

The Brain Drain Phenomenon and Countermeasure Research in Three Northeastern Provinces

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Abstract: Talent is the primary productive force. At present, the obvious brain drain and imbalanced population structure in the three northeastern provinces have become the primary factors hindering their economic development. How to introduce and retain talents has become a big problem facing the government and enterprises. Therefore, with human resources as the starting point, this paper will focus on exploring the main causes of brain drain in the three northeastern provinces, and puts forward corresponding mitigation policies based on actual conditions.

Keywords: Three northeastern provinces; Brain drain; Reason exploration; Mitigation strategy

1. Introduction

In 2016, the GDP growth rate of the three northeastern provinces was much lower than the national level, among which Liaoning province showed negative growth. Many enterprises are in a long-term downturn, which has aroused the concern of all sectors of society. When discussing the causes of the economic downturn, the problem of brain drain has become a major concern. In 2018, General Secretary Xi pointed out to the talent work at the Northeast Symposium that "we must take measures in many ways to create conditions for keeping people in mind, so that all kinds of talents can feel at ease, safe and secure" pointing directly to the current pains of talent loss in Three Northeastern Provinces.

2. Literature Review

So far, the academic community has paid attention to the problem of brain drain in the three northeastern provinces. Xiao Yunting(2019) believes that in recent years, the brain drain in Northeast China has been severe, and the population structure has become unbalanced [2]. Jiang Yu(2016) believes that the outflow of population is not only manifested in quantity, but also in the loss of human capital. The outflow of regional population includes the dual outflow characteristics of quantity and quality [3]. Zhao Jing's(2019) research found that the outflow of talents in the three northeastern provinces is characterized by youth, high education and high skills, and is mainly based in developed cities such as Beijing and Shanghai [4]. Li Qiang believes that the atmosphere of public opinion derived from ideological concepts has a potential and profound influence on the brain drain [1]. Taking the opportunity of brain drain in the Northeast old industrial

base as an opportunity, Meng Shan(2020) emphasized the comparison of the per capita GDP and average wages of the three provinces with the national average after the reform and opening up, as well as changes in the resident population, in order to explore the cause of brain drain in the northeast old industrial bases reason [5]. Taking Harbin university students in northeast China as the research object, Qingqu Shi studied their willingness to stay in Harbin and explored the countermeasures of brain drain [8]. This article tries to find out the main reasons for the massive loss of talents from the perspective of studying the current situation of human resources in the above three provinces, and puts forward the countermeasures to ease the loss of talents, so as to break the pain point one by one.

3. Analysis of the Current Situation of Human Resources

3.1. Slow population growth

From the birth rate point of view, the birth rates of Heilongjiang and Liaoning were 7.35 ‰ and 8.8 ‰ respectively in 2010, but the birth rates of the two provinces fell to 6.22 ‰ and 8.1 ‰ in 2017, which was significantly lower than the national birth rate of 12.43 ‰ in 2017; Judging from the comparative changes in birth rate and death rate, the death rate in Heilongjiang Province was 5.83 ‰ in 2010, which was 1.5 thousandths below the birth rate, indicating that the population is increasing. But since 2015, the death rate of the population has turned beyond the birth rate, showing a negative population growth trend. Beyond that, Take Jilin province for example, the average number of primary school students per 10,000 population was 563 in 2007, 518 in 2012, and 449

in 2017. The average number of primary school students per 10,000 population has declined for many years. The above data analysis shows that the population growth in the three northeastern provinces is slow, the birth rate is low, and the talent reserve force is insufficient.

3.2. Unbalanced age structure

In terms of the age structure of the population, the proportion of the population aged 0-14 in Heilongjiang and Liaoning provinces in 2010 was 11.96% and 11.42% respectively, and in 2017 it dropped to 10.74% and 10.27% respectively. It not only shows a declining trend year after year, but is far below the national average of 16.8%.The number of people over 65 years of age has risen year after year and is higher than the national average. From the perspective of dependency ratio, take Liaoning province as an example, the dependency ratio of young children in 2017 was 13.62%, significantly lower than the national average of 23.4%, and the dependency ratio of the elderly population was 19.03%, four percentage points above the national average. The above data shows that the population structure of the three northeastern provinces is unbalanced and the aging phenomenon of the population is prominent, which seriously restricts the release of the economic development potential of the three northeastern provinces [6].

3.3. The phenomenon of population emigration is obvious

According to relevant data, the net population outflow of the three northeastern provinces expanded from 404,000 in 2000 to 2.19 million in 2010. Take Changchun City as an example, the net move-in was 29,000 in 2006, the net move-in was 10,000 in 2008, the net move-out was 4,307 people in 2016. Within ten years, Changchun changed from a city with net moving-in population to a city with net moving-out population, and its population decreased for many years. According to the relevant investigation, the population that moves out is compound outstanding talent mostly, the population moves out the phenomenon will certainly affect the economic development of the three northeastern provinces to a great extent.

4. An Analysis of the Causes of Brain Drain in the Three Northeastern Provinces

4.1. Low labor wages

The wage level of labor force is affected by a variety of factors, such as the region's economic development potential, labor supply and demand, and employment opportunities. "Human Incentive Theory" mentions that after meeting the low-level needs of physiology, safety, and socialization, people will pursue high-level respect and self-actualization, and it is endless [5]. At present, the vast majority of people in the three provinces have

achieved lower-level needs and started to pursue respect and self-realization. In terms of employment, it is natural to choose to develop cities with great potential, good salary and employment opportunities in order to seek better development space and self-realization. This is undoubtedly a major cause of brain drain in the three northeastern provinces.

Table 1. Comparison of labor force wages with the national average

Years	2013	2014	2015	2016	2017
Heilongjiang	40794	44036	48881	52435	56067
Jilin	42846	46516	51558	56098	61451
Liaoning	46310	49110	53458	57148	62545
Nationwide	51483	56360	62029	67569	74318

From 2013-2017, the comparison of the "average wages of employed persons in urban non-private units" in the three northeastern provinces with the national average shows that: The wage levels and wage growth rates of the three provinces for many consecutive years are lower than the national average, and they are gradually decreasing from south to north. Workers who pay the same amount of work will choose areas with high pay, and companies with high wages will be more able to stimulate the enthusiasm and creativity of employees, so that employees are more engaged in work, resulting in higher salaries, which is a virtuous circle. Therefore, low labor wages in the three northeastern provinces will inevitably lead to brain drain.

4.2. Unreasonable industrial structure

The industrial structure of the three northeastern provinces is dominated by industry, and economic development mainly depends on energy extraction, large-scale equipment and mineral oil. Take Heilongjiang Province as an example, the contribution rate of the primary industry to the GDP in the past decade has risen steadily, the scale of secondary industry has declined, and the rate of decline has gradually accelerated. The labor force and resources are gradually shifting to the first and third industries. From this point of view, the direction of industrial upgrading in Heilongjiang Province is correct, but it is still lagging behind the national industrial upgrading rate. A survey found that the top three industries with the highest market demand are the Internet, fund investment, and real estate industries. These industries have a large demand for highly-educated professionals, and the three northeastern provinces are lagging behind in the development of the above three industries, with fewer enterprises and slow development. The three northeastern provinces are known as "the old industrial bases in the northeast". Such industries do not have high educational requirements for labor, and are mostly production-oriented occupations. Although there are many top universities in the Northeast region, the supply and demand

of the comprehensive talents cultivated by the universities and the professional talents of the three provinces in the east are unbalanced. As a result, a large number of high-quality and highly-educated comprehensive talents are flowing to the newly developed provinces and cities, resulting in brain drain.

4.3. Developed cities attract

From the perspective of climate and environment, the geographic location of the three northeastern provinces is northerly, with long and cold winters and severe snow accumulation, making travel difficult. In comparison, in the developed cities in the south-central region, the temperature is more suitable, the climatic environment is more pleasant, and the transportation is convenient and developed. Therefore, local residents will choose to move out to enhance their comfort, and many of them have talents. But this is not the main cause of brain drain. From the perspective of job selection, most of the current job seekers are post-90s, and their obvious job-seeking feature is to follow their own career-seeking interests [2]. Nowadays, with the online society developing rapidly and the media industry appearing, and these young people will tend to seek employment in online-red cities, such as Jiangsu and Chongqing, and these cities will have broader development space and welfare benefits. Therefore, the attraction of developed cities is an important reason for the outflow of some highly knowledgeable talents in the three northeastern provinces.

4.4. Inadequate national policy guidance

With the continuous expansion of China's opening to the outside world, the country's policy guidance to coastal developed cities has been constantly updated, leading to different degrees of talent aggregation, different types of employment or self-employment. In addition, the 2014 APEC summit was held in Beijing, the 2016 G20 Hangzhou summit was held in Hangzhou, and the 2017 BRIC leaders meeting was held in Xiamen. These actions have substantially enhanced the local political, economic, and cultural development of the above cities, strengthened the impact of these cities in the hearts of the people, brought together talents in these regions, and laid a solid foundation for the future development potential. National policy guidance has greatly promoted the development of a region. Therefore, an important reason for the brain drain in the three northeastern provinces is insufficient policy guidance.

5. Countermeasures to Alleviate Brain Drain in the Three Northeastern Provinces

5.1. Encourage people of childbearing age to give birth and strengthen the reserve force of talents

In order to alleviate the current situation of brain drain in the three northeast provinces, it is necessary to improve the fertility rate and increase the reserve force of talents from the perspective of human resources. Since October 2015, in order to ease the problem of aging population and deal with the imbalance of population ratio, the country has comprehensively opened the two-child policy. But since the implementation of the policy, the fertility rate and population ratio of the three northeastern provinces are not ideal. The natural population growth rate of Heilongjiang Province in 2015-2017 and Liaoning Province in 2017-2018 is negative. Surveys show that most people of childbearing age have low desire to have children mainly because of the high cost and economic pressure of raising children. Therefore, the government should not only relax the birth policy, but also increase government subsidies to improve the social security level and public service capacity, such as extending paid maternity leave [7], increasing the reimbursement rate of minors' medical insurance and improving the quality of compulsory education. Only in this way can we guide the people of childbearing age to give birth, raise the fertility rate and increase the reserve force of talents.

5.2. Optimize industrial structure, economic transformation and upgrading

The optimization of industrial structure is a process to promote the rationalization and advanced development of industrial structure in three northeastern provinces. Firstly, actively develop modern agriculture. Implement the transition from traditional agriculture to modern agriculture, use scientific farming machines to guarantee the production of major grains such as japonica rice, corn and soybeans, and create a high-yield and efficient main grain production area in Northeast China to attract agricultural talents. Secondly, we should make use of the unique advantages of the old industrial base, and cooperate with Harbin Institute of Technology and other scientific and technological universities to research and develop efficient industrial development machines and emerging industrial technologies. Integrate Internet technology into the industrial chain, break the constraints of the traditional planned economic system and the status quo of heavy industry as the pillar industry, and provide a career platform for industrial talents to display their talents. Finally, vigorously develop modern service industry. Actively draw experience from developed countries and regions, and find new development points of service industry in northeast China with the help of increasingly vigorous Internet technology. For example, it can use its natural environment to learn from other countries in the same latitude to growth tourism, attract tourists from all over the world, and build a special tourism zone in northeast China.

5.3. Build talent project, introduce and retain all kinds of talents

At present, the brain drain of the three northeastern provinces has seriously affected the regional economic and social development. In order to achieve the two-way goal of retaining existing talents and introducing external talents, the three provinces must focus on creating a talent project, creating various conditions and opportunities conducive to the inflow of talents, and fundamentally reversing the situation of brain drain. On the part of the government, the priority of the "talent project" should be clearly identified, and the top leadership should take over personally and mobilize the whole society to pay attention. In addition, we should make full contact with all branches, personnel, technology and management, unify all forces to allocate superior resources, provide a good platform and opportunities for high-quality talents, and strive to build a "talent project" [1]. For enterprises, increase investment in R & D and time for scientific and technological innovation activities, and cultivate a great number of technical talents with innovative capabilities. To build a "Northeast New Industrial Base" based on the "Northeast Old Industrial Base", in order to attract the inflow of industrial and technical personnel from all over the country and contribute to the revitalization of the Northeast.

5.4. Improve welfare benefits and optimize the soft environment for talents

Welfare treatment is an important parameter to show talents to stay. In addition to the basic five insurances and one pension, residents should also be provided with meal allowances, transportation allowances, and housing allowances. For example, the weather in the three northeastern provinces is severely cold, and the government can issue related welfare policies to support winter heating-free fees. Secondly, the wages of employees should be greatly increased to stimulate employees' motivation [8]. Then, companies are encouraged to implement employee incentive systems, such as the selection of weekly or monthly outstanding employees to provide additional subsidies or study abroad opportunities. Finally, for children's education, a graded policy should be implemented, primary schools to increase enrollment rate and improve teaching facilities; secondary schools to strengthen the teaching staff and optimize the teaching environment; universities should reduce and exempt part of the tuition fees and enhance food subsidies. The migration of talent to a place not only considers the city's wel-

fare, but also attaches great importance to the local talent soft environment, including the cultural environment, the innovative atmosphere, the degree of rule of law and the degree of respect for talents [4]. Therefore, while guaranteeing the welfare of residents, the three northeastern provinces should also strengthen humanized management, create a good atmosphere of respecting knowledge and talents, and provide a strong guarantee for retaining talents.

6. Conclusion

Talent is the first resource and it is essential to ensure the retention of talent. Both the government and the enterprise should proceed from the actual needs of talents, truly comprehend the needs of them, and provide a certain amount of spiritual security on the basis of satisfying material security. Encourage child-bearing at the right age, create a relaxed working atmosphere, and build more soft environments conducive to entrepreneurship by talent officers. Under the guidance of good policies, not only can we bring in more talents, but also retain more backbones, injecting a steady stream of momentum into the economic and social development of the three northeastern provinces.

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