

A CiteSpace-Based Analysis of the Evolution of Chinese College Students' Employment Values (1992-2024)

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Abstract: Using CiteSpace literature measurement software as a tool, this paper analyzes literatures on college students' employment values from the "Core Journals of Peking University" and "CSSCI" sources in China National Knowledge Infrastructure (CNKI). The results show that the number of published papers is large, with the earliest appearance in 1992. The number of papers has advanced in a wavy pattern until 2024, with the highest peak occurring in 2009-2010. There are many authors and institutions publishing papers, but the cooperation among them is limited. The research subjects mainly focus on vocational college students and undergraduates, and the research hotspots include grassroots employment, human capital, social capital, and employment ability. The research content is divided into three aspects: changes in employment values, influencing factors of employment values, and guidance of employment values.

Keywords: CiteSpace; employment value; career choice value; Marxist view of career choice; delayed employment

1. Introduction

The Third Plenary Session of the 20th Central Committee of the Communist Party of China emphasized the need to improve the employment priority policy. Chinese leaders pointed out that the employment of young people such as college graduates should be given top priority, and young people should be encouraged to engage in key fields, industries, urban and rural grassroots, and small and medium-sized enterprises for employment and entrepreneurship.

The Information Center of the Ministry of Human Resources and Social Security pointed out in the "2024 Survey Report on the Employability of College Students" that the proportion of self-employed and delayed employment among the 2024 graduates has increased, and they continue to seek stability. However, the progress of employment for economics and management graduates has decreased compared to the same period last year. Under the complex international situation and significant downward pressure on the economy, employment competition has intensified, showing a certain convergence phenomenon, such as the "certification fever", "postgraduate entrance examination fever", "civil service examination fever", "civil service examination fever", etc., which has attracted widespread attention from society.

The employment choices and behaviors of college students are guided by the "invisible hand" of employment values. Employment values refer to the views, attitudes, and behaviors exhibited by college students during the employment process (including employment motivation, employment orientation, goal expectations, employment choice scope, employment channels, and employment methods, etc.). It is the main factor affecting graduates' career choices and employment [1]. Existing literature has conducted in-depth explorations of employment values among college graduates, yielding a substantial body of research findings. Through these research results, can we discover the development trend of employment values among college students? How do college students' subjective values interact with objective external conditions? This article is based on CiteSpace bibliometric software for systematic analysis, providing necessary references for promoting related research.

2. Research methods

CiteSpace is a knowledge visualization software developed by Professor Chen Chaomei and his team. It is capable of analyzing vast amounts of data resources, providing functions such as collaboration mapping, co-occurrence mapping, and burst term detection. The software reveals the structure, patterns, and distribution of knowledge within scientific literature, making it a highly influential analytical tool. This paper employs the China National Knowledge Infrastructure (CNKI) as its primary data source. Using keywords including employment values, career orientation, employment intention, job choice, and delayed employment, this paper conducted an advanced search by inputting the following expression in the "Theme" field: (employment value + career choice value + employment intention + career choice + delayed employment) * (university students + graduates + vocational college students + undergraduates + postgraduates + PhD candidates). All parentheses were entered in half-width format, with single-byte spaces preceding and following both "+" and "*" operators. A total of 649 articles were retrieved from 1992 to 2024, and 615 valid articles were determined after removing book reviews, work summaries, and low relevance articles. These 615 articles were exported in Refworks format and named "download_01.txt" and "download_02.txt" respectively. The data was then processed using CiteSpace to generate analyzable datasets before conducting the analysis.

3. Research status

To understand the research situation in this field, a bibliometric analysis was conducted from three aspects: publication volume, authors, and research institutions.

3.1 Number of publications

Since the emergence of research on the employment values of college students in 1992, the number has shown a wave like trend, with three peaks in 2003, 2009-2010, and 2023. As shown in Figure 1, in 1992, Yuan Guili published "Updating Career Perspectives in the Face of New Situations" in "Education and Vocation" to study the career psychology of vocational school students. In the first decade thereafter, the number of articles on the survey and guidance of college students' career views slowly increased, showing a gentle wavy trend. The year 2003 marked the first graduation cycle of undergraduate students after China's higher education expansion. The employment policy of "two-way selection and autonomous employment" (a policy allowing mutual choice between graduates and employers) was fully implemented, and the problem of difficult employment became apparent. There were 17 research papers on employment values. As the scale of higher education gradually expands and enters the stage of massification, the problem of difficult employment has become more prominent. The number of articles on employment values research has sharply increased, reaching a peak of 46 articles in 2009-2010. Since 2011, the number of research articles has decreased but the popularity has remained, indicating that the wave period with the largest fluctuation in the number of articles published in the second decade has been completed. In 2020, the COVID-19 broke out, and college students' employment values showed new changes. In 2023, there was a peak in the number of papers issued, which was 31. In the past eight years, there was the third wave trend with a large amplitude. As is shown in Figure 1.



Figure 1. Distribution of annual publication volume on college students' employment values

3.2 Author of the post

This paper using CiteSpace to analyze the authorship of the published articles, a total of 608 nodes and 290 connections were displayed, indicating that there were 608 authors researching this topic and

forming 290 collaborative networks. The network density was 0.0016, and the author centrality was zero, indicating that the authors were mostly working independently and the cooperation density was low. The authors with more than 3 publications (only the first authors are discussed here) were Yue Changjun (4 articles) and Zhou Junyu (3 articles). Yue Changjun's research focuses on college students' employment sector preferences, geographical mobility patterns, and the evolving trends in graduates' career perceptions. Zhou Junyu's work examines empirical analyses of graduate employment attitudes within China's dual-economy framework.

3.3 Research institutions

This paper using CiteSpace to analyze the research institutions, a total of 547 nodes and 177 connections were displayed, with a network density of 0.0012, indicating that there were 547 institutions participating in the study, forming a collaborative network of 177 institutions. The research institutions with the highest number of papers are the School of Education of Peking University/Institute of Educational Economics (18), the Institute of Sociology of the Chinese Academy of Social Sciences (4), the Department of Economics of the China Youth Political College (3), and the School of Labor and Human Affairs of Renmin University of China (3). It can be seen that the main research subjects are higher education institutions, with disciplines such as educational economics, sociology, and public management dominating the research. The influential research institutes are concentrated in Beijing, mainly the School of Education/Institute of Educational Economics at Peking University. Overall, there is not much cooperation between research institutions and the intensity of academic exchanges is insufficient.

4. Research hotspots

This paper performed bibliometric analysis of keyword co-occurrence, clustering, and bursts to map the domain's research landscape.

4.1 Research hotspots reflected by keyword co-occurrence

Table 1. The top 20 keywords of college students' employment values

Order number	Frequency	Centrality	Particular year	Keywords
1	90	0.47	1999	university student
2	64	0.35	1999	obtain employment
3	42	0.17	2000	career choice value
4	30	0.11	2003	employment guidance
5	21	0.08	2004	career choice
6	21	0.16	2008	employment intention
7	20	0.08	2010	influencing factor
8	19	0.05	2001	countermeasures
9	19	0.07	2002	graduate
10	16	0.06	2019	delayed employment
11	12	0.02	1999	career choice
12	12	0.05	2009	medical students
13	12	0.05	1999	colleges and universities
14	12	0.1	2008	higher vocational school
15	10	0.01	2009	grassroots employment
16	10	0.02	2005	employment value
17	10	0.06	2007	human capital
18	7	0.01	2009	employability
19	7	0.02	2015	quality of employment
20	6	0.01	2006	occupational guidance

The presence of different keywords in the same article indicates that there is a close relationship between the keywords. The stronger the co-occurrence links between a given keyword and other keywords, the greater its importance within the research domain, as reflected by its higher betweenness centrality score. Keyword co-occurrence analysis was performed using CiteSpace, with the top 20 high-frequency keywords presented in Table 1. In addition to keywords related to the same topic and those used in search terms, popular keywords include employment guidance, influencing factors,

countermeasures, medical students, grassroots employment, human capital, employment ability, employment quality, career guidance, etc. It can be seen that the research focuses on vocational college students and undergraduate students, with relatively less research on master's and doctoral candidates. Grassroots employment is an important research field, with a focus on factors affecting employment values such as human capital and employability. Research on countermeasures such as employment guidance and career guidance is a key focus. As is shown in Table 1.

4.2 Research content reflected by keyword clustering

Keywords with similar or identical meanings can be clustered together to form clusters, with cluster labels represented by "# numbers". The smaller the number in the clustering label, the higher the discussion heat, for example, # 0 is the most popular and largest cluster. Using CiteSpace for keyword clustering analysis (using the default LLR algorithm), the modularity (Q value) of the clustering is 0.6427, which is greater than 0.3, indicating significant clustering structure. The mean silhouette (S value) is 0.8893, which is greater than 0.7, indicating high efficiency of the clustering. A total of 22 clusters were obtained, and the first 10 clusters are shown in Table 2. Except for cluster # 3 on social capital, the other clusters overlap with hot keywords. In addition to the research hotspots reflected by keywords, the impact of social capital on the employment values of college students is an important research topic. As is shown in Table 2.

Table 2. Top ten clusters of college students' employment values

Cluster number	Cluster labels	Main clustering tag words
#0	college students	college students, career choices, the financial crisis
#1	career choice value	career choice value, career guidance, career orientation
#2	employment intention	employment intention, labor market, college students
#3	social capital	social capital, delayed employment, family background
#4	obtain employment	obtain employment, higher vocational students, higher education
#5	graduates	graduates, colleges and universities, employment services
#6	influencing factors	influencing factors, medical students, rural employment
#7	countermeasures	countermeasures , causative factors, employment difficulties
#8	career choices	career choices, diversification, medical disputes
#9	vocational colleges	vocational colleges, career education, corporate culture

4.3 Research hotspots reflected by keyword emergence at specific times

Based on the bold lines in the keyword outbreak graph, keywords with outstanding performance at specific times can be identified. Using CiteSpace for keyword emergence analysis, "employment" emerged from 2003 to 2005 with an intensity of 3.84, reflecting the attention to graduate employment issues during higher education's transition to massification. The concept of "career choice" emerged from 2007 to 2012, with an intensity of 5.82, reflecting a deeper research on employment choices under the influence of the continued expansion of higher education scale and financial crisis. National employment and entrepreneurship policies, along with grassroots employment initiatives, provide graduates with more diverse career options, making the guidance of career values particularly crucial. "Delayed employment" emerged between 2019-2024 with a prominence score of 7.73, reflecting the dual challenges of quantity and quality in graduate employment as higher education reached universal access. Amid COVID-19 and economic downturn pressures, university students increasingly prioritized job stability, making phenomena like delayed employment particularly pronounced.

Through keyword co-occurrence, clustering, and emergence, research in this field can be divided into three aspects: changes in college students' employment values (including cluster # 0 college students, # 1 career choice value), factors affecting employment values (including cluster # 2 employment intention, # 3 social capital, # 6 influencing factors, # 8 career choices), and guidance on employment values (including cluster # 4 obtain employment, # 5 graduates, # 7 countermeasures, # 8 career choices, # 9 vocational colleges). By studying clustering and core literature, the research content can be further presented.

5. Research content

5.1 Changes in employment values

Employment values are commonly used in research, including terms such as career choice value, employment intention, and employment choice. Research suggests that the transformation of college students' employment values is manifested as the rise of subjectivity [2], from singularity to diversification and then to internalization [3]. If individualism and collectivism coexist in the employment values of college students, then with the changes in national employment policies, the trend of employment values will transition from a greater proportion of collectivism to a greater proportion of individualism.

Individualism is first manifested in considering individual needs more in employment behavior, reflecting rational choices of individuals, such as focusing on salary, valuing development space, paying attention to personal interests, and choosing advantageous employment areas. It has been a key focus of research on employment values since the 1990s. In the 1990s, young students no longer pursued "fame" and paid more attention to "practical benefits" [4]. In the mid to late 1990s, this was reflected in the strengthening of self-awareness, prominent self centeredness, emphasis on effectiveness and affordability [5]. Practicality and utilitarianism are becoming increasingly clear, and are highly favored by foreign-funded enterprises, financial institutions, and other units. After the 20th century, the pursuit of interests became more tangible, subject consciousness developed towards the "self" aspect, and employment choices became diversified[6]. In 2008, career development and employment guidance courses for college students became a public course in universities, further enhancing their awareness of career planning. In the new era, employment values based on individual self centeredness have become the primary value consideration[7]. Individualism also manifests as not immediately seeking employment after graduation, but rather a certain period of delay, known as delayed employment choices. The rising prevalence of NEET (Not in Education, Employment or Training) youth and gap-year phenomena reflects a paradigm shift in employment values - from limited emphasis on career stability pre-COVID-19 to its current status as the foremost post-pandemic priority[8].

5.2 Factors influencing employment values

The research on the influencing factors of employment values often focuses on empirical analysis of a certain group, usually through quantitative research, semi-structured interviews, etc. The formation of career orientation is the result of a series of factors working together.

From the perspective of social institutional factors, there is binary segmentation and imbalance in the labor market, and college students expect to find employment in the main labor market. The socio-economic environment has a significant impact on their career awareness and behavior, and the institutional segmentation of the labor market is the main reason for the formation of college students' career orientation and the difficulty of employment for college graduates [9]. Personal and family factors such as economic capital, political capital, psychological capital, and intimate relationships significantly affect the employment choices of college students in both internal and external sectors of the system [10]. Policy incentives may enhance college students' willingness to engage in grassroots employment to a certain degree; however, their commitment to long-term service in these areas remains weak. From an individual perspective, factors such as family capital, social capital, and human capital have a direct impact on the employment values of college students. This is reflected in the fact that the more advantageous family capital, social capital, and human capital, the more positive the impact is on urban employment, further education, political willingness, resources, and opportunities in relatively better employment areas. Employability constitutes a critical determinant in graduates' delayed employment decisions, with higher employability individuals demonstrating stronger propensity for voluntary career pauses[11]. From the perspective of the times, as the dividend winners of China's reform and the improvement of family social capital, college students pay more attention to their personal feelings, personal autonomy and personal development in the process of career selection [12]. Internet public opinion will mislead college students' salary treatment, employment preference and workplace cognition [13].

5.3 Guidance on employment values

The formation of employment values is the result of the interaction of multiple factors, and the guidance of values also requires the collaboration of multiple subjects to take effect.

The formation of correct employment values is first and foremost the responsibility of college students themselves, and the answer can be found in Marxist view of career choice. Marx posited that youth should judiciously deliberate when choosing vocations, opting for positions most suited to their capacities that optimally elevate both self and society. Specifically, this entails selecting occupations that sustain enduring passion and demonstrate competence based on socioeconomic conditions, guided by the cardinal principles of human welfare and self-perfection[14]. From the perspective of universities, it is necessary for various relevant entities to collaborate and form a joint force, such as ideological and political education, psychological education, employment guidance courses, and employment guidance services. It is necessary to grasp economic needs, nurture their negative psychology in job seeking adversity, and establish a sense of employment mission and self rescue. Incorporate the career planning of college students into the theoretical system construction of ideological and political work in universities, and strengthen the publicity and education of ideological and political work in universities. Universities advancing career value education must strengthen four key platforms: classroom instruction, student organizations, residential culture, and digital outreach—establishing an integrated educational matrix. In short, it is necessary to cultivate diverse value identities, broaden the social horizons of young people, and enhance their career adaptability [15].

6. Conclusion and future prospects

This paper relies on Citespace bibliometric software to search for journal articles from the "Peking University Core" and "CSSCI" sources on China National Knowledge Infrastructure (CNKI). From 1992 to 2024, the research status and content of college students' employment values were analyzed. The research on employment values in the 1990s was in its infancy, but quickly developed into a hot topic after the 20th century. It has completed three waves of varying amplitudes, with the highest peak appearing in 2009-2010. Overall, the collaboration density between authors and research institutions is relatively low, with education economics, sociology, and public management disciplines dominating the research. The research focuses on vocational college students and undergraduate students, with factors such as grassroots employment and employment values such as human capital, social capital, and employability being the research hotspots. The research content can be divided into three main aspects: changes in employment values, influencing factors, and guidance. The trend of changes in employment values is transitioning from a greater emphasis on collectivism to a greater emphasis on individualism. When choosing employment, individual needs are mainly considered, and there is a phenomenon of delayed employment. Research methods are mostly based on national, provincial, or university samples or representative individual samples, and quantitative and qualitative studies are conducted on the causal relationship between social factors, policy factors, individual factors, and era factors and college students' employment values. Developing a proper employment value system is first and foremost the duty of college students, who can seek guidance from Marxist view of career choice, while universities and related entities must also work together to facilitate this process.

Since the 1990s, with the changes in employment policies and the rise of the subjectivity of college students in employment, the employment values of college students have become an important research field. Whether it is social factors, policy factors, individual factors, or historical factors, they will all be rooted in the employment values of college students, and thus affect their employment behavior. Therefore, it is necessary to constantly sort out the historical manifestations of employment values and their relationship with employment behavior. Due to the numerous and complex influencing factors, as well as strong subjectivity, it is very difficult to sort out the mechanism of the impact on employment values. Existing research attempts to describe phenomena, analyze reasons, and reveal employment values from different perspectives or angles are beneficial attempts. It is still inevitable that in different studies, there will be descriptions of values that differ from contemporary perspectives, and there is a lack of practical implementation plans for guiding values. Currently, amid social transformation and shifting values, it is imperative to innovate research methodologies and perspectives on college students' employment values. This entails in-depth exploration, data extraction, and case studies of related issues to lay a solid foundation for further guiding the development of proper employment values.

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