

College Employment Problem Based on Stable Matching Theory

Peng Luan^{1,a,*}

¹Taiyuan University of Science and Technology 030024, P.R. CHINA
a. lp020325@163.com
*corresponding author

Abstract: Based on the investigation and analysis of the employment psychological status of college graduates in China, this paper puts forward some measures and suggestions to alleviate the severe employment pressure. At the same time, it also provides the theoretical basis and reference materials for related researchers. In recent years, recruiting units have paid more and more attention to the relationship between graduates and employers and the roles played by both parties. It is found that the imbalance between supply and demand in China's labor market is the main factor affecting students' participation in civil service examinations, teachers' academic qualifications and degree certificate system reform. Among them, the employment and working environment of graduates are more influential, while for employers, the biggest impact is the gap between the positions provided by enterprises and social needs.

Keywords: employment, supply and demand, college graduates

1. Introduction

With the continuous expansion of undergraduate enrollment, the employment problem of graduates has gradually become prominent. As a talent training base, colleges and universities are one of the work contents that the government and relevant departments attach great importance to. However, under the increasingly severe employment situation, how to effectively alleviate the difficulty of graduation of college students has become a major problem to be solved: on the one hand, whether the comprehensive quality of college students can be improved and whether their future career development prospects are broad, on the other hand, the solution of employment problems requires the joint efforts of society, schools and individuals. In today's Internet age, as the number of graduates continues to increase, the supply of talent in domestic colleges and universities is far greater than the market demand for talent. Therefore, it is particularly important to study the various influencing factors and corresponding countermeasures in the process of job hunting under the realistic situation that college students face after graduation [1,2].

The role of employment mainly has the following aspects: (1) Promote economic growth. In the process of job hunting for college graduates, their labor remuneration is the most direct and effective way. (2) Increase social wealth. The employment problem is a severe reality facing our country. Solving the problem of employment of college graduates can create a large number of human resources for the country. With the continuous expansion of higher education and the number of college students, the number of students in colleges and universities is increasing year by year, and

the requirements of employers are increasing. At the same time, it also brings certain pressure to enterprises: on the one hand, it increases the cost of recruitment and causes excessive social burden; On the other hand, due to the oversupply of the labor market in our country, the employment situation is not optimistic. (3) Promote the progress of social civilization. The employment issue can be said to be a political issue of a country, region and nation. It is a measure of the level of development in various aspects, and it also reflects people's quality of life and spiritual pursuits [3].

Employment is the foundation of people's livelihood, and the important position of employment is reflected in college graduates. In my country's colleges and universities, a large number of fresh graduates enter the labor force. With the improvement of national economic strength and comprehensive national strength, the continuous development and improvement of higher education and the reform of the education system, the enrollment scale of colleges and universities has expanded, and the enrollment scale is uneven. From another perspective, there is an insufficient supply of graduates, and oversupply leads to the formation of a surplus of talent and so on. The solution to employment problems is an indispensable link to promoting economic and social development, realizing educational fairness and justice, and building a harmonious campus system.

In recent years, my country's higher education reform has continued to deepen, the enrollment scale of colleges and universities has increased year by year, and the number of graduates has shown a significant upward trend. In this context, new requirements have also been created for the choice of employment. The first is to have a clear goal. That is, according to their abilities and interests to determine whether to apply; Secondly, job seekers can only work in enterprises after improving their quality or skills; Thirdly, it is necessary to have certain practical experience and relevant professional knowledge reserves to be able to meet the job requirements and provide corresponding services for employers. Finally, it is necessary to have certain social experience and relevant employment information. With the continuous improvement of my country's market economy system, the enrollment scale of colleges and universities is increasing year by year, but due to various factors, the supply and demand of graduates are unbalanced. According to the Ministry of Human Resources and Social Security issued the 2016 national college graduates statistics report shows: in all provinces (municipalities, autonomous regions) only Zhejiang, Jiangsu and other places meet the requirements of college students and above students accounted for more than 30%; Guangdong reached about 70%; Yunnan and Guangxi are less than 80% to 25%. The current employment situation in my country's colleges and universities is not optimistic, and the employment situation is severe. Some college graduates are unable to meet the job requirements due to a lack of work experience in the job search process. With the continuous deepening of my country's education system reform, the enrollment scale of colleges and universities is increasing year by year, and the increase in the number of graduates makes the employment problem increasingly serious. Due to objective conditions, limitations of their abilities, and related policies, some students cannot adapt to the job requirements. In this case, many college students can only choose to quit the university door to seek a better job to maintain their knowledge and professional skills during school; Some outstanding talents are immersed in the campus and are unwilling to go to other enterprises or societies for further study. This is also one of the important reasons for the difficulty in obtaining employment for college graduates in our country [4].

The employment problem of college graduates is caused by objective factors and reasons [5]. On the subjective side, it is mainly due to the high expectations of society for college students and the imperfect school system. There are also some undesirable phenomena in the objective environment: First, some employers one-sidedly pursue high salary levels and ignore whether their workability and technical content match and whether they can meet the job requirements; Second, the employment guidance service system for college graduates is not sound enough, and it lacks a scientific employment psychological evaluation mechanism and corresponding incentive measures. In reality,

many graduates do not have adequate psychological preparation before employment, or they are not clear about their majors and the requirements of employers, which makes it difficult to find a job after graduation. In addition, there is a part of the reason that the college admission system is unreasonable and the management method is backward. Since the implementation of the recruitment system in our country, the practice of "strict" has continued, which makes many schools adopt tentative interview methods to understand the comprehensive quality and ability level of applicants to determine the entry qualification standards. Today, when the degree of talent marketization is relatively high, this method can no longer meet the needs of the current job market. Therefore, colleges and universities must establish a scientific and reasonable employment system that conforms to the actual situation and is suitable for the development of the school. There are still problems with employment guidance in colleges and universities. First of all, there is a lack of attention to the psychological needs of job seekers. Many graduates, especially those who have just entered the society or professional technical school and have not strong learning ability and narrative structure of knowledge, may choose to continue their studies or directly engage in positions that match their interests after graduation; Secondly, for employers, they pay more attention to whether they can find satisfactory conditions for their development rather than whether they can provide them with employment opportunities and salary treatment. In actual work, colleges and universities often only pay attention to the investigation of the employability of the corresponding graduates, ignoring the comprehensive qualities of these students, and cannot provide a good development space for such talents. Finally, when recruiting, colleges and universities often only pay attention to the applicant's academic qualifications, ignoring whether they have job-hunting experience. Many colleges and universities did not investigate factors such as the comprehensive quality and ability level of job seekers when recruiting. In addition, there are problems with employment guidance in colleges and universities. First of all, not enough attention is paid to the psychological needs of job seekers. At present, most colleges and universities in our country have not set up special ideological and political education courses and professional compulsory courses to help students establish a correct and rational understanding of themselves; Secondly, there is a lack of corresponding systematic analysis and research on graduates' career planning and development direction and other related content, and formulate a practical and effective employment guidance program that meets the requirements of the actual situation and is admitted to the unit. However, due to the incomplete knowledge system and incomplete understanding of this aspect, colleges and universities cannot meet the needs of enterprises [6,7].

2. The Model

Suppose there are six students A, B, C, D, E, F and five enterprises a, b, c, d, e, students according to the enterprise salary, working hours, promotion mechanism and other factors list their preference list, enterprises according to the students' undergraduate degree, academic performance, internship experience and other factors list their preference list, their demand preference list order is as follows:

Table 1: Student and business preference table.

Students	Students' preference	Firms	Firms' preference
A	d>c>a>e>b	a	F>B>C>E>D
B	d>a>c>b>e	b	B>D>C>E>A>F
C	a>b>c>d>e	c	B>E>A>D>C>F
D	c>a>e>b>d	d	F>A>D>E>C>B
E	a>b>c>d>e	e	A>F>C>D>E>B
F	a>e>b>c>d		

For the above cases, the Gale-Shapely matching algorithm is performed as follows:

2.1. Students Should Send Resumes to the Enterprise

In the first round of the algorithm, enterprise A received resumes from students C, E and F, enterprise b did not receive resumes, c enterprise received resumes from classmate D, d enterprise received resumes from students A and B, and e enterprise did not receive resumes; at this time, enterprise A accepted student F, rejected classmate C and E, C enterprise accepted classmate D, and enterprise d accepted classmate A.

In the second round of the algorithm, student B was rejected for sending resumes to enterprise A (because of preference of enterprise A $F > B$), students C and E simultaneously sent resumes to enterprise b, b accepted enterprise C (because of preference of b enterprise $C > E$); at this time, enterprise A accepted student F, b accepted student C, c accepted D and d accepted student A.

In the third round of the algorithm, students B and E sent resumes to enterprise c, B was accepted, and students D and E were rejected by Company c (because Company c preferred $B > E > D$); at this time, enterprise A accepted Student F, enterprise b accepted Student C, enterprise C accepted Student B, and enterprise d accepted Student A.

In the fourth round of the algorithm, D was resumed to e enterprise; E student was rejected to d enterprise (because d enterprise preferred $A > E$), enterprise A accepted F, b enterprise accepted C, c enterprise accepted B, d enterprise accepted A, and e enterprise accepted D.

In the fifth round of the algorithm, E student was refused to send a resume to e enterprise (because E enterprise preferred $D > E$), and E student quit.

So far, Student E did not get the offer, Student A got a job in enterprise d, Student B got a job in enterprise c, Student C got a job in enterprise b, Student D got a job in enterprise e, and Student F got the job in enterprise A, completing the match.

Final matching results and sum for

A B C D E F
d c b e E a

2.2. The Enterprise Sends Entry Invitations to the Students

And so on, the final stable matching result is

A B C D E F
d c e b E a

Colleges and universities should constantly improve the employment service system and provide more employment information for graduates, such as establishing a student management information system and regularly publishing relevant recruitment news. Actively carry out activities such as school-enterprise cooperation and exchange meetings. These measures improve the current disharmony in society. First of all, we must strengthen the ideological and political education and moral quality training of graduates. Firstly, the school can organize some campus speech contests, debate contests and excellent enterprise calendars, so that college students can understand the employment situation more deeply and enhance their sense of competition. (2) Schools should attach importance to the health education and guidance of graduates' employment psychology, provide active and effective guidance to students with job-seeking intentions, enhance their sense of competition, and improve their interpersonal skills; Finally, colleges and universities should strengthen publicity when conducting job fairs: (1) Publish some relevant information through multiple channels, such as basic information such as employers, positions, and specific work requirements and precautions. For example, it can let companies know which positions are suitable for talent demand. At the same time, it is necessary to introduce to graduates which occupations they

want to engage in, and so on. (2) Schools can organize lectures, debates and other forms to let graduates have a certain understanding of their job prospects and enhance their sense of competition. At the same time, it is necessary to actively carry out psychological counseling, career planning guidance and other activities. (3) Schools should strengthen their ties with employers and keep abreast of their talent needs on time. For example, some recruitment news can be published through campus job fairs, employment information platforms, etc. (4) Schools should strengthen contact with employers, understand the needs of enterprises, and help students choose suitable positions.

Colleges and universities should make rational use of talents to achieve employment. First of all, colleges and universities should formulate their teaching plans according to their actual conditions and development needs. The curriculum is not only based on theoretical knowledge courses. It is also necessary to adjust and improve the profession by market demand; Secondly, the school can also regularly organize students to visit other well-known enterprises, internships and other activities to provide graduates with more practical opportunities; Finally, we can understand social human resource information and employment dynamics through the network platform, to promote them to better serve their development and progress, and make their teaching work more targeted and practical.

Colleges and universities should pay attention to their training and raise teachers' and students' awareness of the importance of employment guidance. First of all, schools should regularly organize job fairs for publicity; The second is to strengthen communication between school leaders and parents. On campus, class and other aspects of more efforts to expand the influence as the goal "Sunshine Project" project in practice continue to carry out in-depth to promote the overall development of graduates as the theme activities: on the one hand, let more people understand the benefits of college personnel training for personal growth and social development is of great significance. On the other hand, we must actively guide students to establish a correct concept of employment and improve their overall quality and ability; Finally, we must strengthen the employment guidance of students, so that more graduates can understand their future development direction.

The quality of college graduates determines the quality of employment to a large extent. Therefore, improving students' comprehensive ability is an effective means to improve their overall employment level and promote social development. First of all, we must strengthen the training of graduates' knowledge, ideological and moral aspects and other professional skills. Secondly, we must strengthen our psychological endurance. Finally, we should also pay attention to the problem of difficulty in finding a job after graduation and solve it. At the same time, you can also participate in various job fairs to understand what kind of talent you have. Is it suitable to engage in more industries, to improve their competitiveness? Colleges and universities should pay attention to students' comprehensive quality training and ability development in employment guidance, strengthen students' employment awareness, help them establish a correct view of career selection, and cultivate themselves to have an accurate positioning and understanding of the industry they are engaged in. In employment guidance, the actual ability and quality of graduates should be used as the basis for a comprehensive evaluation, and excellent talents who are suitable for their development direction, have certain competitiveness and meet the needs of society should be selected.

3. Conclusion

Based on the theory of stable matching, this paper proposes that the supply of jobs is the main factor affecting the quality of graduates' career choices and their future development prospects. When investigating the employment situation of college students, it is found that: First, college students have blind thoughts. For example, to find a job, some students do not hesitate to give up their majors to engage in the knowledge that does not match their abilities or is not suitable for the majors they teach; Second, the current social and economic situation in China is grim, and the prominent contradiction between talent supply and demand has seriously affected the quality of graduates' job

selection and their development prospects. Third, employment guidance for college graduates is not in place. Fourth, the factors that have an important impact on social stability are: the government's policy support is not enough, the implementation of relevant departments needs to be improved, and schools and employers lack communication mechanisms. Fifth, The current economic growth situation in my country is not optimistic, leading to overcapacity in some areas. After the sixth country has introduced a series of macro-control measures that stimulate domestic demand and stimulate investment demand, the domestic economic development is facing a new round of transformation and upgrading, expanding effective supply, and optimizing industrial structure adjustment. Among the three major tasks, the problem of employment difficulties has been solved. Therefore, under the increasingly severe employment problem, colleges and universities should actively change their concepts, adjust teaching methods and enhance their comprehensive strength to solve the difficult problem of graduates.

With the development of society, the difficulty of obtaining employment for college graduates has become a problem that cannot be ignored. Although the government has issued many policies to encourage college students to start their businesses and teach the children of poor families to go to school and complete their studies smoothly. However, due to various factors and national laws and regulations, students can not find a suitable job in time after graduation, so the school should continue to improve the social security system and preferential policies to attract more outstanding talents to teach or give priority to solving the difficult employment situation of graduates; In addition, it can also strengthen the release of recruitment information for employers and establish a corresponding punishment mechanism to restrain the improper behavior of colleges and universities, thereby ensuring the quality of graduate employment. In addition, after college students graduate, the school should strengthen their ideological education and improve students' ability to distinguish job information. For example, understand the career development prospects, their professional knowledge and skills and hobbies and other content; At the same time, some related debate classes or lectures can be carried out so that more students can learn from the combination of theory and practice, and improve their quality in all aspects in actual combat exercises, and so on. In short, the severe employment situation in the future society is an inevitable phenomenon, and the employment problem is an important factor affecting the choice of college graduates. Therefore, schools should strengthen the ideological education of graduates, improve students' ability to distinguish job information, and improve their professional quality. In short, the stable matching theory is an important theoretical basis for college employment guidance, and it has a very positive effect on solving practical problems. In today's rapid social development, we should continue to improve relevant systems and mechanisms, innovate systems and methods, and strengthen the construction of graduates' employment psychology to effectively guide and improve. At the same time, it is necessary to investigate and study various situations that appear or may appear in the new era and formulate corresponding countermeasures.

References

- [1] Li, T. , & Zhang, J. . (2010). *What determines employment opportunity for college graduates in china after higher education reform?*. *China Economic Review*, 21(1), 38-50.
- [2] Beffy, M. , D Fougère, & Maurel, A. . (2013). *The effect of college employment on graduation: evidence from france*. *CEPR Discussion Papers*.
- [3] Dong, X. . (2021). *Prediction of college employment rate based on big data analysis*. *Mathematical Problems in Engineering: Theory, Methods and Applications*(Pt.51), 2021.
- [4] Burchell, B. , Sehnbruch, K. , Piasna, A. , & Agloni, N. . (2014). *The quality of employment and decent work: definitions, methodologies, and ongoing debates*. *Cambridge Journal of Economics*, 38(2), bet067.
- [5] Tony, Watson, Diane, & Watson. (1999). *Human resourcing in practice: managing employment issues in the university*. *Journal of Management Studies*.
- [6] Lovasz, L. . (1986). *Matching Theory (North-Holland mathematics studies)*. Elsevier Science Ltd.

- [7] *G Cornuéjols, & Hartvigsen, D. . (1986). An extension of matching theory. Journal of Combinatorial Theory, Series B, 40(3), 285-296.*