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Study on factors affecting Chinese college graduates' choice of employment area

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ABSTRACT

This paper uses hierarchy regression analysis method to study the impact of social capital, human capital and expected salary on Chinese college graduates' choice of employment area, and examine the adjusting effect of individual implementation cost on the influencing relationship. The results show that: large and medium-sized cities are still the first choice for college graduates and social capital, human capital and expected salary have a significant positive impact on the choice of employment area. Besides, the results show that the individual implementation cost plays a significant regulatory role in the relationship between social capital, human capital and employment area choice, and has certain regulating effect on the relationship between expected salary and employment area, but their mechanisms are different.

KEYWORDS

Choice of employment area; College graduates; Hierarchy regression analysis; Adjusting effect; Influencing factors.



INTRODUCTION

The employment of college graduates has close relationship with the sound development of the social economy in China, which is stressed by party and government. In recent years, many new phenomena has appeared in the field of college graduates employment. On the one hand, with the number of college graduates increasing year by year, the employment situation is becoming more and more serious; on the other hand, by the adjustment and upgrading of the industrial structure and development of regional economy, the capacity of absorbing labors by private enterprises and the tertiary industry has increased. Also, second and third tier cities gradually become the new working places for employment. However, the distribution of the employment of college graduates is out of balance and the employment has exposed serious structural flaws. Initially, from choice of employment area of college graduates, the metropolis such as Beijing, Shanghai, Guangzhou, Shenzhen and first-tier cities still are the first choice, and the employment gap of the second and third tier cities still exists. In addition, according to the analysis and career development research on the status of the employment among the Chinese college graduates, the college graduates mainly chose the coastal developed areas, Yangtze river delta, the Pearl river delta and Bohai bay area accounted for 75 percent of the employment, and the provincial capital cities and municipalities accounted for 47 percent of the employment. The unbalanced geographical distribution has increased the structural flaws of the employment.

The two main reasons which contribute to unbalanced distribution of the employment of college graduates are the economic disparities among regions and conception differences of college graduates about employment. First of all, income gap, resulted from the economic disparities among regions, directly affects choice behavior of college graduates. The employment report of 2013 national college graduates showed that the provincial capital cities and municipalities had the highest average income which was 3791 yuan; the average income of prefecture-level cities was 3033 yuan; the average income of county-level cities or counties was 2656 yuan; the average income of villages and towns was 2518 yuan and of rural was 2485 yuan, the highest one was about 1.53 times higher than that of the lowest. In addition, the more important reason is the conception differences of college graduates about employment. In the choice of employment area, college graduates tend to choose the eastern region and big cities^[1]. That outdated concept of employment comes from college graduates' confusion about the future direction, the cognitive dislocation of social demand and the lack of self-knowledge^[2]. In 2014, the state council issued the notice about doing well the work of employment and entrepreneurship of 2014 national college graduates, encouraged the graduates to take jobs at urban and rural areas, and gave policy support for the graduates who would choose jobs in the capital and cities of the Midwest. However, whether college graduates' choice of employment area is consistent with the national policy, what is the choice behavior? What factors affect college graduates to choose the jobs and to what extent is the influence respectively? Related research remains to be further expanded. Therefore, in-depth analysis on the factors affecting college graduates' choice of employment area has important practical significance for the work of employment guidance and services in colleges and universities and releasing the structural contradiction of the employment of college graduates.

LITERATURE REVIEW AND RESEARCH HYPOTHESIS

Literature review

Scholars have carried on the theory discussion and empirical research about the factors influencing college graduates' choice of employment area. From the perspective of the study theory involved, there are duality labor theory, theory of job search and theory of reserved wages. Firstly, according to duality labor theory, China is still at the initial stage of economic development, and economic and cultural developments in different regions are uneven. There exists regional fragmentation between large and medium-sized cities and small towns on the aspect of labor market. People are relatively easy to obtain employment opportunity when shifting from large and medium-sized cities to small towns. But once college graduates choose jobs in small towns or rural, they would pay a high transaction cost to enter the large and medium-sized cities^[3]. Thus, working in the large and medium-sized cities will become a reasonable choice for the college graduates. Secondly, in terms of the theory of job search, it takes time cost and the cost of capital for college graduates to get information about pay and job, so the choice of employment area depends on the balance between costs and benefits^[4]. The employment area of the college graduates is inconsistent with the location of the university and their native place, which would increase the job search costs, because graduates will spend more time, money and psychological cost on job hunting. Thus, the choices of employment area are affected. Thirdly, theory of reserved wages is an improvement of job search theory, which believes that the expected income of college graduates impact their choices of employment area^[5]. Obviously, based on the economic disparities and income gap in China, the graduates with higher expected income are more likely to take jobs in big cities.

From the point of empirical study, social capital and human capital are the important factors that affect college graduates' choice of employment area. Initially, in terms of social capital, Chen studies the effects of the social capital such as the family's social status, employment guidance on the college graduates' choice of employment area. The results show that social capital can make up for the symmetry of employment information and promote the acquisition of employment opportunity for the graduates^[6]. The study of the Zheng indicates that the social capital like the parents occupation, degree of education and the income of family has an important influence on college graduates' employment behavior, the higher the social capital's level is, the less likely the college graduates would choose jobs in western or rural regions^[7]. On the other hand, in terms of human capital, Meng studies the reasons why the university graduates are crowded in big cities from the

perspective of "the specificity of human capital of urban". It suggests that the cities oriented education naturally form the specificity of human capital, college students who want to receive returns on investment have to work in the cities^[8]. Lai points out that the human capital on its own cannot secure jobs because the position in the main labor market is scarce and the competition is intense, thus the human capital and social capital of college students must work together for working in the big cities, namely, there is a complementary relationship between human capital and social capital of college students^[9]. And the research of Yue demonstrates that the college graduates working in the provincial capital cities and municipalities are more likely to find jobs through formal channels^[10]. Moreover, according to related research from Chen et al., the concept of employment and employment policies will also affect college graduates' choice of employment area^[11, 12].

Research hypothesis

Based on the results of the above theoretical analysis and the existing empirical research, this paper proposes the hypothesis about the influencing factors to college graduates' choice of employment area from the following four aspects. Social capital. Social capital has direct impact on the college graduates' choice of employment area. The higher social capital is, the more likely the college graduates would choose to work in the big cities.

Human capital. Human capital has direct impact on the college graduates' choice of employment area. The higher human capital is, the more likely the college graduates would choose to work in the big cities.

Expected salary. Expected salary has direct impact on the college graduates' choice of employment area. The higher expected salary is, the more likely the college graduates would choose to work working in the big cities.

Individual implementation cost. Individual implementation cost moderates the relationship between the social capital, human capital and expected salary and college graduates' choice of employment area.

This paper considers to use the individual implementation cost, represented by whether the employment area is consistent with the location of the university and whether the employment area is consistent with the native place, as a variables of job search cost. Leaving one's native place to work would carry a lot of psychological cost and the cost of living (disagreement with the employment area and native place), also away from the familiar cities would increase the degree of the symmetry of employment information and the job search cost (disagreement with the employment area and the location of university). The inconsistency of locations would make social capital and human capital fail to play full roles and weaken the effect of the expected salary on the choice of employment area. Therefore, this paper assumes that individual implementation cost affects the relationship between the social capital, human capital and expected salary and the choice of employment area by college graduates.

DATA SOURCES AND RESEARCH METHODS

Data and variables

This paper uses the data from surveys of two undergraduate universities, Hangzhou, Zhejiang province, on June 2014. 600 questionnaires were issued, 579 were recovered and the effective rate reached 96.5 percent. In the valid samples, 49 percent of the graduates had determined the jobs, which are analyzing samples of this paper. From the point of sample distribution, males accounted for 57 percent and females 43 percent. Graduates whose native place is large and medium-sized cities account for 36 percent, and the others account for 64 percent. However, there are 55% graduates working in the large and medium-sized cities, 45% of them in the villages and towns. In addition, because the samples are from undergraduate universities, they all are aged from 19 to 23.

The explained variable is the employment area of the college graduates, if the employment area is large and medium-sized cities, $Y = 1$; otherwise, $Y = 0$. Explanatory variables are divided into five categories, including social capital, human capital, expected salary, individual implementation costs and demographic characteristics, TABLE 1 shows the set of variables. The discrete variables would be handled as follows: the reference group of binary variables is assigned 0 and the control group is assigned 1, grouped variables such as per capita annual incomes of households and school record according to the certain order are assigned 1, 2, 3. Also, in order to overcome the multicollinearity, this paper defines the variable of parents occupation as parents' highest professional and years of education of parents as their average.

Methods

This paper mainly studies the influencing factors to college graduates' choice of employment area and the role of the individual implementation cost in adjusting the relation between the social capital, human capital and expected salary and college graduates' choice of employment area. Due to the explained variable is binary classification variable, this paper uses the logit regression model as follows:

$$\text{Logit}(p) = \alpha_0 + \sum \alpha_i x_i + \sum \alpha_j x_j + \sum \alpha_k x_k + \sum \alpha_{ij} x_i x_j + \varepsilon$$

Where p is probability of college graduates working in the large and medium-sized cities, $p / (1 - p)$ is odds ratio, which means the ratio of the probability of college graduates working in the large and medium-sized cities or not. Explanatory variables x are the factors affecting college graduates' choice of employment area, x_i are social capital, human

capital and expected salary, x_j is individual implementation cost, x_k are the control variables, namely the demographics variables, ε is a random perturbation term. α_{ij} measures effectiveness of the individual implementation cost in adjusting the relation between the social capital, human capital and expected salary and the college graduates' choice of employment area.

TABLE 1: Explanatory variables

Categories	Variables	Description
Social capital	Parents occupation	Manager, non-manager (reference group)
	Parents' education years	Continuous variable (unit: year)
	Per capita annual incomes of households	Low-income (below 5000 yuan)(reference group), middle income (5000~50000 yuan), high income (over 50000 yuan)
	Native place	large and medium-sized cities, other (reference group)
Human capital	School record	Based on GPA, grades are divided into 3 groups: last 25%, middle 50% and top 25% (reference group)
	Student cadre or not	Yes, no (reference group)
	Internship experience	Yes, no (reference group)
Expected salary	Major categories	Technical majors, non-technical majors (reference group)
	Expected salary	Continuous variable (unit: yuan)
Individual implementation cost	whether the employment area is consistent with the location of the university	Yes, no (reference group)
	whether the employment area is consistent with the native place	Yes, no (reference group)
Other control variables	Gender	Male, female (reference group)
	One-child or not	Yes, no (reference group)

ANALYSIS OF EMPIRICAL RESULTS

TABLE 2 shows the descriptive statistics of variables, including the mean, standard deviation and Pearson's correlation coefficient. As can be seen from the TABLE 2, 55 percent of the college graduates choose to work in large and medium-sized cities (the average of y is 0.55). Parents occupation, parents' education years, per capita annual incomes of households and native place of social capital are significantly positive correlated with the employment area; Internship experience and major of the human capital are significantly positive correlated with the employment area; and expected salary was correlated strongly to the employment area. So the results coincide with the assumptions. In addition, the expected salary of the college graduates is 3687 yuan (the mean x_{11}), 51 percent of the college graduates choose the employment area that is consistent with the location of university (the mean x_{12}), and 32 percent of college graduates choose the employment area that is consistent with the native place (the mean x_{13}).

This paper uses the hierarchical regression analysis method to test the hypotheses. The first step of the hierarchical regression is to analyze the main effects of the social capital, human capital, expected salary and other variables except the individual implementation cost (model 1); next, the individual implementation cost is incorporated into the model (model 2); finally the adjusting effect of individual implementation cost is considered (model 3). The regression results of the main effect are shown in TABLE 3, the regression results of the adjusting effect are shown in TABLE 4.

From the significance of the model, the likelihood ratio chi-square values of the model of main effect and the model of adjusting effect are larger, the corresponding $P < 0.01$, which shows that these models have satisfactory fitting goodness. Also, the significance level of main effect is higher than that of adjusting effect in this model, suggesting that the adjusting effect is significant. Thus, the hypotheses are confirmed. Besides, in terms of grouping variables, after controlling the demographic characteristics, social capital, human capital and expected salary have a significant impact on college graduates' choice of employment area, in which individual implementation cost plays a significant regulatory role.

The native place has a positive and significant effect on the college graduates' choice of employment area. The college graduates whose native place is large and medium-sized cities are more likely to take jobs in large and medium-sized cities. Even though under the condition of controlling individual implementation cost (model 2), that significance remains valid. This phenomenon can be explained from two aspects, on the one hand, only when the college graduates from large and medium-sized cities choose jobs in the large and medium-sized cities, can their social capital play a role, and other studies show that social capital has played a positive role in college students' employment; on the other hand, the college graduates from large and medium-sized cities develop a psychological dependence on the urban environment, which makes the college graduates unwilling to leave the large and medium-sized cities, and go to work in small cities and towns. Relatively, parents' occupation, parents' education years, per capita annual incomes of households have impacts on the college graduates' choice of employment area but the impacts are not significant.

In terms of the human capital, internship experience and major of graduates have positive and significant effects on their choice of employment area. The college graduates whose have high-scores school record and internship experiences are more likely to take jobs in large and medium-sized cities. Under the condition of controlling individual implementation cost, the influence of school record on selecting the location of university to work is more significant (model 2(a)) but that on selecting the native place to work is weaker (model 2(b)), and the influences of internship experience on both are all significant. This influence differences show that compared with the school record, the spillover effect of internship experience is relatively more important. Thus, for college graduates of cross-regional employment, internship experience is relatively more important and more conducive to find jobs in large and medium-sized cities. Major has an impact on the choice of college graduates to choose jobs in large and medium-sized cities but the impact is not significant. Although this may contradict that the specificity of human capital of urban has a positive and significant effect on the urban employment, this actually reflects the non-occupational characteristics of the teaching in colleges and universities in China as well as the low matching rate of learning and application.

TABLE 2: Descriptive statistics (N=284)

Variables	x1	x3	x5	x6	x7	x8	x9
x1 Parents occupation	1						
x3 Parents' education years	0.27***	1					
x5 Per capita annual incomes of households	0.23***	0.26***	1				
x6 Native place	0.08	0.28***	0.10	1			
x7 School record	-0.11	0.01	-0.03	0.04	1		
x8 Student cadre	0.03	0.12	-0.02	-0.01	0.17**	1	
x9 Internship experience	-0.08	-0.02	0.05	0.04	-0.15**	-0.08	1
x10 Major	-0.09	-0.15**	0.03	-0.10	0.02	-0.07	-0.03
x11 Expected salary	0.00	0.03	0.06	-0.17**	-0.04	0.17**	-0.04
x12 The employment area is consistent with the location of the university	0.09	0.16	0.15	0.22**	-0.11	0.08	0.09
x13 The employment area is consistent with the native place	-0.10	0.10	0.17**	0.15**	-0.01	0.09	0.02
x14 Gender	-0.03	-0.12*	0.15**	-0.05	-0.04	0.08	0.03
x15 One-child	0.12	0.35***	0.13*	0.16**	-0.02	0.10	0.01
y Employment area	0.19**	0.24**	0.26**	0.35***	-0.05	0.04	0.16**
mean (M)	0.18	12.15	2.20	0.19	2.39	0.68	0.11
standard deviation (SD)	0.39	3.34	0.60	0.40	0.58	0.47	0.31

Variables	x10	x11	x12	x13	x14	x15	y
x10 Major	1						
x11 Expected salary	-0.09	1					
x12 The employment area is consistent with the location of the university	0.17*	0.04	1				
x13 The employment area is consistent with the native place	0.13*	-0.15*	0.14	1			
x14 Gender	-0.07	0.18**	0.32***	0.19**	1		
x15 One-child	-0.01	0.00	0.30***	0.07	0.18**	1	
y Employment area	0.27***	0.24**	-0.04	-0.17	-0.01	0.10	1
Mean (M)	0.28	3687.43	0.51	0.32	0.57	0.56	0.55
Standard deviation (SD)	0.45	1353.85	0.50	0.47	0.50	0.50	0.50

Note: ***p<0.01,**p<0.05,*p<0.1

Expected salary has a positive and significant effect on the college graduates' choice of employment area. Each additional 100 yuan of the expected salary can create the probability of college graduates working in the large and medium-sized cities increased by 6% (0.06 = (exp (0.0006) - 1) * 100). Also under the condition of controlling individual implementation cost, the influence of expected salary on the employment area has no significant change.

TABLE 3: The regression results of main effect

		Model 1		Model 2(a)		Model 2(b)	
		C	SE	C	SE	C	SE
Social capital	x1 Parents occupation	0.87	0.935	0.783	0.957	0.547	0.98
	x3 Parents' education years	0.118	0.086	0.132	0.089	0.152*	0.091
	x5 Per capita annual incomes of households	0.046	0.468	0.213	0.476	0.309	0.492
	x6 Native place	2.954***	1.125	3.034***	1.124	3.455***	1.163
Human capital	x7 School record	0.381**	0.155	0.48***	0.169	0.306*	0.183
	x8 Student cadre	0.023	0.563	0.102	0.566	0.032	0.6
	x9 Internship experience	0.366*	0.187	0.493***	0.191	0.531***	0.196
	x10 Major	0.422	0.581	0.579	0.595	0.525	0.609
Expected salary	x11 Expected salary	0.0006**	0.0003	0.0007**	0.0003	0.0006**	0.0003
Demographic characteristic	x14 Gender	-0.481	0.541	-0.268	0.569	-0.122	0.578
	x15 One-child	-0.3	0.56	-0.196	0.574	-0.16	0.592
Individual implementation cost	x12 The employment area is consistent with the location of the university			-0.884*	0.472		
	x13 The employment area is consistent with the native place					1.575***	0.582
LR chi2		26.838		29.308		34.899	
Prob>chi2		0.005		0.004		0.0005	
Pseudo R2		0.205		0.224		0.267	

Note: ***p<0.01, **p<0.05, *p<0.1 C= Coefficient, SE= Standard Error

TABLE 4: The adjustment effect of individual implementation cost

		Model 3(a)		Model 3(b)	
		\	SE	C	SE
Social capital	x1 Parents occupation	0.827	0.943	0.610	1.058
	x3 Parents' education years	0.127	0.093	0.136	0.097
	x5 Per capita annual incomes of households	0.227	0.486	0.311	0.492
	x6 Native place	3.063***	1.155	3.400***	1.153
Human capital	x7 School record	0.475***	0.167	0.301	0.486
	x8 Student cadre	0.071	0.564	0.027	0.625
	x9 Internship experience	0.418**	0.204	0.519**	0.217
	x10 Major	0.520	0.617	0.511	0.613
Expected salary	x11 Expected salary	0.0007**	0.0003	0.0008**	0.0004
Demographic characteristic	x14 Gender	-0.472	0.608	-0.250	0.593
	x15 One-child	-0.219	0.605	-0.085	0.599
Individual implementation cost	x12 The employment area is consistent with the location of the university	-0.780	0.487		
	x13 The employment area is consistent with the native place			1.414**	0.599
	xj*x6	0.605	0.526	0.252***	0.913
	xj*x7	0.145	0.476		
	xj*x9	0.161**	0.078	-0.094	0.062
	xj*x11	0.0007*	0.0004	-0.0009*	0.0005
LR chi2			34.406		37.035
Prob>chi2			0.005		0.0007
Pseudo R2			0.263		0.283

Note: ***p<0.01, **p<0.05, *p<0.1. C= Coefficient, SE= Standard Error

The individual implementation cost has significant regulatory role in the relationship between social capital, human capital and employment area, but their mechanisms are different. On the one hand, for college graduates whose employment area is inconsistent with the location of the university, human capital (internship experience) has a positive impact on the working choice in large and medium-sized cities, and the location of university can significantly increase the probability of graduates' working in large and medium-sized cities by 17% ($\exp(0.161) - 1$); on the other hand, social capital (native place) has a positive impact on the working choice in large and medium-sized cities, native place can significantly increase the probability of graduates' working in large and medium-sized cities by 29% ($\exp(0.252) - 1$). The individual implementation cost has certain regulation effect on the relationship between expected salary and employment area, and the location of university would strengthen the relationship while the native place would weaken it, but the adjusting effect is not significant, which agrees with the fact that the regression results of the main effect are stable.

CONCLUSION AND IMPLICATION

By using hierarchical regression analysis method, this paper analyzes the effect of the social capital, human capital and expected salary on the college graduates' choice of employment area and the role of the individual implementation cost in adjusting the relation of the social capital, human capital and expected salary and college graduates' choice of employment area. The results show as follows:

Firstly, large and medium-sized cities are still the first choice for college graduates, of which the employment rate accounts for 55 percent. This employment differences show that dual labor market still exists in China, namely there are segmentations between the first labor market in large and medium-sized cities and the second labor in small towns and rural, which makes graduates' choice of working in large and medium-sized cities more reasonable. Secondly, social capital, human capital and salary expectation have a significant and positive influence on the college graduates' choice of employment area. The college graduates with good school record and internship experience, whose native place is large and medium-sized cities, are more likely to take jobs in large and medium-sized cities. Moreover, the employment tendency still holds under the condition of controlling the demographic characteristics and individual implementation cost.

Again, the individual implementation cost plays a significant regulatory role in the relationship between social capital, human capital and employment area, and has certain regulation effect on the relationship between expected salary and employment area, but the mechanism of the adjusting effect is different. Working in the location of university has positive regulating effect on human capital (internship experience) while working in the native place has positive regulating effect on social capital (native place).

Based on the above research results, this paper suggests that:

First of all, in order to alleviate structural contradiction of the employment that results from the regional distribution difference and promote the employment of college graduates, more measures need to be taken to eliminate the division of dual labor market. From multi-dimensions such as economic development, institutional reform, allocation of education resource and the construction of the labor market, the mechanism of policy in which employment guidance of the urban and rural and the central and western regions matches the regional social economy has to be built. Furthermore, the employment guidance departments in college and universities should pay attention to the improvements of quality and ability of college graduates, and broaden the channel of students' internship before graduation. At the same time, based on the different influencing effects of college graduates' university location and native place on employment area choices, the schools should provide a wider set of employment information, and make the human capital play a better role in the choice of employment area of college graduates.

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