Talent Gathering in Northeastern Provinces Policy Issues and Countermeasures Based on Multiple Case Studies

Wei Wang[a] and Yunqin Wang[*][b]
Harbin University of Commerce, Harbin, Heilongjiang, China

Abstract: General Secretary Xi Jinping pointed out that "the competition for talents has become the center of the competition for comprehensive national power"; the central talent work conference in 2021 also clearly pointed out that we should accelerate the construction of the world's important talent center and innovation highland, how to gather a large number of outstanding talents has become a problem that the government needs to solve, excellent talent policy can attract a large number of What kind of talent policy can meet the needs of different regions and gather high quality talents. The study uses the method of fuzzy set qualitative comparative analysis to compare and analyze the text of talent attraction policy and talent retention policy of the three northeastern provinces and Jiangsu, Zhejiang, Shanghai, Guangdong, Beijing Hainan, Chongqing, a total of 10 provinces and cities. Suggestions are made that the talent policies of the three northeastern provinces need to strengthen legal and institutional safeguards, adopt a multi-channel approach to introducing talent, improve career support policies for maintaining female high-level talent, and improve career support-type policies such as talent training and academic exchanges.

1 INTRODUCTION

From September 27 to 28, 2021, the Central Conference on Talent Work was held in Beijing. Xi Jinping, General Secretary of the CPC Central Committee, President of the State and Chairman of the Central Military Commission, attended the conference and delivered an important speech, emphasizing the need to adhere to the Party's management of talent, adhere to the world's scientific and technological frontier, the main battlefield of the economy, the major needs of the country, the people's life and health, in-depth implementation of the strategy of strengthening the country with talent in the new era, all-round training, introduction and use of talent, accelerate the construction of the world's important talent center and innovation highland, for To provide talent support for the basic realization of socialist modernization in 2035, and to lay the foundation of talent for the full establishment of a strong socialist modernization in 2050. Talent is an indispensable factor for the development of every city. Talent is an innovative element that can promote economic and social development, and human beings who can create value for social development. According to the link of talent management, talent policy can be divided into five categories: talent attraction, talent retention, talent cultivation, talent stimulation and talent utilization, and the four are complementary to each other. The government will make talent policy from talent attraction, talent incentive, talent cultivation, talent management, talent use, talent evaluation and other aspects. Talent policies are formulated to attract talents and make them gather in a region so as to promote regional economic and technological development. About talent gathering, Liu Sifeng (2008) believes that the gathering of scientific and technological talents is a unique phenomenon in the process of scientific and technological talent flow, which generally refers to the process of scientific and technological talents flowing from different regions or units to a specific region or unit due to various factors such as economic, social, regional environment and unit conditions (Liu 2008) .Talent gathering policy refers to the policies that can realize talent gathering, such as talent

[a] https://orcid.org/0000-0001-9252-0051
[b] https://orcid.org/0000-0003-0249-6049

attraction policy, life security policy, social security policy, talent training policy supporting innovation and entrepreneurship policy and supporting enterprise policy, etc. Because the three northeastern provinces and Hainan Province are the more ordinary regions of the country's development, and Jiangsu, Zhejiang, Shanghai, Guangdong, Beijing and Chongqing regions are the more developed regions, it is beneficial to compare the differences between these two types of regions to study the direction of optimization of talent aggregation policies. Based on the above understanding, based on the existing literature and data summary and the need for talent policy optimization, the talent aggregation policies of ten provinces and cities are taken as the research objects, and the commonalities and differences of ten provinces in talent aggregation are studied and compared and analyzed in terms of talent aggregation policies.

2 LITERATURE REVIEW

Talent is a necessary factor for the prosperity and development of a region, and the development of a region cannot be separated from innovation, and young talents and domestic and foreign high-end talents are the sources of innovation, so the battle for talent is also intensifying in major cities, which has become a problem for the high-quality development of each city in recent years (Yu 2018). Appropriate talent introduction policies have a positive effect on the size of urban labor market and urban human capital accumulation (Mao, Zheng 2021). There are many scholars who believe that a good talent policy should contain the following factors: (1) a good environment should be created when introducing foreign high-level talents, enhancing the sense of integration of foreign introduced talents (Pan 2021), broadening channels to introduce high-level foreign students (Chen, Liu 2021), expand the channels for introducing talents, tilt the focus of attracting talents to the basic discipline fields, and enrich the flexible The new mode of flexible introduction of talents by means of the Internet (Zhao, Huang 2021), and the new mode of flexible introduction of intelligent talents by means of the Internet (Li, Cao 2021).

3 STUDY DESIGN

3.1 Basic Ideas

Firstly, by analyzing the text of talent aggregation policy policies in each province and city, we can summarize and refine that talent aggregation policies are divided into three major categories: financial support policies, social life protection policies, and career support policies. Secondly, we use the fuzzy set qualitative comparative analysis method to get the fuzzy set corresponding to the degree of talent gathering and the categories of talent gathering policies, and examine the different group states of talent gathering policies to promote the degree of talent gathering.

The samples are selected from only ten representative provinces and cities in China, including the three northeastern provinces, which have been losing talents, Hainan Province, which has just developed the degree of talent aggregation, and Beijing, Shanghai, and Guangdong Province, which have a high concentration of talent aggregation, meeting the requirement of diverse case selection. The fuzzy set qualitative comparative analysis method in this paper is based on Excel and fsQCA3.1b platform.

3.2 Data Collection

In order to conform to the data of the sixth and seventh census, the indicators and data affecting the degree of talent aggregation were selected by collecting the texts about talent policies from 2010-2020 from the official websites of provinces, cities and national governments as a sample, 25 initial classification codes were obtained, 9 secondary classification codes were aggregated from 66 classifications, and finally 3 variable types were refined through same-sex aggregation (as shown in Table 1). The indicators and data affecting the degree of talent aggregation are selected as shown in Table 2.

Table 1: Summary of high-level talent gathering policy classification.

First-class classification	Secondary Classification	Variable Type
Financial support for talent attraction	Financial incentives	Financial Support Policy
Project funding grants		
Settlement Allowance	Life Security	Social Life Security Policy
Housing Support		

Living allowance		
Medical and Social Security	Social Security	
Talent Settlement		
Obtaining a visa and residence permit		
Family Settlement	Relocation of family members	
Child Enrollment		
Family Medical and Social Security		
Family work		
Publicity Contribution	Encourage respect	Business Support Policy
Award and title evaluation		
Promote project establishment	Support innovation and entrepreneurship	
Promote the transformation of scientific research results		
Allow self-built project teams		
Provide training opportunities	Talent Development	
Provide academic exchange opportunities		
Encourage women to choose when to retire	Team Assurance	
Working hours for nursing mothers		
Solve the difficulties in learning and working of talents		
Expand the two-way circulation mechanism of the project enterprise	Enabling Companies	
Reduced tax rate for high-tech enterprises		
Guiding enterprises to participate in training talents		

Table 2: Table of variable measurement indicators and data sources.

Variable Type	Variable Name	Measurement indicators	Data source
Result Variables	Ten years of high-level talent growth level	The number of high-level talent growth in the past ten years	National Bureau of Statistics and provincial and municipal statistical offices
Cause Variables	Financial Support Policy	Frequency of financial support policy	The official website of the Human Resources and Social Security Bureau of each province and city and the people's government of each province and city
	Social Life Security Policy	Social life security policy frequency	
	Business Support Policy	Frequency of business support policies	

According to the variable measurement index and data source table, the raw data of the influence variables and outcome variables of the degree of talent aggregation in ten Chinese provinces and cities were obtained, as shown in Table 3.

Table 3: Raw data table of the influence variables and outcome variables of the degree of talent aggregation in ten Chinese provinces and cities.

Province and city variables	Influence variables			Result Variables
	Frequency of financial support policy	Social life security policy frequency	Frequency of business support policies	The number of high-level talent growth in the past ten years (10,000 people)
Heilongjiang Province	6	13	6	123.76
Jilin Province	2	11	12	131.33

Liaoning Province	3	10	2	252.42
Jiangsu Province	3	9	18	730.99
Zhejiang Province	3	7	16	589.25
Shanghai	4	17	13	337.11
Guangdong Province	20	14	16	1121.56
Beijing	3	10	14	301.27
Hainan Province	4	21	6	72.95
Chongqing	6	15	10	244.72

The key to the fuzzy set qualitative comparative analysis method is data calibration, which transforms the raw data into a fuzzy set and obtains the variables to match the external criteria. For the analysis using fsQCA, the antecedent condition and the outcome are considered as a set respectively, and each case has a corresponding affiliation score in the set, and the direct method is used to calibrate the outcome and condition variables into fuzzy sets. Referring to existing studies, the 95%, 50%, and 5% quantile values of the case data for the outcome variables and antecedent conditions were set as three qualitative anchor points for full affiliation, crossover point, and full disaffiliation, respectively. The calibration function calibrate (x, n1, n2, n3) provided in fsQCA is used to calibrate the fuzzy set of the original data, where x is the variable, n1 is the x value corresponding to the fully affiliated in the target set, n2 is the x value corresponding to the intersection point in the target set, n3 is the x value corresponding to the fully unaffiliated in the target set, and the fuzzy set of each variable of the case is determined on the basis of the above three anchor points affiliation, the calibrated fuzzy set affiliation table is shown in Table 4.

Table 4: Fuzzy set affiliation table of influence variables and outcome variables of talent aggregation degree in ten Chinese provinces and cities.

	Influence variables			Result Variables
Province and city	The frequency offinancial support policiesfs	Social life security policy frequencyfs	Frequent business support policiesfs	The number of high-level talent growth in the past ten years (10,000 people)
Guangdong province	0.99	0.7	0.91	0.98
Heilongjiang Province	0.68	0.6	0.1	0.07
Chongqing Municipality	0.68	0.78	0.3	0.37
ShanghaiMunicipality	0.54	0.89	0.58	0.57
Hainan Province	0.54	0.98	0.1	0.03
Liaoningprovince	0.19	0.19	0.03	0.4
Jiangsu province	0.19	0.1	0.97	0.88
ZhejiangProvince	0.19	0.03	0.91	0.8
Beijing	0.19	0.19	0.73	0.53
Jilin province	0.01	0.32	0.46	0.08

The degree of explanation of the outcome variables by individual influence variables was analyzed to determine their explanatory power, and variables with consistency greater than 0.9 were considered essential variables and could explain the outcome variables independently, while variables less than 0.9 needed to explain the outcome variables together with other variables. The consistency and coverage of variables were analyzed by faQCA3.1b software, and the results were shown in Table 5, and

the consistency of all variables was is lower than the threshold value of 0.9, indicating that the variables alone cannot explain the outcome variables and are not enough to become a necessary condition for the degree of talent aggregation, and the group analysis of the influencing variables needs to be continued.

Table 5: Consistency and coverage analysis.

	Consistency	Coverage
The frequency of financial support policiesfs	0.585987	0.657143
~The frequency of financial support policiesfs	0.745223	0.605172
Social life security policy frequencyfs	0.494692	0.487448
~Social life security policy frequencyfs	0.723992	0.653257
Frequent business support policiesfs	0.891720	0.825147
~Frequent business support policiesfs	0.392781	0.376782

Conditional group analysis using fsQCA3.1b, as shown in Table 6, there are 2 different combinations of influence variables combinations affecting the degree of talent aggregation, and the agreement rate is higher than 0.8, which indicates that these 2 combinations of influence variables have strong explanatory power, in addition the total agreement rate of conditional group analysis is higher than 0.8, which indicates that among the cases that meet these two combinations of influence variables, there are more than 84.8% of talent aggregation degree is higher, and the total coverage rate of 0.832 indicates that the combination of the 2 influence variables can explain 83.2% of the cases with talent aggregation degree is higher, according to the combination of the 2 influence variables, the factors affecting the degree of talent aggregation can be further analyzed, and it can be seen through the group state 1 and group state 2 that the career support policy can promote talent aggregation.

Table 6: Combination of influence variables of talent aggregation.

	Configuration 1	Configuration 2
Frequency of financial support policy		
~Frequency of financial support policy		
Social life security policy frequency		●
~Social life security policy frequency		
Social life security policy frequency	●	●
~Social life security policy frequency	○	
Raw Coverage	0.662	0.445
Unique Coverage	0.383	0.169
Consistency rate	0.818	0.857
Overall coverage	0.832	
Overall consistency	0.848	

●indicates the presence of the influencing variable.○indicates that the influencing variable is not present.A blank indicates that the influencing variable does not affect the result.●Indicates that the influence variable is more important.

4 RESEARCH CONCLUSIONS AND RECOMMENDATIONS

4.1 Research Findings

Local governments attach great importance to talents as shown by the policies formulated by each region to gather talents. From the results of the analysis, it can be seen that the talents in the three northeastern provinces have been in the outflow state, while the talents in the rest of the provinces and cities are in the inflow state. One of the reasons for the outflow of talents from the three northeastern provinces is the bad climate and economy, and the other reason is the lack of perfection in talent gathering and policy

development. However, the development of talent gathering policies is another major factor that causes the outflow of talent. Although there are many similar combinations of talent gathering policies developed in the three northeastern provinces and the rest, there are too few career support policies in the three northeastern provinces, and because the basic environment in the three northeastern provinces is not as good as other provinces and cities, the talent gathering policies in the three northeastern provinces should be developed with more local characteristics of their own. They should choose their own local characteristics to attract talents according to local conditions.

4.2 Talent Gathering Policy Suggestions

4.2.1 Strengthen the Legal System Protection

In response to the problem of no perfect talent policy laws and regulations, the local government should make local laws and regulations about talent in order to keep the continuity and stability of talent policy, because now there is no perfect talent policy laws and regulations. The legal rights and interests of the introduced talents cannot be protected. And because the three northeastern provinces are mostly financial support policies and social life protection policies, they need to have perfect legal regulations to guarantee the smooth implementation of the policies. Local laws and regulations on talent policy will increase the scientificity, legality and feasibility of talent policy and ensure the smooth implementation of the policy. Strengthening the legal system will also guarantee that talents can stay in the region after inflow.

4.2.2 Improve Career Support Policies for the Maintenance of Female High-Level Talents

While national policies have tried to preserve women's rights and freedom to work as much as possible, women's job opportunities are generally less than men's due to marriage and pregnancy. It is true that most of the high-level female talents have problems during pregnancy and nursing. Policies should be developed to address the difficulties women face during pregnancy and nursing. For example, special childcare services and flexible working system should be set up so that female executives can focus on their work without the

trouble of pregnancy and nursing. A comprehensive policy to deal with the development of female high-level talents and solve the problems of female high-level talents in their working life can attract female high-level talents to integrate.

4.2.3 Using Big Data to Gather Talents

Big data refers to the huge information data that has a huge scale of information data volume and cannot be managed, processed and applied by mainstream software tools in a reasonable time. The huge number of talents can rely on new processing technologies to complete the processing of big data, such as: cloud computing, distributed database, data mining, massively parallel processing, etc. Big data processing has comprehensive coverage, replacing the traditional sample statistics, and the results are more accurate and have personalization. The right talent can be found better. With the emergence of Artifici al Intelligence, Blockchain, Cloud Computing, Big Data and other "ABC" technologies, the era of human "digital intelligence". In this context, the use of new science and technology to empower talent training. At the same time to do a good job of database information security protection, you can use VPN technology (virtual private network), on the basis of the public network to establish a private network, connected to the database access channel, to achieve encrypted communication, thus playing a protective role in the security of database information.

4.2.4 Improve Career-Supporting Policies Such as Personnel Training and Academic Exchanges

To increase the cultivation of locally trained or working in the local talent, for the local urgently needed industries to focus on the training of talent, the establishment of special projects. We support the two-way circulation mechanism between project members and enterprises, encourage senior personnel of enterprises for lecture training for school students, and support the system of distributing funds from the project team after the transformation of scientific research results to train talents needed by enterprises and key and urgent industry.

REFERENCES

Chen Jie & Liu Zuocheng. (2021) "Institutional Construction for Promoting the Return of Overseas Educated Talents under the New Situation - Based on the Perspective of China-US Economic and Trade

Disputes", Science and Technology Management Research, Vol. 14, p. 33

Li Zhi & Cao Yuxin. (2021) "Research on the dilemma of flexible talent attraction in the western region of China and the way forward", Journal of Chongqing University (Social Science Edition), http://kns.cnki.net/kcms/detail/50.1023.C.20210607.1557.002.html, June 18

Liu Sifeng & Wang Ruilan. (2008) "Mechanism, Effect and Countermeasures of Science and Technology Talent Clustering", Journal of Nanjing University of Aeronautics and Astronautics (Social Science Edition), No. 1, p. 47

Mao Fengfu & Zheng Fang. (2021) "How has the talent introduction policy affected the labor market? , Business Economics and Management, Vol. 11, p. 62

Pan Qingzhong. (2021) "Exploring the strategy of introducing, motivating and integrating international talents", People's Forum - Academic Frontier, Vol. 24, p. 33

Yu Jiadong. (2018) "How Cities Properly Attract and Retain Talent," China Party and Government Cadre Forum, Issue 6, p. 27

Zhao Jianjia & Huang Yuanxi. (2021) "Analysis of the characteristics of the group of overseas introduced talents based on the resume analysis method", Science and Technology Herald, Vol. 10, p. 124