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On the Correlation between the Employment Level of "985 Universities" Students and University Ranking

-- Based on the Comprehensive Ranking of Alumni Association

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Abstract

"Employment" has once been the focus of discussion at home and abroad in colleges and universities and all sectors of society. The employment level of college students is an important part of the high-quality construction of high-level schools, and also an indispensable indicator that directly or indirectly affects the ranking of domestic and foreign universities. This paper takes the ranking of authoritative universities of the domestic alumni association as the main data source, establishes a feasibility evaluation model of employment level, and carries out a correlation analysis between the employment level of 985 college students in China's universities and the university ranking. The results show that the ranking of colleges and universities is indeed a factor that affects the employment level of college graduates, and plays a positive role: however, Ranking is not the only key point of employment level, but also related to various factors such as social cognition. Therefore, when selecting schools or talents, we should also pay attention to the good combination of core competitiveness and needs in the context of the halo of "famous schools".

Keywords

Chinese universities; Employment level; University ranking; Correlation analysis.

1. Introduction

With the continuous development of China's market economy and the continuous improvement of the level of reform and opening up, China's education has also made considerable progress, especially in recent years, most of China's colleges and universities are constantly expanding their enrollment: according to the relevant data of the Ministry of Education, the number of college graduates will reach 11.58 million in 2023, plus the number of technical secondary schools, previous graduates and overseas returnees will add up to more than 13 million, For the society, this situation will have great employment pressure, especially in the post-epidemic era, the employment situation faced by college students is also increasingly serious, and the employment problem in the graduation season has become the focus of social attention time and time again.

In view of this, it is extremely important to study the employment level of college graduates. The employment level here refers to the level of subjective employment results generated in the process of employment selection. What subjective factors HR will employ in the process of employment of college graduates is what we need to think about. Through network survey and field investigation, we found that HR of many enterprises will selectively identify the word "famous school", especially some popular companies will even clearly mark the type of new graduates from key universities, which has a certain negative impact on some graduates who

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have the ability to show their core competitiveness in employment. So, does the employment level of college graduates in China really have the "famous school plot" as the public thinks?

University ranking is the result of the third-party evaluation of the development of higher education, and is the vertical comparison of the advantages and disadvantages of the development level of universities. The ranking tradition began in the United Kingdom and the United States. At the beginning of the 20th century, China gradually began the university ranking evaluation system. Since 2003, China Alumni Association has cooperated with many domestic news media to carry out the research of university evaluation in China for 19 consecutive years, China Alumni Association University Ranking has become the most influential and credible university ranking brand in China. The Alumni Association recently released a complete list of the top 800 Chinese universities in the 2020-2021 rankings. The core evaluation factors in the list are nine core indicators, including teaching quality (the largest proportion), high-level talents, disciplines and disciplines, and high-end scientific research achievements. The comprehensive score of the list provides the main core data for the analysis and processing of this article.

How is the correlation between the employment level of graduates of key universities and the ranking of universities in China, and whether there is a significant correlation? Clarifying these problems can reveal the relationship between the employment level of graduates and the ranking of universities, and help students, parents, and enterprise HR at all levels to carry out the procedural processing of students' college selection and talent employment.

2. Evaluation Model of College Students' Employment Level

The most intuitive expression of the employment level of college graduates is the employment rate. Each year, when major universities release the summary evaluation report of the employment rate of the university this year, it also marks the end of the graduation season. Therefore, when establishing the evaluation model of the employment level of graduates, we take the employment rate of college graduates as the core indicator; Moreover, the region of colleges and universities and the level of employment competitiveness also have a certain impact on the employment level of college graduates, and the establishment of factors affecting the employment level cannot be excluded; Therefore, under the premise of $\mu 1$ ($\lim \mu 1=0$) on the basis of the potential influencing factors of society and family, the evaluation model of the employment level of college graduates is established as follows:

$$Y1= w1\times X1 + w2\times X2 + w3\times X3 +\mu 1 \quad (1)$$

Among them, Y1 is the employment level of new graduates, X1 is the employment rate, X2 is the urban level, X3 is the employment competitiveness index, w1, w2, w3 are the weights, and $\mu 1$ is the error term.

In order to make the research feasible and eliminate accidental factors, this paper selects the "985 Project" construction colleges and universities announced by the Ministry of Education as the research object, and excludes the special colleges and universities of National Defense Science and Technology that do not participate in the ranking competition from the list, in order to achieve higher credibility.

The author extracts the arithmetic average of the employment rate of the key universities of the "985 Project" in the last three years and obtains the effective employment rate X1 (weight is w1). For the assignment weight of the city level, it is mainly based on the latest Chinese city classification list to obtain the city level X2 (the weight is w2), which reflects the employment value brought by the city where the university is located. The employment competitiveness index is the authoritative data in the Report on Employment Competitiveness of Freshmen released by BOSS, the leading recruitment website in China, in recent three years. Normalize the employment competitiveness index of the "985 Project" universities in 2018, 2019 and

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2020. In order to reduce the non-system error, the processing results are uniformly obtained by averaging X3 (weight w3), so as to provide a reasonable value for the employment competitiveness index of universities.

After relevant data processing, the author obtains the data in Table 1 below, which lays the foundation for the following regression analysis:

Table 1. Normalized results of graduates' employment level

Name of university	Effective employment rate in recent three years	Assessment of urban development level	Normalization of competitiveness index	Normalization of horizontal results
Tsinghua University	98.1333	5.0000	100.0000	100.0000
Peking University	97.9300	5.0000	98.7104	99.4306
University of Science and Technology of China	96.7233	3.0000	86.3747	94.2564
Fudan University	97.5367	5.0000	93.3042	97.3521
Renmin University of China	98.0733	5.0000	84.0396	94.6027
Shanghai Jiaotong University	98.6967	5.0000	87.8457	96.2986
Nanjing University	97.7233	4.0000	79.7681	92.8221
Tongji University	99.0833	5.0000	84.0342	95.2789
Zhejiang University	97.3767	4.0000	94.2348	97.4451
Nankai University	96.3967	4.0000	78.3903	91.4691
Beihang University	98.9167	5.0000	82.6764	94.7113
Beijing Normal University	98.1367	5.0000	72.6016	90.8061
Wuhan University	96.5133	4.0000	84.1222	93.4713
Xi'an Jiaotong University	98.1200	4.0000	81.3102	93.6060
Tianjin University	97.9667	4.0000	76.5104	91.8920
Huazhong University of Science and Technology	95.7833	4.0000	77.4291	90.7348
Beijing Institute of Technology	97.9700	5.0000	75.8515	91.7850
Southeast University	98.4400	4.0000	75.5847	91.8991
Sun Yat-sen University	91.0267	5.0000	80.2217	88.5909
East China Normal University	95.5333	5.0000	66.7163	87.0831
Harbin Institute of Technology	96.8433	3.0000	82.4511	93.0201
Xiamen University	95.6667	3.0000	77.4367	90.5471
Northwestern Polytechnical University	97.5467	4.0000	72.5036	90.2653
Central South University	97.7433	4.0000	78.6568	92.4626

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Dalian University of Technology	95.3567	3.0000	69.2272	87.5835
Sichuan University	96.1100	4.0000	75.0039	90.1400
University of Electronic Science and Technology of China	96.9633	4.0000	77.4918	91.5479
South China University of Technology	99.4367	5.0000	72.0349	91.4885
Jilin University	94.9100	3.0000	73.1799	88.6104
Hunan University	96.5700	4.0000	73.8132	90.0492
Chongqing University，CQU	94.8567	4.0000	67.2126	86.6836
Shandong University	92.5200	3.5000	69.8892	85.9574
China Agricultural University	96.7500	5.0000	69.4813	88.8279
Ocean University of China	93.9533	4.0000	65.9269	85.6457
Minzu University of China	92.6250	5.0000	66.6011	85.0921
Northeastern University	95.6300	4.0000	75.9266	90.1275
Lanzhou University	90.8300	3.0000	76.6478	87.0355
Northwest A&F University	95.9167	3.0000	65.0759	86.5661

Note: According to relevant data, the weighted weight in this paper is W1=0.6, W2=0.1, W3=0.3; W1+W2+W3=1； This table and the original data below are from the Annual Report on the Employment Quality of Graduates of various universities in the corresponding years, the official information website of the Ministry of Education, etc.

3. Regression Analysis of College Students' Employment Level and University Ranking Evaluation Score

The previous analysis shows that the employment level of college graduates is closely related to the employment rate, employment competitiveness and other factors of colleges and universities, and the employment level index of college graduates of the "985 Project" is obtained after weighting.

For university ranking, the official comprehensive score data of the alumni association in recent three years is used as the ranking basis. The processed comprehensive scores are listed in the following table:

Table 2. Analysis Results of Comprehensive Ranking Scores of Colleges and Universities in the "985 Project" from 2018 to 2020

Number	Name of university	2018	2019	2020	Comprehensive score
1	Tsinghua University	98.5	99.58	97.68	98.5867
2	Peking University	100	100	100	100.0000
3	University of Science and Technology of China	75.14	72.93	75.78	74.6167

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4	Fudan University	82.79	82.17	82.94	82.6333
5	Renmin University of China	81.98	81.51	82.48	81.9900
6	Shanghai Jiao Tong University	81.76	81.5	82.24	81.8333
7	Nanjing University	80.43	80.7	81.83	80.9867
8	Tongji University	72.85	71.08	74.43	72.7867
9	Zhejiang University	82.38	82.56	82.48	82.4733
10	Nankai University	74.46	73.5	75.58	74.5133
11	Beihang University	70.58	69.7	71.87	70.7167
12	Beijing Normal University	74.75	72.5	75.55	74.2667
13	Wuhan University	82.43	81.49	81.51	81.8100
14	Xi'an Jiaotong University	73.56	73.5	75.08	74.0467
15	Tianjin University	72.81	73.54	76.18	74.1767
16	Huazhong University of Science and Technology	75.12	75.04	76.99	75.7167
17	Beijing Institute of Technology	68.72	67.75	70.52	68.9967
18	Southeast University	71.35	71.09	73.99	72.1433
19	Sun Yat-sen University	76.46	76.16	78.7	77.1067
20	East China Normal University	69.52	68.02	70.59	69.3767
21	Harbin Institute of Technology	72.72	72.55	75.03	73.4333
22	Xiamen University	72.23	71.43	74.61	72.7567
23	Northwestern Polytechnical University	67.77	67.54	70.62	68.6433
24	Central South University	73.13	72.56	74.96	73.5500
25	Dalian University of Technology	68.84	68.46	70.43	69.2433
26	Sichuan University	74.99	74.5	76.13	75.2067
27	University of Electronic Science and Technology of China	66.88	66.31	68.18	67.1233
28	South China University of Technology	68.47	68.11	70.49	69.0233
29	Jilin University	76.01	75.99	77.84	76.6133
30	Hunan University	68.03	66.25	69.68	67.9867
31	Chongqing University，CQU	69.54	67.44	69.63	68.8700
32	Shandong University	72.72	72.13	74.96	73.2700
33	China Agricultural University	68.05	66.9	69.2	68.0500
34	Ocean University of China	65.56	64.77	66.05	65.4600
35	Minzu University of China	63.78	63.51	64.18	63.8233
36	Northeastern University	69.55	68.11	70.65	69.4367
37	Lanzhou University	67.21	67.16	68.46	67.6100
38	Northwest A&F University	64.92	64.34	65.73	64.9967

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Through the above correlation analysis and on the basis of qualitative research, the author establishes a simplified linear regression model for the comprehensive score of the "985 Project" universities' employability level and university ranking, and makes further quantitative research on the correlation degree of the two effective indicators.

Assume that the employment level of college graduates is Y, and the comprehensive ranking score of college graduates in recent three years is X, and establish a simplified linear regression model:

$$Y= \beta 1+ \beta 2X+\mu \quad (2)$$

Use SPSS statistical software to calculate the correlation. See Table 3 for the specific results.

Table 3. Correlation analysis

		Comprehensive score	Employment level
Comprehensive score	Pearson correlation	1	.787**
	Significance (bilateral)		.000
	N	38	38
Employment level	Pearson correlation	.787**	1
	Significance (bilateral)	.000	
	N	38	38

Note: * * indicates that the correlation is significant at 0.01 level (bilateral).

It can be seen from Table 3 that the simple correlation coefficient between the employment level of new graduates and the comprehensive score of the "985 Project" university ranking is 0.787, and the probability of coefficient test between the two is close to 0; Therefore, when the significance level is 0.05 or 0.01, there is always a significant linear relationship between the two.

In order to obtain more accurate correlation coefficient analysis, EViews analysis software is used for calculation. See Table 4 for specific regression results.

Table 4. Results of regression analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	63.43189	3.684156	17.21748	0.0000
X	0.377061	0.049309	7.646936	0.0000
R-squared	0.618949	Mean dependent var		91.45225
Adjusted R-squared	0.608365	S.D. dependent var		3.766360
S.E. of regression	2.357018	Akaike info criterion		4.603867
Sum squared resid	199.9992	Schwarz criterion		4.690056
Log likelihood	-85.47348	Hannan-Quinn criter.		4.634533
F-statistic	58.47564	Durbin-Watson stat		1.819040
Prob(F-statistic)	0.000000			

According to the graph of Resids regression results, the fitting degree of the model is good.

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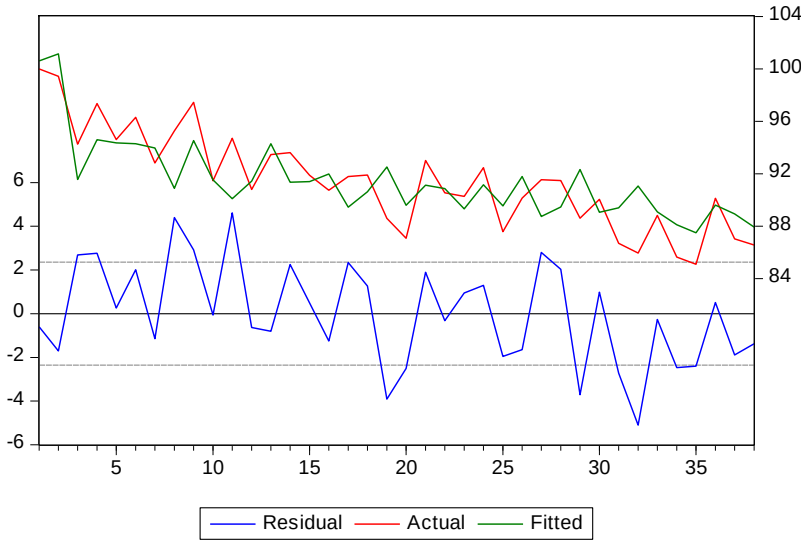

Figure 1. Residual diagram

According to the above table, the parameter estimation result under the standard form is

$$\bar{y} = 63.43189 + 0.377061\,\bar{x} \tag{3}$$

$$R^2 = 0.618949 \quad F = 58.47564 \quad n = 38 \tag{4}$$

4. Test and Result Analysis of Regression Model

4.1. Practical significance test

Through the analysis of the regression model, we get the estimated parameter value as β 2=0.377061, which means that every time the university score increases by 1 point, the employment level of the university will increase by 0.377061 points on average, which is consistent with our common sense and the enrollment angle of the university propaganda, affirming the promotion role of university ranking on the employment level of new graduates, and proving that the quality of university ranking really has a positive impact on the employment level of new graduates. So the data analysis results are consistent with the actual significance.

4.2. Goodness of fit and statistical test

During data processing, the author did not notice that there was a great deviation from the data statistics in this paper, so the source and accuracy of the data were reliable. In the measurement of goodness of fit, the determinable coefficient of the regression result was 0.618949. In the processing of section data, the determinable coefficient R-squared=0.618949 was obtained, indicating that the established regression model fitted the sample data well, That is to say, the explanatory variable "comprehensive evaluation score of colleges and universities" explains most of the differences in "employment level of college graduates".

For the regression coefficient t, Prob= 0.0000, indicating that the significance test of the slope shows that the explanatory variable does have a significant impact on the explained variable, and the regression model data analysis is reliable.

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Through the analysis of the above results, it can be seen that the regression analysis of the model is practical in the data processing, model establishment and model test of the whole model, which can provide quantitative analysis support for the problems studied in this paper.

5. Reasons Why University Rankings Affect the Employment Level of New Graduates

5.1. Differences in the allocation of educational resources and traditional preferences of employers

The graduates of non-famous colleges and universities have certain "discrimination" before they enter the employment market. The traditional preference of employers will think that the better schools have the richer educational resources, which can provide students with better education level and cultivate more outstanding talents. After four years of good knowledge and skills education, these talents will become more outstanding, adapt well to the huge changes brought by the working environment, create greater value for employers, and employers will prefer "famous students". This is often the case in reality. Some employers always have an involuntary prejudice against workers who graduated from non-famous schools, believing that their quality in all aspects is always lower than that of graduates from famous schools. Under the same conditions, they are more willing to choose fresh graduates from famous universities.

5.2. Information asymmetry in two-way selection.

The fundamental reason for the existence of "discrimination" lies in the asymmetry of information when the recruiter and the applicant make two-way choices. Because employers can't effectively distinguish high-quality fresh graduates from low-quality graduates, in order to save recruitment costs, they choose the screening signal of whether to graduate from a higher-ranking famous school. Although this signal often produces a certain amount of errors, it is also an effective screening method, so the higher-ranking famous school affects the employment level of graduates.

5.3. Graduates from famous universities have their own core competitiveness

The core competitiveness of new graduates is inseparable from the multi-dimensional training of colleges and universities. Many students from famous schools do have better skills and more knowledge. Recruitment units prefer the core competitiveness of graduates, which is one of the reasons why more parents and students are more willing to choose famous schools to study. Relevant research also shows that "famous school plot" plays a driving role in the process of social development.

6. Conclusion and Prospect

The popularity of the university has a positive impact on the employment level of college graduates. This is not only determined by the traditional cognition of the society, but also closely related to the training process of students at the national level, all regions and universities. An excellent talent can not only rely on the "halo of famous universities" to obtain super-high core competitiveness, but also needs its own efforts and perseverance. Employers or employers should not only consider the "famous school factor" when selecting candidates, but should give candidates an opportunity to show themselves and select talents suitable for the healthy development of their enterprises, so as to maximize the effectiveness of social talents.

From the prosperity of the country to the rapid and healthy development of enterprises, talents are the first core competitiveness. It is an undeniable fact that "famous schools" have trained a number of excellent talents with good social competitiveness for the country and enterprises.

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From a larger perspective, the country should provide all kinds of colleges and universities with relatively fair competitive resources, and talents grow in a good atmosphere, so as to prepare for the follow-up to become outstanding talents in various disciplines. Such a cycle is the excellent ecology of talent cultivation.

In addition, on the basis of fully improving the employment level of graduates, all sectors of society should also encourage new graduates to innovate and start businesses to add impetus to the development of the country and society.

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