall structure is relatively compact. According to the statistics of keyword frequency n , except for the keywords "college students" ($N=41$) and "employment" ($N=13$), which represent the search topic, "employability" and "employment guidance" ($N=21$) have a higher total frequency, while "social capital" and "human capital" ($N=13$) are closely followed.

3.2. Co-occurrence of Keywords Cluster Analysis

Although the key word atlas is clear and explicit, such linkage analysis only involves the surface level. In order to further explore the relationship between keywords, this paper uses CiteSpace software to cluster the CSSCI source journals of college students' employment retrieved by CNKI with keywords.

Firstly, the paper carries out keyword clustering analysis on 383 Chinese documents retrieved from 2018 to 2019. The results show that the clustering effect is good when the modularity = 0.5546 (the better the modularity is between 0.4 and 0.8) and the Silhouette =

0.8832(Silhouette closer the value of silhouette is to 1, the better the clustering effect). Based on the results of cluster calculation, the author draws up a domestic keyword cluster analysis table on college students' employment from 2018 to 2019 (Table 1).

Table 1 Keyword Cluster Analysis from 2018 to 2019

Cluster	Size	Silhouette	Mean year	Top terms
0	23	0.909	2018	Employment and entrepreneurship, rural revitalization, social support
1	13	0.725	2018	Career planning education, entrepreneurship, policies, young talents
2	12	0.88	2018	Entrepreneurship education, personnel training, employment education, subject characteristics
3	11	0.878	2018	Employability, human capital, psychological capital
4	9	0.919	2018	Employment quality, employment satisfaction, slow employment
5	7	0.97	2018	Family background, fair opportunities, educational gains
6	4	0.99	2018	Employment Outlook, Socialist Core Values, Ideological and Political Education in Colleges and Universities
7	4	0.934	2018	"Drift", Employment Orientation, Knowledge Values

As can be seen from Table 1, the first column represents the cluster number, and there are 8 obvious cluster topics in the Chinese literature on college students' employment from 2018 to 2019. The second column is the number of documents included in the corresponding clustering topic, and the third column is the Silhouette value, which represents the effectiveness of the clustering effect. The fourth column is the average year in which the documents appear in the cluster topics, and the fifth column is the keyword with higher frequency in the cluster topics. The cluster topics of Chinese literature are cluster #0 employment and entrepreneurship, cluster #1 career planning education, cluster #2 entrepreneurship education, cluster #3 employability, cluster #4 employment quality, cluster #5 family background, cluster #6 employment outlook, and cluster #7 "drift". The Silhouette values of the eight clustering topics are all close to 1, and the clustering results are highly effective and reliable. Among them, Cluster #0 Employment and Entrepreneurship and Cluster #2 Entrepreneurship Education are all related to entrepreneurship and employment. It can be seen that the state actively encourages entrepreneurship education for college students from 2018 to 2019, and provides more support and policies for entrepreneurship education; Cluster #1 Career Planning Education and Cluster #6 Employment Outlook Talk about Students' Employment Education and Current Employment Outlook; Cluster #3 Employment Ability and Cluster #4 Employment Quality Focus on Students' Self-quality and Employment Feedback in the Employment Process; Cluster #5 Family Background mentions the influencing factors and employment environment of students' employment; Cluster #7 "Drift", "Drift" refers to the fact that college students' knowledge and values gradually show a pragmatic employment-oriented tendency from the pursuit of pure value orientation. The cluster points out the change of college students' employment concept under the background of the new era.

Then, the keyword clustering analysis is carried out on 326 retrieved Chinese documents from 2020 to 2021. The result shows that the modularity is 0.6013 (the modularity is better between 0.4 and 0.8), and the clustering effect is good. Silhouette = 0.874(Silhouette closer the value of Silhouette is to 1, the better the clustering effect). The clustering effect is good. Based on the results of cluster calculation, the author draws up a keyword cluster analysis table (Table 2) on the employment of college students in China from 2020 to 2021.

Table 2. Cluster Analysis of Keywords from 2020 to 2021

Cluster	Size	Silhouette	Top terms
0	14	0.739	Human capital, social capital
1	13	0.938	Slow employment, countermeasures, grass-roots employment
2	12	0.963	Employment quality, promotion policy, full employment, graduates from special groups
3	11	0.844	Employability, Work Fit, Precision Employment
4	9	0.837	Employment guidance for university students from employers and local universities
5	9	0.865	Rural revitalization, employment will, rural college students
6	4	0.954	Entrepreneurship and Employment, Edible Fungi, Industrial Development
7	4	0.977	Employment pressure, psychological pressure, COVID-19 epidemic

As can be seen from Table 2, there are 8 obvious clustering themes in the Chinese literature on college students' employment from 2020 to 2021. The cluster topics of the 8 Chinese literatures are: cluster #0 human capital, cluster #1 slow employment, cluster #2 employment quality, cluster #3 employment ability, cluster #4 employer, cluster #5 rural revitalization, cluster #6 entrepreneurship employment, and cluster #7 employment pressure. Among them, cluster #0 human capital emphasizes the impact of changes in human capital and social capital on graduates' employment under the situation of COVID-19 epidemic. Cluster #1 Slow Employment mentions the current employment phenomenon of college students and the countermeasures and guiding direction adopted by the country aiming at the phenomenon of "slow employment". Cluster #2 Employment Quality and Cluster #3 Employment Capability are still paying attention to the feedback of students' own quality and employment satisfaction in the employment process; Cluster #4 Employers mentioned the responsibilities of employers to help college students find jobs under the COVID-19 epidemic and the synergy between local universities and employers; Cluster #5 Rural Revitalization involves grass-roots employment and national policies. Under the current situation, a series of national policies and measures have combed the clear employment support orientation and provided more opportunities for employment and entrepreneurship; Cluster #6 Entrepreneurial Employment still tells us that entrepreneurship is still a feasible direction for graduates to obtain employment, focusing on different types of industrial development and looking for entrepreneurial opportunities; Cluster #7 Employment Stress Topic talked about the multiple difficulties of employment pressure and psychological pressure brought to students by the graduates' epidemic in COVID-19. Because of the severe epidemic prevention and control factors, it was more difficult for students to apply for jobs during the year.

4. Discussion

4.1. Current Analysis of Employments of College Graduates

Based on the above keywords co-occurrence analysis and cluster analysis, combined with the induction and collation of the representative literature corresponding to the corresponding clusters, the hot topics of employment concept before and after the epidemic can be summarized into the following three aspects:

4.1.1. Students' Perspective: The Epidemic Has Further Highlighted the Slow Employment of College Students

"Slow employment" refers to the phenomenon that college students do not seek employment or pursue further studies immediately after graduation, but suspend their employment by temporarily choosing to study abroad, support education, accompany their parents at home or

prepare for exams repeatedly. The epidemic has caused nearly half of the graduates to have a state of anxiety. It has also caused college students to have a sense of safety, and they tend to pursue stability in their employment tendency. A survey of the employment situation in Shanghai also found that the post-epidemic college students have the characteristics of "low self-efficacy" and "materialistic orientation" in their employment cognition. 72.2% of the college students think the employment situation is grim, and most of them are not confident enough to apply for a job and have no clear plan for their career development. These studies have further pointed out that the problem of slow employment of students is gradually prominent and should be paid attention to in the future.

4.1.2. School Perspective: Continuous Attention to High-quality Employment

In 2017, the State Council's Notice on Printing and Distributing the "13th Five-Year Plan" to Promote Employment explicitly mentioned "to develop more high-quality jobs suitable for college graduates" and to achieve the goal of "steadily expanding the employment scale and further improving the employment quality" by 2020. University employment guidance departments can help college students find jobs suitable for their own development and achieve high-quality employment by understanding the employment situation of the "slow employment" group, giving guidance in classification, making them change their concepts, strengthening the guidance of students' self-analysis of advantages and disadvantages, and finding out their own role in the talent market. By analyzing the employment patterns and group characteristics of graduates from different groups, the employment quality of college students from special groups can be substantially improved.

4.1.3. Social Perspective: More Specific Guidance on Employment and Innovation and Entrepreneurship

Employment is the greatest livelihood of the people, and college graduates are the most important in employment. In the 2020 government work report, the word "employment" appeared 39 times. After the outbreak of the epidemic, General Secretary *** specially gave important instructions on the prevention and control of the epidemic. The State Council, various ministries and local governments have successively issued a series of policies and measures to encourage the employment of college graduates, set up a clear employment support orientation, and do everything possible to speed up the resumption of production and stabilize employment, so as to provide more opportunities for employment and entrepreneurship. It is suggested that we should make good use of the data and information of college students' employment, so as to match their personalized needs with the target positions, and further promote the accuracy of college students' employment.

4.2. College Graduates "Difficult Employment" Psychological Reasons

The COVID-19 epidemic is a major public health emergency on a global scale. The higher the degree of harm caused by public events, the more severe the individual's stimulated stress response. Hans, the "father of stress syndrome", believes that stress, as a biological response to environmental stimuli, can be caused by many different needs imposed on the body, and these responses are non-specific, i.e. the generation of "general adaptation syndrome", which includes three stages: alarming stage, resistance stage and exhaustion stage. From this we can infer that in the period after the outbreak, individuals are in the period of resistance to GAS and are very sensitive to the external environment and are afraid of contact with the outside world. Compared with the external social environment, the campus is more like a protector, which can make college students feel safe. Therefore, more students refuse to work.

5. Summary and Suggestions

In this study, CiteSpace visualization software is used to map and visually analyze 709 relevant documents on employment of college graduates in the CSSCI database from 2018 to 2021, and the following conclusions are drawn.

First, the epidemic has further highlighted the slow employment of college students. The COVID-19 epidemic has led to a significant oversupply of talents in the labor and employment market. Facing the realistic factors and the psychological anxiety factors brought by the epidemic risk, more graduates choose "slow employment". The majority of students do not have a clear understanding of the employment situation, so in the follow-up study, students should be guided to establish the concept of "employment first and then employment". The combination of ideal and faith, ideological and political education and employment concept education will guide students to integrate their career choices into national development and social construction, and establish scientific employment and talent outlook.

Second, the state helps precise employment and opens up multi-directional employment channels. Key words such as "employment and entrepreneurship", "grass-roots employment", "rural revitalization" and "new media" have appeared many times in the literature. The state provides a number of supportive policies in employment and entrepreneurship, encouraging college students to give full play to their professional talents to explore new ways of employment, and at the same time, to create wealth while promoting the breeding of jobs. Therefore, the school's employment guidance center and counselors should adopt accurate employment and entrepreneurship guidance and services, encourage students to go to the grassroots for employment, help the rural revitalization to open up multi-directional employment channels, and improve the quality and satisfaction of employment.

Third, the psychological pressure brought by the epidemic has become one of the reasons why college students evade employment. In the post-epidemic era, domestic outbreaks are always sporadic, which not only increases the difficulties of graduates in finding jobs. At the same time, these stresses will naturally be accompanied by escape behavior. Various influencing factors caused by psychological defense may become one of the reasons why college students evade employment. It is worth exploring and practicing in colleges and universities to pay attention to the multiple stressors of graduates in their graduation grades and provide precise psychological support for students. At the same time, it is also worth paying attention to how to enhance the education of mental health literacy, pressure resistance and mentality adjustment in non-graduate grades.

Acknowledgments

This research is supported by the the college-level scientific research project of the Law & Business College of Hubei University of Economics (project number: 2021K10) & the 2021 Hubei university students' innovation and entrepreneurship training program project "investigation, research, analysis and intervention countermeasures of university students' employment avoidance psychology in the post-epidemic era" (project number: S202110512043).

References

- [1] The Ministry of Education, the Ministry of Human Resources and Social Security, the first ten million graduates in the 2022 Session, [N], China Youth Daily, November 22, 2021(17):58-60.
- [2] Chen Yue, Chen Chaomei, Liu Zeyuan, Hu Zhigang, Wang Xianwen. Methodological Function of CiteSpace Knowledge Map [J]. Scientific Research, 2015(2):242-253.

- [3] Li Xiumei, Xiang Dunye, Gui Yong. Between Materialism and Post-Materialism-Changes in College Students' Employment Attitudes in the Post-epidemic Era [J]. Culture, 2021(01):120-129+159.
- [4] Notice of the State Council on Issuing the "13th Five-Year Plan" to Promote Employment [J]. State Council Bulletin of the People's Republic of China, 2017(06):65-82.
- [5] The Ministry of Education on the response to the COVID-19 epidemic to do a good job in the 2020 session of the national college graduates' employment and entrepreneurship notice [J]. The People's Republic of China Ministry of Education Bulletin, 2020(03):27-30.
- [6] Wei Youhua, & Tang Shengqin. (1998). Several major stress theoretical models and their evaluation. Psychological Science (05), 441-444.