



Academia, Salary or Family, Talent Mobility in and across China

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Abstract: Statistics shows that Chinese government spend quite a lot of fund to support talents from all over the world to work for the fast growing country. Some people argue that the fund is in a low efficiency. The government also realised the problem, especially some of the frequent mobility, and plan to build a survey system to understand the reason of talent moving and efficiency of the fund. The analysis of talents mobility helps standardize the system of human resources management, boost tap full potential of high-end talents, and reduce the costs of personnel administration. Based on the first roll survey of high-end talents mobility organized by the government in 2013, we studied the factors influencing decision-making policy of talents mobility and times of staff transfer among colleges and universities, or between academy and non-academy. The empirical results suggest that external factors such as family or personal affairs have the most powerful influence, while the pursuit of better academic capability and academic atmosphere or even higher salaries have less influence. The platform, development and atmosphere of academia have not been regarded as the priority during the allocation of human resources in current situation. Perceiving the attitudes of HR Office, as well as personal attitudes towards personnel mobility itself directly affect one's decision-making in talents' transfer.

Key words: Talents mobility; survey; decision-making; zero-inflated negative binomial model.

1. Introduction

With the fast growing of economy and wealth, both Chinese central and local governments set large amount of funds to support researchers from all over the world to work in China. For example, the Recruitment Program of Global Experts, commonly known as Qianren Jihua, Spouseed by the Organization Department of the Chinese Communist Party's Central Committee (Zhongzubu), provides each recruit with a \$150,000 tax-free relocation allowance. It is a high level support comparing with the full professor's yearly salary of around \$20,000 in the top Chinese universities. Besides the central government, local governments, universities and institutions have their own way of setting different funds to attract talents work for them, so that they can get good publications and ask for higher budget from the government's fast growth revenue. These funds encourage talents moving not only from abroad, but also among regions and institutions. Someone argues that this movement like support of innovation and talent is in a low efficiency, encourage irregular frequently moving among institutions, and bring problems for human resources management.

University is a special good area of doing research in China. The benefits includes a relatively free atmosphere of research, no need to stay in the office every day, and extra benefit of children to go to the affiliated primary and middle schools for most of the university affiliated schools are the best in the city. These make the mobility of talents from outside the university to the university, or among the universities, is not mainly for research and salary, but for extra benefits, especially for the education of their children, which makes the results of the mobility go far away from its original aims.

The government and university realized problems of frequent mobility from outside or among universities, and negative effects of the several times higher-level funds comparing with regular researchers. They started organizing survey countrywide to understand the efficiency and effects of the mobility and high-level funds.

One of the key questions is why talents prefer to move, for academic position, salary, or some other reasons. Based on the first roll of official survey, this paper will try to understand the reasons of mobility in and across China.

2. Survey and the Data

The first roll of survey was organized by Zhongzubu, Ministry of Education and Ministry of Human Resources and Social Affairs in May 2013. It collected 13277 answers from researchers and professors in 143 top universities countrywide. After cleaning, 11734, or 88.4% of the responders was efficient and included in the analysis, which shows the high quality and answer rate of survey in talents. The survey was taken in universities, but also included those who moved from other institutions, especially from abroad to the university. Table 1 shows the cleaning of data due to logical reasons.

Table 1. Cleaning of the Data

No.	Reasons for cleaning
1	Age=teaching years
2	Age >70
3	Teaching years>50, or <0
4	“Yes” in mobility or not, but “0” in mobility times, or “no” in mobility or not, but “>0” in mobility times
5	Mobility times>12
6	Age <40 but age<teaching years+20

Table 2 gives an average level description of basic variables. It shows that 35.2% of responders have the experience of mobility, and the average time of mobility for them is 1.7 times. It also gives the answer of four psychological questions, e.g. 60.6% responders are satisfied with their recent jobs after mobility, higher than the level of 52.4% for those without mobility.

Table 3 gives the first main reason of (mobility. One of the interesting results is that people without mobility would prefer salary, promotion of professional title, better welfare, support and respect. However, those with experience of mobility would prefer schooling of kids, Spouse, and other reasons, especially private reasons.

Table 2. Basic Description of the Data

Variable	Total sample	Without mobility	With mobility	Location in China		
				Eastern	Middle	Western
Ratio of mobility	0.352	0	1	-	-	-
Times of mobility	0.594	0	1.688	1.731	1.606	1.666
Age	38.9	37.1	42.2	42.5	41.9	41.7
Years of teaching	8.5	9.1	7.5	7.1	8.1	7.5
985 Universities *	0.295	0.303	0.279	0.331	0.242	0.192
Science and technology	0.633	0.654	0.595	0.581	0.620	0.601
Male	0.635	0.617	0.668	0.673	0.654	0.670
Senior title	0.636	0.574	0.752	0.774	0.733	0.718
Full professor	0.256	0.251	0.363	0.395	0.325	0.327
Associate professor	0.380	0.198	0.388	0.379	0.408	0.391
Satisfaction of recent job	0.553	0.524	0.606	0.625	0.584	0.581
Willingness for change in the job	0.252	0.267	0.223	0.200	0.250	0.252
HR office support	0.259	0.242	0.290	0.289	0.296	0.287
Mobility negative effect	0.455	0.489	0.393	0.353	0.434	0.447
Sample size	11734	7602	4132	2252	955	924

* The highest rank of universities in China, with the number of around 50.

Table 3. First Reason of Mobility

Reasons	Ratio (%)			Score (average)		
	Total	Without mobility	With mobility	Total	Without mobility	With mobility
Private						
Relations with colleagues	1.41	1.67	0.94	2.57	2.87	2.00
Residential condition	4.02	4.67	2.83	3.06	3.43	2.37
Salary	8.16	10.10	4.60	3.35	3.76	2.60
Promotion of management position	0.38	0.38	0.39	2.35	2.55	1.97
Promotion of professional title	11.31	14.60	5.25	3.22	3.67	2.39
Schooling of the kid(s)	2.85	2.04	4.33	2.69	2.96	2.19
Spouse	3.80	2.28	6.61	2.69	3.00	2.14
Others	9.61	3.59	20.69	2.79	2.78	2.80
Development of career						
Welfare of other institutions	9.11	12.34	3.17	3.43	3.94	2.49
Development of research field	14.01	12.50	16.80	3.33	3.43	3.13
Academic atmosphere	9.14	9.73	8.03	3.38	3.59	3.00
Management of the institution	3.84	4.38	2.86	3.36	3.60	2.91
Support and respect	13.05	16.71	6.32	3.46	3.73	2.96
Research fund	2.92	3.45	1.96	3.37	3.64	2.88
Others	6.37	1.57	15.22	-	-	-
Sample size	11734	7602	4132	11734	7602	4132

* It is the potential reason selection for those without mobility.

** Score means a rank from 1 to 5 to score the importance of each reason.

3. Model

What the paper focuses on is to understand why people select to move, i.e. what will influence their decision making and why someone prefer to move for more times.

We use Probit model (equation 1) to explain the reasons of mobility decision making. For whether researchers selected mobility or not (1,0), we select a set of variables X to explain, which includes basic control variables like age, gender, region, as well as factor variables like salary, promotion and private reasons. We also select variables from career development and psychological reasons.

$$y=(0,1), \quad P(y=1|X)= \Phi(\beta_0+X\beta) \quad [1]$$

For the second question why someone selects to move for more times, we use zero-inflated negative binomial model (equation 2) to explain the reason since times of mobility is a non-negative number and most of the answers will focus on 0, 1 and some other small numbers. It explains the times of mobility ($z=0,1,2,3,\dots$) by a set of variables Λ , which is similar with X in equation 1.

$$\begin{cases} P(z) = \theta, & z = 0 \\ P(z) = (1-\theta)*\text{Negbin}(\mu, p), & \log(\mu)= \beta_0+\Lambda\beta, \quad z = 1, 2, \dots \end{cases} \quad [2]$$

4. Main result

Table 4 shows the estimation of basic Probit models. We seek stable models from the first five and select the last one to do analysis. It suggests that non-985 university, male and senior title researchers prefer to move, and regional factors suggests people in Eastern China has higher probability to move. HR office support is significantly encouraging people to select mobility.

Table 4. To move or not to move: mobility decision-making model

	Model I	Model II	Model III	Model IV	Model V	Model VI
985 University	-0.148 *** (0.027)	-0.094 *** (0.028)	-0.156 *** (0.027)	-0.093 *** (0.028)	-0.237 *** (0.028)	-0.248 *** (0.028)
Male	0.140 *** (0.025)	0.099 *** (0.026)	0.101 *** (0.026)	0.101 *** (0.026)	0.048 * (0.026)	0.041 (0.026)
Age		0.062 *** (0.002)		0.062 *** (0.002)		
Teaching years	-0.019 *** (0.002)				-0.036 *** (0.002)	-0.037 *** (0.002)
Senior title			0.484 *** (0.026)	-0.015 (0.031)	0.676 *** (0.028)	0.664 *** (0.028)
Western regions	-0.051 * (0.030)	-0.006 (0.031)	-0.041 (0.030)	-0.006 (0.031)	-0.035 (0.031)	-0.014 (0.031)
Middle regions	-0.062 ** (0.029)	-0.072 ** (0.030)	-0.080 *** (0.030)	-0.072 ** (0.030)	-0.049 (0.030)	-0.029 (0.030)
Satisfaction	0.166 *** (0.026)	0.188 *** (0.027)	0.156 *** (0.026)	0.189 *** (0.027)	0.119 *** (0.026)	0.109 *** (0.026)
View of change	-0.086 *** (0.030)	-0.081 *** (0.031)	-0.096 *** (0.030)	-0.081 *** (0.031)	-0.086 *** (0.030)	-0.071 ** (0.030)
HR office support						0.161 *** (0.028)
Mobility negative						-0.215 *** (0.025)
Content	-0.311 (0.034)	-2.908 (0.075)	-0.754 (0.033)	-2.920 (0.079)	-0.516 (0.035)	-0.446 (0.038)
Pseudo R2	0.0172	0.0961	0.0322	0.0961	0.0563	0.0635
Log likelihood	-7481.8	-6881.1	-7367.7	-6881.0	-7183.8	-7129.4
Observation=11734, Dependent Variable=Mobility or not (1,0)						

We explain why some people selected to move more times by table 5 (please go to page 5), which gives similar rules as in decision-making model. After the stable checking, model VI suggests that top university, male, professorial researchers prefer to move more times, and researchers located in middle provinces prefer to move fewer times. HR office support is also significantly encouraging people to change more times.

After getting stable models, we introduce factor variables of reasons in the basic models and get table 6 (please go to page 6) to explain the reasons of mobility, and compare the importance of each reason by marginal coefficients. The results give very similar explanations of why select to move or move more times in both decision-making model and frequency model. Comparing with the reference reason as professional title promotion, schooling of kid(s), Spouse, other private reasons are the most important reasons, then salary and residential condition are the less important but significant reasons. However, good welfare, respect and relation with colleagues are not significant. If we go to the original answers of private reasons listed in the answer sheet, those private reasons concentrate on seeking a high level degree, going abroad, family gathering, taking care of parents and private interests.

5. Summary and policy suggestion

By doing the analysis of descriptive and modelling, we find the following three interesting results of talent mobility in China. Each result may give the policy makers some suggestions about rethinking the massive funding support of encouraging innovation.

Firstly, private and family reasons are the most important reasons comparing with academic position and salary. It based on the inequity of social resources distribution in China. It suggests that comparing

with the fast grow of revenue input on recruiting talent, long term social work to build an equity social environment and equal chances will be more efficient to encourage talent work effectively.

Secondly, platform of research, academic career development and academic atmosphere are far more than important to attract talents, though these factors are the most important aims for universities and institutions to encourage talent mobility by high level of funding support. It suggests that the policy should not only pay attention to those who have already had good fruit in academia, but also pay more attention to the young generation, with relatively equal and balance input to both of these two groups.

Thirdly, the attitude of HR office significantly influence the mobility, which means after planning economy, the attitude of institution is still an important factor to influence private decision making. It suggests that management department should nether stop preventing talent moving to other units, nor stealing talents from other units. Credibility of both the private talent and institution are both important to build a good mechanism.

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Table 5. More times or less: mobility frequency model

	Model I	Model II	Model III	Model IV	Model V	Model VI
985 University	-0.098 *** (0.034)	-0.075 ** (0.033)	-0.128 *** (0.034)	-0.070 ** (0.033)	-0.206 *** (0.035)	-0.224 *** (0.035)
Gender	0.293 *** (0.033)	0.216 *** (0.032)	0.244 *** (0.033)	0.220 *** (0.032)	0.185 *** (0.033)	0.176 *** (0.034)
Age		0.073 *** (0.002)		0.075 *** (0.002)		
Teaching years	-0.019 *** (0.002)				-0.036 *** (0.003)	-0.037 *** (0.003)
Senior title			0.572 *** (0.035)	-0.063 (0.039)	0.755 *** (0.038)	0.750 *** (0.038)
Western regions	-0.093 ** (0.038)	-0.036 (0.037)	-0.077 ** (0.038)	-0.037 (0.037)	-0.067 * (0.038)	-0.048 (0.039)
Middle regions	-0.150 *** (0.038)	-0.128 *** (0.037)	-0.155 *** (0.038)	-0.128 *** (0.037)	-0.122 *** (0.038)	-0.103 *** (0.038)
Satisfaction	0.094 *** (0.033)	0.110 *** (0.032)	0.081 ** (0.033)	0.113 *** (0.032)	0.062 * (0.033)	0.057 * (0.033)
View of change	-0.006 (0.038)	0.003 (0.037)	-0.010 (0.038)	0.004 (0.037)	-0.006 (0.038)	0.009 (0.038)
HR office support						0.151 *** (0.034)
Mobility negative						-0.216 *** (0.032)
Content	-0.141 (0.058)	-3.510 (0.106)	-0.712 (0.064)	-3.548 (0.108)	-0.665 (0.073)	-0.661 (0.078)
Pseudo R2	184.25	1420.63	388.63	1423.23	594.11	660.21
Log likelihood	-12214	-11596	-12112	-11594	-12009	-11976
Observation=11734, Dependent Variable=Mobility times						

Table 6. Why to move: factor analysis of mobility

Dependent var. Obs =11732		Decision-making Model		Frequency Model	
		Mobility=(0,1)		Mobility times	
		Coefficient	Marginal coef.	Coefficient	Marginal coef.
Basic var.	985University	-0.226 *** (0.030)	-0.079 *** (0.010)	-0.139 *** (0.043)	-0.092 *** (0.015)
	Gender	0.119 *** (0.029)	0.042 *** (0.010)	0.333 *** (0.038)	0.118 *** (0.015)
	Teaching years	-0.036 *** (0.002)	-0.013 *** (0.001)	-0.016 *** (0.004)	-0.013 *** (0.001)
	Senior title	0.648 *** (0.031)	0.220 *** (0.010)	0.499 *** (0.051)	0.303 *** (0.016)
	Western regions	-0.027 (0.034)	-0.010 (0.012)	-0.061 (0.044)	-0.024 (0.017)
	Middle regions	0.004 (0.033)	0.002 (0.012)	-0.089 ** (0.042)	-0.036 ** (0.017)
	Psychology var.	Satisfaction	0.107 *** (0.029)	0.038 *** (0.010)	0.060 * (0.037)
View of change		-0.013 (0.033)	-0.005 (0.012)	0.063 (0.044)	0.031 * (0.018)
HR office support		0.192 *** (0.030)	0.070 *** (0.011)	0.129 *** (0.036)	0.080 *** (0.016)
Mobility is negative		-0.143 *** (0.027)	-0.051 *** (0.010)	-0.058 (0.039)	-0.057 *** (0.014)
Private reasons	Relations with colleagues	0.072 (0.120)	0.026 (0.044)	0.155 (0.146)	0.081 (0.082)
	Residential condition	0.175 ** (0.078)	0.065 ** (0.030)	0.205 ** (0.098)	0.109 * (0.057)
	Salary	0.131 ** (0.064)	0.048 ** (0.024)	0.170 ** (0.083)	0.088 * (0.046)
	Promotion of position	0.479 ** (0.204)	0.185 ** (0.081)	0.959 *** (0.203)	0.777 *** (0.255)
	Schooling of the kid(s)	0.981 *** (0.083)	0.376 *** (0.029)	1.066 *** (0.088)	0.895 *** (0.117)
	Spouse	1.200 *** (0.075)	0.449 *** (0.024)	1.111 *** (0.082)	0.946 *** (0.111)
	Others	1.648 *** (0.060)	0.580 *** (0.015)	1.366 *** (0.067)	1.240 *** (0.100)
Development reasons	Welfare of other institutions	-0.248 *** (0.067)	-0.085 *** (0.022)	-0.315 *** (0.089)	-0.135 *** (0.034)
	Development of research field	0.663 *** (0.054)	0.254 *** (0.021)	0.691 *** (0.066)	0.438 *** (0.054)
	Academic atmosphere	0.359 *** (0.060)	0.136 *** (0.023)	0.377 *** (0.075)	0.214 *** (0.049)
	Management of the institution	0.266 *** (0.079)	0.100 *** (0.031)	0.358 *** (0.097)	0.206 *** (0.065)
	Support and respect	-0.016 (0.058)	-0.006 (0.021)	-0.041 (0.076)	-0.020 (0.036)
	Research fund	0.144 (0.088)	0.053 (0.033)	0.185 * (0.111)	0.098 (0.064)
	Others	1.899 *** (0.071)	0.625 *** (0.013)	1.523 *** (0.069)	1.576 *** (0.129)
Constant	-1.096 *** (0.057)	-	-1.480 (0.080)	-	
Log likelihood	-5881.5		-11074		