

Study Employment Problems and Countermeasures of Graduates from "Double first-class" Universities in Liaoning Province under the Background of Big Data

Chuanli Wei, Pengchi Hu*
624446286@qq.com, 1098792923@qq.com*

Harbin University of Commerce, Harbin, Heilongjiang, China

Abstract: In recent years, the local "double top" college graduates in Liaoning province brain drain is serious, limit the economic transformation in the development of Liaoning province, this paper under the background of big data for job losses in four "double" first-class universities in Liaoning province data is analyzed, and the analysis of factors affecting leave province employment, mainly has the regional economic development level, the influence of the employment pressure. In view of the above reasons, this paper summarizes the factors of the loss of "double first-class" graduates in Liaoning Province under the background of big data, and puts forward targeted solutions, so as to retain local "double first-class" graduates and promote the development of Liaoning Province.

Keywords: Big data background; 'Double first-class' graduates; Employment countermeasures

1. Introduction

In 2022, the Ministry of Education released the Notice on the Second Round of the List of Double-first-class Universities and Construction Disciplines. 147 universities across the country were included in the list, among which Liaoning Province has four "double-first-class" universities, namely Liaoning University, Northeastern University, Dalian University of Technology and Dalian Maritime University. Wang Shengjin (2020) believes that in reality, different education levels of labor force have different impacts on society, and the innovation ability of higher education group is greater than that of secondary education group[1]As a group of higher education and high-quality talents, how to attract, retain and make good use of these graduates from "double first-class" universities is an unavoidable problem for Liaoning provincial government. It is also an issue that should be paid attention to in the context of big data.

2. Analysis of employment rate of graduates from "double first-class" universities in Liaoning Province under the background of big data

Among the four "double first-class" universities in Liaoning Province, the graduates who stay in Liaoning province still account for the first place, but the overall turnover rate is relatively serious, showing a downward trend. For details, see Table 1.

Table 1 Employment rate of graduates from three "double first-class" universities in Liaoning Province

Double First-rate	Degree	2017	2018	2019	2020	2021
Liaoning University	Bachelor and Master	51.15%	48.64%	41.18%	46.88%	45.58%
Northeastern University	Bachelor and Master	24.1%	21.6%	18.9%	18.6%	28.1%
Dalian University of Technology	Bachelor and Master	31.11%	35.85%	40.85%	18.96%	18.62%
		22.22%	18.69%	16%	16.12%	19.76%

"Dalian Maritime University 2021 graduates employment quality Annual report" shows that the 2021 graduates of Dalian Maritime University in the "Belt and Road" provinces and cities employment number of more than 1000, accounting for more than 35%, although Dalian Maritime University did not disclose the specific number of 2021 graduates and the proportion of employment in Liaoning province, However, provinces and cities along the "One Belt and One Road" strategy include Liaoning Province, Guangdong Province, Shanghai and other more than ten provinces and autonomous regions. Therefore, it can be inferred that the proportion of graduates of Dalian Maritime University in serving the national "One Belt and One Road" strategy is less than 35%, which is compared with 1311 graduates in 2020, accounting for 49.16%. In 2019, 2281 people were employed in Liaoning Province, accounting for 62.61%; In 2018, 2,023 people, accounting for 62.50%, stayed in Liaoning Province, while the proportion of graduates from Dalian Maritime University in Liaoning Province also showed a sliding trend, and the loss situation was more serious. See FIG.1

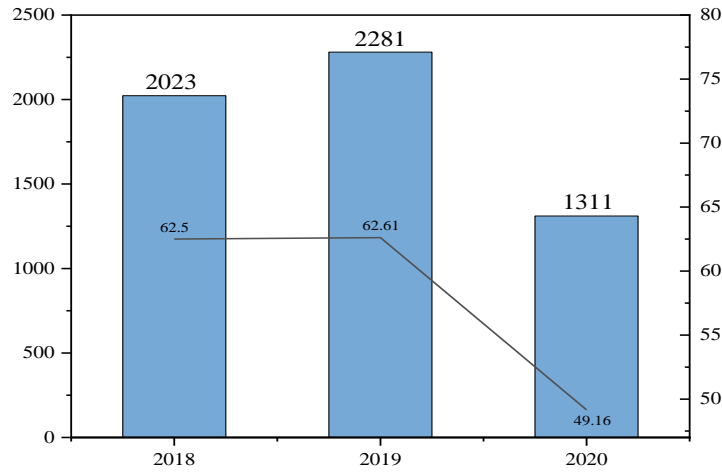


Figure 1 Data graduates of Dalian Maritime University serving the "One Belt and One Road" strategy from 2018 to 2020

The number of graduates from Liaoning "Double First-class" universities in the past five years is 28,864 in 2017, 29,467 in 2018, 29,601 in 2019, 30,874 in 2020, and 31,869 in 2021. On the one hand, the graduates of "double first-class" universities are increasing year by year; on the other hand, these high-quality talents are losing jobs in the province. It can be said that the employment problem of "double first-class" graduates in Liaoning province is not optimistic.

3. Analysis of influencing factors of graduates' employment in "double first-class" universities in Liaoning Province under the background of big data

3.1 Factor of level of regional economic development

The out-of-province flow of graduates from the four "double first-class" universities in Liaoning Province is mainly concentrated in Beijing, Shanghai, Guangdong, Jiangsu and other developed cities and regions, while the in-province flow is concentrated in Dalian and Shenyang. The trend of employment flow is from less developed areas to developed areas, and the employment cities tend to be first-tier cities and new first-tier cities. In 2021, the annual GDP of Liaoning Province was 2,758.41 billion yuan, while the annual GDP of Guangdong Province was 12,436,967 billion yuan. Due to the differences in regional economic development, cities in these developed regions can often provide more employment opportunities, higher salary and welfare, better employment quality, education, medical and other living facilities, and talents are more inclined to choose cities with strong job opportunities to live and develop^[2]. The difference in regional economic development level will lead to the difference in salary and welfare. According to the Annual Report on Employment Quality of Liaoning University Graduates in 2020, the average monthly income of Liaoning University graduates in Beijing is the highest, which is 8685.80 yuan, and the average monthly income of graduates in Shanghai is 8016.97 yuan. The average monthly income of graduates employed in Guangdong province

was 7,322.85 yuan, while the average monthly income of graduates employed in Liaoning Province was lower, at 5,012.39 yuan. (See Figure 2 for details) Salary difference is an important factor affecting the flow of graduates from "double first-class" universities in Liaoning province.

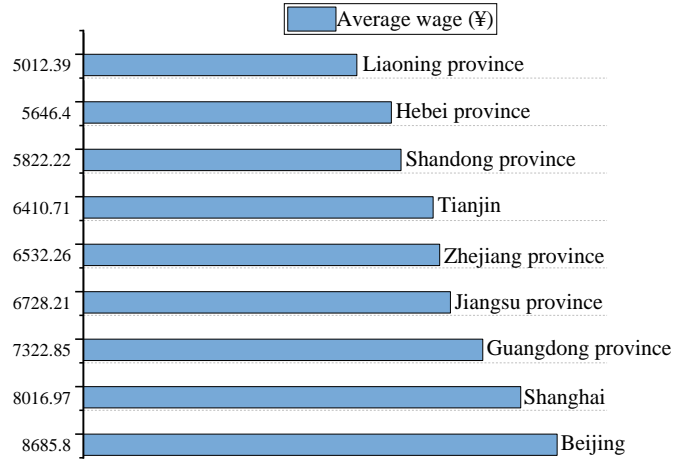


Figure 2 Average monthly salary of Liaoning University graduates in 2020

3.2 Employment environment stress factors

Fresh graduates to apply for a job now appears the phenomenon such as difficult employment, slow employment, according to the recruitment platform released the 2022 university students' employment force survey report shows that the fresh graduates to consider when choosing to factors, employment pressure of the highest, at 47.6%, followed by the students and the economy, new graduates willing to lower wages to adapt to the job market, The graduates of "double first-class" colleges in Liaoning Province tend to choose state-owned enterprises, party and government organs and other public institutions. Among them, 37 percent of the 2019 graduates from Liaoning University, 35 percent from Northeastern University, 46.27 percent from Dalian Maritime University and 34.49 percent from Dalian University of Technology choose state-owned enterprises. The proportion of 2020 graduates choosing state-owned enterprises was 17.2%, 38.1%, 46.12% and 32.67%, respectively. Among 2021 graduates, 10.27 percent, 38 percent, 42.12 percent and 36.14 percent chose state-owned enterprises. Under the influence of employment environment pressure factors, state-owned enterprises are still the first choice of graduates.

3.3 Family capital factor

As for the explanatory variables, whether college graduates are satisfied with their employment quality is a binary variable, so binary Logistic regression model is used to analyze. The model form is set as follows:

$$y^* = \beta_0 + \beta_1 economic + \beta_2 cultural + \beta_3 social + \sum_{i=5}^k \beta_i x_i + u \quad (1)$$

Among them: y^* is the latent variable behind the binary variable y , it represents the employment quality of college graduates and is a continuous variable. economic, cultural and social are family economic capital, cultural capital and social capital respectively. X_i is a variety of other factors affecting the employment choice of college graduates, such as age and health, and ability to work under pressure. u is the random disturbance term, it follows a Logistic distribution. The relationship between the binary variable y and y^* of whether college graduates are satisfied with the employment quality is as follows:

$$y = \begin{cases} 1, & y^* > c \\ 0, & y^* < c \end{cases} \quad (2)$$

Where, C is a specific critical value, $P(y=1)=P(y^*>C)$ is the probability of being satisfied with the current employment quality. $P(y=0)=P(y^*<C)$ is the probability of not being satisfied with the current employment quality. The binary Logistic expression of whether college graduates are satisfied with their employment quality is as follows:

$$\ln \frac{P(y=1|X)}{P(y=0|X)} = \beta_0 + \beta_1 economic + \beta_2 cultural + \beta_3 social + \sum_{i=5}^k \beta_i x_i + u \quad (3)$$

According to the descriptive statistical results of the survey report on the sample employment data of graduates from double first-class universities in Liaoning Province, The influence of family cultural capital on employment is statistically significant, and the T-statistic reaches 5.39 at the 5% level. The second is family economic capital with a T-statistic of 3.26, and the last is family social capital. According to the mean value and statistics in Table 2, the health status of the respondents also has a certain significance, and the difference between practical ability and anti-stress ability is small.

Table 2 Descriptive statistics on the employment situation of graduates from double first-class universities in Liaoning Province in 2021

The variable name	Variable definitions	Average employment of graduates	Fresh employment sample number	T statistic
a62	Economic capital	1595714	14	3.2601
a64	Cultural capital	3	14	5.3898
d376	Social capital	4.243	14	2.289
c362	Responsibility of interview	3.734	14	1.261
d3710	Online shopping expenditure	0.483	14	0.483

a15	health	4.357143	14	2.0392
a52	Practice ability	3.428571	14	1.7157
a304	The ability to learn	2.071429	14	0.3328
a313	Compressive ability	4.214286	14	1.7088

It can be seen from Table 2 that family capital has an important positive impact on the employment quality of college students, among which family cultural capital has the greatest impact, family social capital has a similar impact to individual comprehensive situation, and family economic capital has a relatively small impact.

4. Countermeasures to promote the employment of "double first-class" college graduates in Liaoning Province under the background of big data

4.1 Introduce new media platforms to strengthen data and information exchange

Establish information exchange between public employment service institutions in Liaoning Province, employers and "double first-class" universities, and use big data algorithms to understand the employment expectations, employment preferences and employment choices of every student. To provide suitable jobs for graduates of different types and majors, to achieve accurate, time-saving, convenient and efficient information sharing services. the publicity functions of public accounts such as "Provincial College Student Employment and Entrepreneurship Intelligence Platform" and "Dalian Talent" should be continued to be expanded to actively convey Liaoning Province's talent introduction policy for graduates from "double first-class" universities and promote the return of talents.

4.2 Improve the salary and welfare of graduates, and build the attractiveness of data city

We will intensify the introduction of talents and improve the employment benefits for graduates of "double first-class" universities. For graduates of "double first-class" universities, we will provide subsidy policies to improve the salary and welfare of graduates by focusing on practical problems such as house purchase, life, entrepreneurship and job hunting. For example, the "Xingshen Talent" policy proposed by Shenyang City provides 70,000 yuan, 40,000 yuan and 20,000 yuan respectively for first-home purchase subsidies for graduates with a doctor's degree, a master's degree and a bachelor's degree. Attention is paid to the introduction of talents who have close relationship with local people, so as to achieve talent introduction based on emotion^[4]. While improving the treatment of graduates, accelerate the development of urban infrastructure construction, continue to give play to the data city charm of Dalian and Shenyang, and improve the city's ability to attract.

4.3 The government vigorously develops the digital economy, supports and attracts the development of digital economy enterprises

According to marcus smith.could institute released "2021 Chinese college students employment report showed that less unemployment, employment, wages and is also integrated professional degrees higher, as the demand growth of" green brand professional ", contains a major in information security, software engineering, information engineering, network engineering, network engineering, digital media technology professional, Electrical engineering and automation,(see table3) among which information security, software engineering and other majors have been green card majors for many consecutive years. Therefore, it is necessary for Liaoning Province to develop the digital economy and support the development of relevant enterprises, so as to attract more graduates to work in Liaoning Province.

Table3 2018-2021 Undergraduate Green Card major

2021	2020	2019	2018
Information security	Information security	Information security	Information security
Software engineering	Software engineering	Software engineering	Software engineering
Information engineering	Information engineering	Network engineering	Network engineering
Network engineering	Network engineering	Internet of Things Engineering	Internet of Things Engineering

4.4 Improve the publicity of grassroots employment under the background of big data, and guide college students to obtain employment through multiple channels

Government should realize that big data in Liaoning province under the background of the development direction of "Liaoning province" double top graduates from many angles, from the aspects of policy support, encourage students in employment at the grassroots level in emerging industry data, network and employment both at the grassroots level to adapt to the big data under the background of the comprehensive development of individual ability, promote the employment ability of the business. Search for outstanding grassroots employment alumni, compile publicity materials, use the form of students love to promote in the school, pass on the high employment values. At the same time, college students should change their employment concept, establish diversified employment concept, correctly analyze the form, combine with their own reality, scientifically and reasonably adapt to the job market, promote the formation of more employment growth points, accelerate the transformation and upgrading of the digital industry⁸

4.5 The government continues to deepen the reform of state-owned enterprises and foster a loose and free enterprise culture

Liaoning province is the largest state-owned enterprises, but part of the reform of state-owned enterprises is not completely rigid, unclear responsibilities, talent incentive mode is single, such problems as lack of autonomy, resulting in part of the "double top" college grads who

can't achieve its goals, career planning in when choosing a career and choose to respect knowledge, respect talent in the enterprise. So we should deepen the reform of the state-owned enterprises, the establishment of modern enterprise management system, continue to expand the state-owned enterprise's ability to absorb employment, improve the work efficiency of state-owned enterprises, learning management experience of the developed cities, create a people-oriented, improve staff quality, formulate the corresponding incentive measures and feasible incentive rewards and punishment system, and create a good working atmosphere of enterprise, To increase the attractiveness of the enterprise, create a characteristic state-owned enterprise development card of Liaoning Province, shape a loose and free enterprise culture suitable for talent training, attract and leave more excellent graduates of the province.

5. Concluding remarks

In the era of big data, the revitalization of Liaoning Province cannot be achieved without high-quality talents. Currently, Liaoning Province is in a critical period of strong talent province and strong talent country. In other words, whichever city or region can retain these "double first-class" talents, it is likely to take the lead in development, retain talents and revitalize the digital economy. The reason for the loss of graduates from excellent universities in Liaoning Province is that they cannot meet the demand for talents. The government of Liaoning Province will undoubtedly choose the latter when introducing talents and stabilizing existing talents. From the perspective of economics, the cost of stabilizing talents is much lower than that of introducing talents, So it is urgent to retain talent and develop the digital economy, In view of the above situation, this paper puts forward some feasible operation suggestions.

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