

Use of Big Data to Determine the Effect of Parental Educational Level on the Quality of College Students' Employment

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Abstract: the quality of College Students' employment is important because it involves human capital and social capital. The human capital and social capital of college students directly affects their quality of employment but the root is the parents' human capital. Empirical analysis shows that the effect of the father's educational level on the monthly wage of College Students' children is significant at a level of 5% and the direction is positive. The effect of the mother's educational level on the monthly wage of College Students' is also significant at a level of 5%, with a positive direction and the effect coefficient is greater than that for the father. Therefore, the equalization of educational opportunities is related to the life of one generation and to the growth of several generations. On-the-job education and lifelong education also play an important role in improving the quality of life for the offspring.

1 Introduction

According to the employment report for Chinese college students released by MyCOS Research Institute, a third-party social survey organization, the employment rate for 2018 university graduates is 91.5%. The employment rate of undergraduates continues to decline slowly, 1.6 percentage points less than the figure for 2014, and the proportion of employed 2018 undergraduate graduates is 73.6%, which continues to decline for five consecutive years. The number of graduates in 2020 will reach 8.74 million, which is an increase of 400000 over the previous year. The employment situation for 2020 graduates who are affected by the Corona epidemic situation is more bleak. Therefore, the employment and employment quality of college students is important for the state and society. This study uses big data to interpret the problems that affect the quality of College Students' employment.

2 Theoretical analysis of the effect of parents' educational level on the employment quality of College Students

The concepts of human capital and social capital are used to analyze College Students' employment quality. Human capital theory states that educational level, knowledge structure, skill level and experience accumulation affect an individual's income and working conditions and employment quality. Social capital theory states that the acquisition and utilization of personal

social network resources affects personal income and working conditions and affects employment quality. According to the theory of human capital, if the labor market is completely competitive, the more human capital an individual has, the greater is the ability to work, the greater is the value that is created for the enterprise and the greater is the remuneration for the individual.

Xie Yong and others all empirically studied the relationship between human capital characteristics and the employment quality of college students (Xie Yong, 2009; Meng Dahu, 2012; Yue Dejun, 2016; Qin Yin, 2017) [1-4]. Social capital theory focuses on the role of social capital in the quality of College Students' employment. Granovetter and Nan respectively proposed a weak relationship theory and social resource theory and Bian studied the effect of strong relationship power on job hunting (Granovetter, 1973; Nan, 1999) [5, 6]. Xue Zaixing and others studied the relationship between social capital and the employment quality of college students (Xue Zaixing, 2014; Liu Jie, 2016; Zhao Jianguo, 2017; Liu yanru, 2018) [7-10]. Some studies differentiate between human capital and social capital. Xu Tao and Hu Jianguo studied these two types of capital (Xu Tao, 2016; Hu Jianguo, 2019) [11, 12]. However, there is no consensus on which type of capital has a greater impact on the employment quality of college students.

These studies involve the quality of College Students' employment. Human capital, social capital, or a differentiation of the two uses empirical analysis but the reason for the different approaches is unclear. This study analyzes the quality of their children's employment from the perspective of parents to determine the source of the

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quality of College Students' employment and improve the quality of College Students' employment.

3 Data collection and research methods

3.1 data collection

This study uses the national dynamic monitoring database of floating population (CMDS) for 2016. The database contains data from 433 regions of 32 provinces in China, with a total of 1690000 samples. 26919 samples were obtained, including 13359 males and 13560 females.

3.2 research variables and research methods

This paper determines the effect mechanism for parents' educational level on the employment quality of college students. The dependent variable is the quality of College Students' employment, which is measured by the economic index of income. The monthly wage for College Students' employment is the dependent variable. The independent variable is the educational level of parents, which is assigned according to whether they attended primary school, junior high school, high

school/secondary school, college, undergraduate and graduate students. The employment quality of college students is also affected by personal characteristics and occupation-related characteristics, so gender, age, household registration, whether they are Party members, occupation type, contract formality and other indicators are used as control variables. This study hypothesizes that the educational level of parents has a significant impact on the employment quality of College Students.

It is expressed by the formula:

$$Income_i = \alpha + \beta edu_f_i + \gamma X_i + \varepsilon$$

Income_i represents the employment quality of college students, which is the monthly wage level; edu_f_i represents the educational level of the parents; X_i represents the control variable; α is a constant, β is the coefficient for the independent variable edu_f and the dependent variable income, γ is the coefficient for the control variable X and the dependent variable income and ε is a random error.

3.3 Analysis of descriptive statistics

An analysis of the sample size, error, mean value, minimum value and maximum value for these nine variables is shown in Tab.1.

Table 1. Descriptive Analysis of Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
income	23091	5281.57	4759.473	100	90000
father_edu	2409	3.210046	0.9176465	1	7
mother_edu	2899	2.879269	0.9220375	1	7
gender	26919	0.4962666	0.4999953	0	1
age	26919	31.08774	7.629747	17	86
household	26919	0.5116832	0.4998728	0	1
party	26883	0.1433248	0.3504103	0	1
occupation	22950	40.13081	17.11863	10	80
contract	18280	0.8556893	0.3514141	0	1

The monthly salary of college students is variable, but the average monthly salary is 5281 yuan. The average educational level of the father is greater than junior high school and that of the mother is close to junior high school. The father's educational level and the mother's educational level have a strong correlation with college students' monthly salary.

4 The effect of parents' educational level on the employment quality of College Students

4.1 Analysis of Results

Linear regression analysis is used to obtain the regression results in Tab.2:

Table 2. Empirical results of intergenerational transmission of Education

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Income	Income	Income	Income	Income	Income
father_edu	447.6*** (96.15)	316.0*** (90.69)	231.7** (94.71)	211.7** (94.96)	180.7* (96.81)	197.6** (79.98)
gender	1,307***	593.3***	613.6***	608.4***	625.3***	521.5***

	(175.3)	(170.7)	(170.4)	(170.6)	(173.8)	(146.8)
age		273.3***	252.1***	250.7***	244.0***	200.4***
		(17.23)	(18.58)	(18.75)	(19.19)	(17.16)
household			-578.0***	-534.8***	-578.2***	-482.6***
			(191.5)	(192.1)	(197.2)	(166.2)
party				519.4**	517.2**	569.4**
				(256.6)	(263.6)	(221.5)
occupation					-7.981	-11.96***
					(5.160)	(4.022)
contract						890.5***
						(173.6)
Constant	2,132***	-4,374***	-3,190***	-3,179***	-2,528***	-2,241***
	(337.9)	(518.7)	(649.4)	(650.6)	(720.4)	(612.9)
Observations	1,879	1,879	1,879	1,874	1,834	1,397
R-squared	0.038	0.152	0.156	0.158	0.158	0.238

Standard errors in parentheses , *** p<0.01, ** p<0.05, * p<0.1

The first column of this table shows the effect of the father's educational level on the monthly wage of College Students. The second column shows the effect after adding the control variable of gender. The third, fourth, fifth and sixth columns show the regression results after adding age, household registration, whether they are Party members, occupation and whether a contract is involved. With the control variables, the effect is still significant at the 5% level, so if the parents' educational level increases by one level (such as from primary school to junior high school), the monthly salary of college students increases by 197.6 yuan.

4.2 Robustness test

In order to verify the robustness of the results of the effect of parents' educational level on children's monthly wage, this study uses the mother's educational level as the independent variable. Its effect on the monthly wage of the children is significant and the direction is consistent, which shows that the effect of parental educational level on children's monthly wage is stable, as shown in Tab.3:

Table 3. Analysis of robustness for intergenerational transmission of education

VARIABLES	(1) Income	(2) Income	(3) Income	(4) Income	(5) Income	(6) Income
mother_edu	361.0***	368.8***	272.6**	267.8**	246.8**	232.1**
	(112.9)	(105.2)	(110.3)	(110.9)	(112.9)	(93.11)
gender	1,730***	827.8***	853.6***	848.8***	880.7***	683.9***
	(210.3)	(201.6)	(201.5)	(202.0)	(205.4)	(169.6)
age		361.6***	338.1***	340.6***	332.4***	272.4***
		(19.21)	(20.89)	(21.08)	(21.55)	(18.82)
household			-634.4***	-619.5***	-616.2***	-530.5***
			(222.9)	(223.7)	(228.9)	(188.9)
party				75.15	26.45	274.6
				(295.1)	(301.9)	(247.5)
occupation					-15.98***	-21.15***
					(5.975)	(4.587)
contract						1,020***
						(208.9)
Constant	2,883***	-6,575***	-5,295***	-5,373***	-4,429***	-3,685***
	(371.8)	(610.2)	(757.5)	(761.1)	(837.4)	(695.9)
Observations	2,321	2,321	2,321	2,315	2,272	1,744
R-squared	0.030	0.159	0.162	0.162	0.163	0.242

Standard errors in parentheses , *** p<0.01, ** p<0.05, * p<0.1

5 Conclusion and suggestions

College Students' employment quality depends most on the human capital of the parents. The educational level of the parents has a significant impact on children's monthly wage level. The father's educational level and the mother's educational level show the same direction and trend. This shows that the equalization of educational opportunities is related to the lives of several generations.

Educational opportunities should be equalized and this policy should be promoted more in rural and urban areas. All types of in-service education and lifelong education should also be promoted because the accumulation of this human capital affects successive generations.

Due to the availability of data, this study only deals with education, which is an indicator of human capital. Future research might determine other elements of human capital.

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