

Evaluation and Application of Shortage of Talents in Technology-Led Development Zone

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It is a common problem for many development zones in China to solve the problem of local talent shortage by attracting talents in short supply. However, almost all development zones have only preliminarily selected the general scope of talents in short supply. So far, there is no scientific evaluation method for whether the talents in short supply are really in short supply and how the shortage degree is. Based on the background of China's development and the concept of shortage of talents, combined with the positioning of technology oriented development zones in China, this paper puts forward an easy to operate and quantifiable evaluation model of shortage of talents in technology oriented development zones, and illustrates the evaluation process and its application with practical cases. On this basis, a new evaluation process of shortage of talents is refined. It is expected that through the research of this paper, we can promote the standardization and scientization of the assessment of the shortage of talents in technology oriented development zones, and provide new ideas for solving the problem of shortage of talents in China's technology oriented development zones, and provide reference for developing countries to solve the problem of regional talent shortage.

Key words : technology oriented development zone; shortage of talents; shortage degree; evaluation; application

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INTRODUCTION

There are many kinds of development zones, the two most representative development zones in China are high-tech development zones and economic and technological development zones[1] this paper refers to these two types of development zones as technology-led development zones. The development of technology-led development zones can not be separated from the support of talents. How to attract outstanding talents to the technology-led development zones has become a common problem for all technology-led development zones.

The study found that factor input, represented by human capital, material capital and energy consumption, and total factor productivity, represented by technological progress and efficiency, had almost equal effects on economic growth[2] Whether it is human capital, technological progress, efficiency, can not be

separated from the support of talent. As a result, more and more Chinese local governments recognize that talent, especially the shortage of local talent, is the key to promoting local economic growth, so more and more cities are starting to develop a list of scarce talents[3-4] In order to accelerate the gathering of scarce talents in the city and promote the development of related industries in the city.

Although compiling the list of scarce talents, help alleviate the contradiction between supply and demand in the talent market[5] To attract more talented people to gather in the development zones, but so far, whether cities are compiling the list of scarce talents or the development zones are compiling the list of scarce talents, they have only initially selected the approximate range of scarce talents. Is it really scarce for the initially selected scarce talents? What is the degree of shortage? Can we formulate targeted solutions according to the different shortage of talents? It is a common

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problem that every city or development zone faces when formulating the shortage talent catalogue or the shortage talent attraction policy. To solve these problems, we must construct a quantitative and easy-to-operate evaluation model, evaluation criteria and evaluation process.

OVERVIEW

At present, China is in urgent need of industrial upgrading, which is inseparable from the support of scientific and technological R & D talents. Therefore, the current shortage of talents in China is mainly reflected in R & D high-tech talents, as well as senior management talents who transform technology into products and let consumers pay. Specific to a development zone, due to its different leading industries, the demand for talents is also completely different. Therefore, the selection or evaluation of talents in short supply should be deeply combined with the local industrial planning and industry layout.

Although there is no uniform definition of scarce talents so far, from the word "shortage", it mainly contains two meanings: one is "tight", that is, the urgency of talent demand; the other is "lack", that is, the scarcity of talents. The causes of scarcity can be manifested in two aspects, one is the scarcity of talents, the other is the scarcity of talent quality, high quality talents, generally more scarce than ordinary talents. Therefore, from the point of view of the connotation of the shortage of talents, the reasons for the shortage of talents can be attributed to three aspects: first, the shortage caused by the demand for talents, such as the quantity of talent demand and the urgency of talent demand, the higher the demand, the higher the shortage caused by talent demand; second, the shortage caused by talent supply, such as the quantity of talent supply, the mobility of talent needed, and the treatment given to talent, will affect the talent supply. The more talent supply, the lower the talent mobility, the lower the talent treatment, the less talent supply; Third, the shortage caused by talent quality, the higher the requirement of talent quality, the stronger the scarcity and the higher the degree of talent shortage.

For most technology-led development zones, financial funds are limited, even if they are abundant, but the cost of attracting scarce talent is limited. Therefore, attractive policies, such as housing subsidies, talent subsidies, etc., can often be formulated only for very or relatively scarce posts, and are often suspended or otherwise resolved for generally scarce posts. The traditional talent selection method only defines the general scope of the shortage of talent, does not distinguish the shortage of talent, or even if there is a shortage of evaluation, but also more subjective, no scientific, quantitative methods and processes, which also

leads to local governments unable to formulate targeted talent shortage measures according to the shortage of talent, which makes the selection of talent shortage and the establishment of talent shortage catalogue in most regions more symbolic than practical. In practice, the local government can not effectively guide the formulation of targeted talent attraction policy.

At present, there is little research literature on the evaluation of scarce talents. Yao Zhiwen constructs the evaluation index system of scarce talents, and evaluates them from three dimensions: the number of talents, the quality of talents and the supply of talents[6] The evaluation system does not take into account the demands of the key industries supported by the government. At the same time, the three evaluation indexes of quantity, quality and supply are too extensive and subjective, and there is no objective evaluation standard that can be referenced and relatively quantified. Yan Hongxia and others only put forward the suggestion of cultivating and introducing the relevant scarce talents in Hangzhou's future industry through the list of scarce talents in the existing future industries, and did not construct the evaluation system of the scarce talents[7] Most of the other studies on the shortage of talents are focused on the shortage of talents in a certain type of occupation, such as the shortage of skilled talents[8] A Study on the Shortage of Talents in Hospitals[9-10] A Study on the Shortage of Fitter[11] or the training of scarce talents, such as e-commerce talents[12] Cross-border e-commerce business English talent[13] Culture research. In the existing literature, there is almost no research on the evaluation of scarce talents from the perspective of the development zone.

At present, there are two main ways to make the catalogue of scarce talents in China: first, relying on the release of the industry, the people's social departments and the competent departments of the industry jointly issue the catalogue of urgently needed specialized talents; second, the information collection and collection will be issued, that is, led by the people's social departments, collecting and summarizing the talent needs of enterprises and institutions, and then publishing it uniformly[14] The fundamental difference between these two methods is that the information collection objects are different in the process of making the catalogue. The first way is to take the industry competent department as the information collection object, the industry competent department understands the local industry development situation better, can forecast the possible industry talented person need from the macroscopic level, or the industry future development demand, But the actual talent demand of the enterprise, as well as the market talent supply and demand situation is not clear;

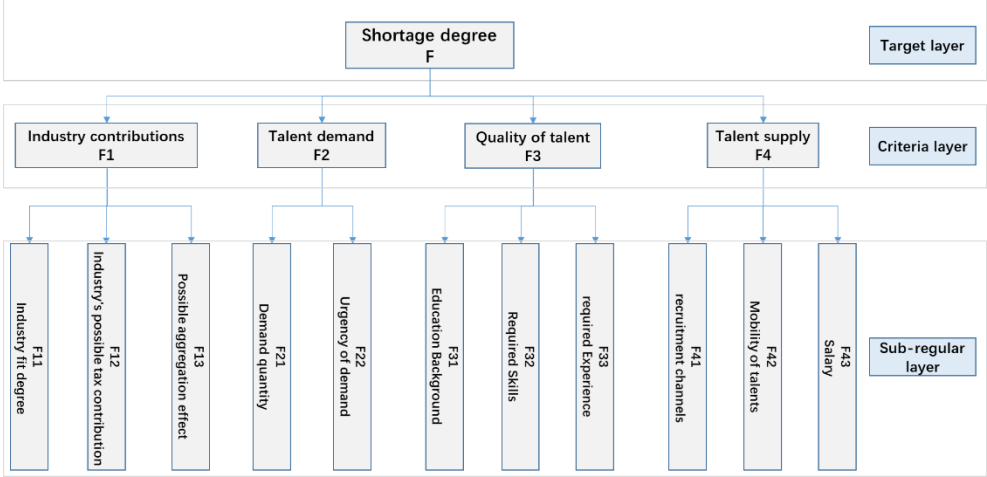
The second way takes the local enterprises and institutions as the information collection object, the enterprises and institutions can clearly understand the enterprise's own talent demand, but the industry and the market talent demand understanding is limited, through this way collects the talented person demand, Reflect the urgent needs of enterprises and institutions, not necessarily meet the needs of local industry development. These two evaluation methods, except for their own defects, can not assess the shortage of talent.

To sum up, it is of great practical significance to establish a set of scientific evaluation methods and processes for the shortage of talents. In terms of evaluation methods, we should choose a relatively scientific evaluation dimension, which not only takes into account the development needs of regional industries, but also meets the connotation of scarce talents themselves. At the same time, we should establish detailed evaluation indicators and evaluation criteria to ensure the objectivity of the evaluation process.

On the one hand, it is necessary to take into account the development needs of the development industry of the development zone, on the other hand, it is necessary to meet the connotation of the shortage of talents. From the development demand of the development zone industry, the shortage of talents in the development zone, first, should be the industry led or encouraged by the development zone, can be measured by the industry fit evaluation index, that is, the industry led or encouraged by the development zone should be higher, otherwise the score should be lower; second, the sustainability of the talent shortage policy in the development zone should be considered. If the industry in which the shortage of talents can bring greater tax revenue to the development zone, it should be given a higher score, otherwise it should be given a lower score; Third, it is necessary to consider the agglomeration of the industries in which scarce talents are located. If the industries in which they are located can lead more enterprises to gather, attract more outstanding talents to come to

the development zones for employment, and indirectly promote the development of local industries, they should be given a higher score. Otherwise, a lower score should be given. From the point of view of the connotation of the shortage of talents, the reasons for the shortage of talents have been analyzed, mainly in the three aspects of talent demand, talent quality and talent supply. In the aspect of talent demand, this paper mainly evaluates the quantity of demand and the urgency of demand, which should be given a higher score instead of a lower score. In the aspect of talent quality, this paper evaluates the shortage of talents with high educational requirements, skill requirements and experience requirements, which should be given a higher score and vice versa; In terms of talent supply, this paper evaluates from three aspects: recruitment channel, position flow and position treatment, which need to be recruited through professional channels, indicating that the market supply is less, higher score should be given, and lower score should be given; the position mobility of the scarce talent is small, indicating that the market supply is relatively small, higher score should be given, otherwise lower score should be given; if the development zone provides lower salary for the scarce talent position, does not have market competitiveness, it is difficult to attract talent, so it needs to give a higher score, vice versa. In summary, the evaluation of the shortage of talents in the technology-led development zone needs to be evaluated from the following four dimensions: first, industry contribution; second, talent demand; third, talent quality; and fourth, talent supply. AHP analytic hierarchy process (analytic hierarchy process (analytic hierarchy process, abbreviated AHP, refers to the decision method of qualitative and quantitative analysis on the basis of decomposing the elements always related to decision into goals, criteria, schemes, etc.), through the target layer, criterion layer and sub-rule layer, this paper constructs the evaluation model of shortage of talents in technology-led development zones as shown in figure 1.

Figure 1 Evaluation Model of Shortage of Talents in Technology-led Development Zone



EVALUATION WEIGHTS AND EVALUATION CRITERIA

After constructing the evaluation model, it is necessary to confirm the evaluation weight of each level of the model and the evaluation criteria of each evaluation index.

Model Weights

Table 1 Determination Matrix of Target Layer and Criteria Layer

Objectives - Criteria layer	F 1	F2	F 3	F 4
Industry contribution (F 1)	1	2	1/2	2
Talent needs (F 2)	1/2	1	1/3	1
Talent quality (F 3)	2	3	1	3
Talent supply (F 4)	1/2	1	1/3	1

After the normalization of Table 1, the eigenvectors of the criterion layer relative to the target layer can be obtained as follows:

$w_1=[0.27\ 0.18\ 0.38\ 0.18]$ (1)

From the results of feature vector calculation, it can be seen that in the dimension of shortage assessment, the experts involved in the evaluation believe that the highest factors affect the shortage degree are talent quality ,38% of the impact on

$$\begin{pmatrix} 1 & 1/2 & 1/4 & 1/2 \\ 2 & 1 & 1/3 & 1 \\ 4 & 3 & 1 & 3 \\ 2 & 1 & 1/3 & 1 \end{pmatrix} \begin{pmatrix} 0.27 \\ 0.18 \\ 0.38 \\ 0.18 \end{pmatrix} = \begin{pmatrix} 1.16 \\ 0.61 \\ 1.97 \\ 0.61 \end{pmatrix}$$
 (2)

The maximum characteristic root can be obtained by formula (2): $\lambda_{\max}=4.12$

$$CI=\frac{\lambda_{\max}-n}{n-1}=0.039$$
 (3)

n=4 shows that the randomness index RI=0.89.

According to formula (3):

$$CR_1=\frac{CI}{RI}=0.044<0.1$$
 (4)

So the above judgment matrix has satisfactory consistency, and the weight of each shortage

In order to confirm the evaluation weight of each level of the model, this paper selects 10 experts to form a judgment matrix by using Likert scale, Delphi method and expert feedback.the judgment matrix of the target layer and the criterion layer is shown in Table 1.

the shortage degree, followed by industry contribution ,27% of the impact on the shortage degree, and 18% of the impact on the shortage degree.

In order to check whether the evaluation is reasonable, the consistency test was carried out in the compilation of the shortage of talents catalogue, the specific process is as follows:

evaluation dimension is reasonable.

In the same way, the eigenvectors and

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 eigenvalues of the sub-criterion layer relative to the criterion layer can be calculated, and the consistency test is carried out. The weights calculated are as follows:
 $W_{11} = [0.5 \quad 0.25 \quad 0.25]$
 $W_{12} = [0.25 \quad 0.75]$
 $W_{13} = [0.163 \quad 0.54 \quad 0.297]$
 $W_{14} = [0.163 \quad 0.297 \quad 0.54]$ (5)

Consistency test results such as formula (6)/(7)/(8):

$$CR_{11} = \frac{CI_{11}}{RI_{11}} = \frac{0}{0.52} = 0 < 0.1$$

(6)

$$CR_{13} = \frac{CI_{13}}{RI_{13}} = \frac{0.005}{0.52} = 0.009 < 0.1$$

(7)

$$CR_{14} = \frac{CI_{14}}{RI_{14}} = \frac{0.005}{0.52} = 0.009 < 0.1$$

(8)

CR_{12} is a second-order matrix, which meets the requirements of consistency, so there is no need to test.

By normalizing $W_{11}/W_{12}/w_{13}/W_{14}$, the total weight vector of hierarchy can be obtained by unified calculation, as shown in formula (9)

$$N = [F_{11}, F_{12}, F_{13}, F_{21}, F_{22}, F_{31}, F_{32}, F_{33}, F_{41}, F_{42}, F_{43}] = [0.135, 0.067, 0.067, 0.045, 0.135, 0.062, 0.205, 0.113, 0.029, 0.053, 0.097]$$

(9)

$$CR_{total} = 0.012 < 0.1$$

(10)

From formula 10, it can be seen that the hierarchy total ranking has satisfactory consistency, and the weight of each shortage evaluation factor calculated is reasonable.

Assessment Criteria

In order to ensure the objectivity, scientific nature and ease of evaluation process, this paper

designed the evaluation table of the shortage of talents, as shown in Table2, each sub-standard layer is divided into five levels, and the participants are identified at the corresponding level. The shortage of talent can be evaluated quickly.

Table 2 Assessment of Shortage of Talents

Degree of shortage assessmen	Industry contribution (F1)	(F11) Industry fit degree	Level 5	Level 4	Level 3	Level 2	Level 1
		(F12) Industry's possible tax contribution	Level 5	Level 4	Level 3	Level 2	Level 1
		(F13) Possible aggregation effect	Level 5	Level 4	Level 3	Level 2	Level 1
	Talent Demand (F2)	(F21) Demand quantity	Level 5	Level 4	Level 3	Level 2	Level 1
		(F22) Urgency of demand	Level 5	Level 4	Level 3	Level 2	Level 1
	Talent quality (F3)	(F31) Education Background	Level 5	Level 4	Level 3	Level 2	Level 1
		(F32) Required Skills	Level 5	Level 4	Level 3	Level 2	Level 1
		(F33) required Experience	Level 5	Level 4	Level 3	Level 2	Level 1
	Talent supply (F4)	(F41) Recruitment channels	Level 5	Level 4	Level 3	Level 2	Level 1

		(F42) Mobility of talents	Level 5	Level 4	Level 3	Level 2	Level 1
		(F43) Salary	Level 5	Level 4	Level 3	Level 2	Level 1

Because the background and experience of the experts are different, the evaluation results of the same sub-rule layer are often completely different, so it is necessary to establish a unified evaluation standard for each sub-rule layer. In this study, the evaluation criteria of five-level

sub-criteria are established by using expert opinion method as shown in Table 3. The shortage of talents is finally reflected in the specific shortage of posts, therefore, the evaluation criteria are mostly around the establishment of scarce posts.

Table 3 Sub-criteria Layer Assessment Criteria

Evaluation criteria	Industry contribution (F1)	(F11) Industry fit degree	(1) If the industry belongs to the elimination of backward industries, it will be rated as grade 1; (2) If the industry belongs to a restricted development industry, such as high pollution, it will be rated as grade 2; (3) If the industry belongs to the industry encouraged by the development zone, it will be rated as grade 4; (4) If the industry belongs to the development zone's key support industry, it will be rated as grade 5; (5) In other cases, it will be rated as grade 3.
		(F12) Industry's possible tax contribution	(1) The industry is small in scale, and its development prospects are poor, and its tax contribution from the industry is low, it will be rated as grade 1; (2) If the industry is small in scale, or has poor development prospects, or the industry's tax contribution is low, it will be rated as grade 2; (3) If the industry belongs to a moderate scale, or has a good development prospect, and the tax contribution of the industry is above the average, it will be rated as grade 3; (4) The industry belongs to a large scale, with good development prospects, and the tax contribution of the industry is above the average, and the local industry has a certain industrial foundation, it will be rated as grade 4; (5) The industry belongs to a large scale, with good development prospects, and the tax contribution of the industry is above the average, and there is a leading representative company in the local area, it will be rated as grade 5.
		(F13) Possible aggregation effect	(1) The industry it belongs to can hardly drive the gathering of any other industry or enterprise, it will be rated as grade 1; (2) The industry can drive the gathering of some enterprises in this industry, it will be rated as grade 2; (3) The industry can drive the gathering of more companies in the industry, it will be rated as grade 3; (4) The industry that it belongs to can promote the gathering of this industry and its upstream and downstream industries or enterprises, it will be rated as grade 4; (5) The industry that it belongs to can drive the aggregation of multiple industries or industries, it will be rated as grade 5.
	Talent Demand (F2)	(F21) Demand quantity	(1) If the talents in short supply are only the needs of individual enterprises, it will be rated as grade 1; (2) If the talents in short supply are the special needs of certain companies in the region, it will be rated as grade 2; (3) If the scarce talent is needed by most companies, but the demand is moderate, it will be rated as Level 3; (4) If the talents in short supply are in the industry, they are indispensable talents, and the demand is large, it will be rated as grade 4; (5) If the talent in short supply is in the bank, it is a talent in shortage that must be equipped, and the demand of each enterprise is very high, it will be rated as grade 5.
		(F22) Urgency of demand	(1) If the shortage of talents is vacant, it has almost no impact on the company and can be held by others concurrently, it will be rated as grade 1; (2) If the shortage of talents is vacant and has a small impact on the company, it will be rated as grade 2; (3) If the shortage of talents is vacant, it will affect the operating efficiency of related businesses, but it can be temporarily held by others, it will be rated as grade 3; (4) If the shortage of talents is vacant, related businesses are difficult to carry out, and it is difficult for others to serve concurrently, it will be rated as grade 4; (5) If the shortage of talents is vacant, it will affect the overall operation of the company, it will be rated as grade 5.
	Talent quality (F3)	(F31) Education Background	(1) The talents who are in short supply generally require personnel with a high school, technical secondary school education or below, it will be rated as grade 1; (2) The talents who are in short supply generally require a vocational high school or college degree, it will be rated as grade 2; (3) The talents who are in short supply generally require a bachelor degree, it will be rated as grade 3; (4) Those who are in short supply who generally require a master's degree, it will be rated as grade 4; (5) Those who are in short supply who generally require a doctoral degree, it will be rated as grade 5.
		(F32) Required Skills	(1) Only a simple operation can be done to evaluate the work, it will be rated as grade 1; (2) It is necessary to master some skills or skills so as to be competent for the work, it will be rated as grade 2; (3) It is necessary to master some special skills or skills so as to be competent for the work, it will be rated as grade 3; (4) It is necessary to grasp complicated skills or skills to be competent for the work, it will be rated as grade 4; (5) It is necessary to grasp complex skills and grasp a more profound theoretical basis to be competent for the work, it will be rated as grade 5.

		(F33) required Experience	(1) If there is no requirement for work experience, it will be rated as grade 1; (2) If 1 year or less of work experience is required, it will be rated as grade 2; (3) If 1-3 years of work experience is required, it will be rated as grade 3; (4) If 3-5 years of work experience is required,it will be rated as grade 4; (5) If 6 years or more of work experience is required, it will be rated as grade 5.
	Talent supply (F4)	(F41) Recruitment channels	(1) If the talents in short supply can fully meet the talent demand in the development zone or the surrounding area,it will be rated as grade 1; (2) If the talent in shortage can generally meet the talent demand through campus recruitment,it will be rated as grade 2; (3) If the shortage of talents needs the help of special job fairs or online recruitment channels to meet the talent needs,it will be rated as grade 3; (4) If the shortage of talents generally needs professional recommendation to meet the talent demand,it will be rated as grade 4; (5) If the shortage of talents generally requires headhunting and recruitment in order to meet the talent needs,it will be rated as grade 5.
		(F42) Mobility of talent	(1) The talents in short supply are mainly part-time jobs and have great mobility,it will be rated as grade 1; (2) The industries in which talents are in short supply are highly mobile, such as sales, it will be rated as grade 2; (3) The industry with a shortage of talents has moderate mobility,it will be rated as grade 3; (4) The mobility of the talent shortage industry is relatively small, such as the middle and high-level shortage talents and professional technical talents, it will be rated as grade 4; (5) The mobility of the talent-scarce industry is extremely small, such as the chairman, general manager, experts, etc,it will be rated as grade 5.
		(F43) Salary	(1) The salary of the talent in short supply in this development zone is much higher than the market average,it will be rated as grade 1; (2) The salary of the talent in short supply is slightly higher than the market average level in this development zone,it will be rated as grade 2; (3) The salary of the talent in shortage is equal to the market average level in this development zone,it will be rated as grade 3; (4) The salary of the talent in shortage is slightly lower than the market average level in this development zone,it will be rated as grade 4; (5) The salary of the talent in short supply is far lower than the market average level in this development zone,it will be rated as grade 5.

CASES
Case Background

A development zone is a state-level technology-led development zone with air-front characteristics. Through the in-depth investigation of residents and enterprises in the early stage, it is found that on the one hand, the residents in the district reflect that the employment opportunities in the district are few and the employment is difficult; on the other hand, the enterprises in the district reflect that the area is difficult to recruit and the outstanding talents are few.In order to solve this dilemma, we must first solve four problems: first, which talents are really scarce in the jurisdiction, we need to formulate an attraction policy and absorb them from the outside; second, we need to clarify the degree of shortage of talents in order to make different levels of attraction policies according to the degree of shortage of talents; third, which talents can be trained quickly, which can not only solve the problem of local residents' employment difficulties, but also alleviate the problem of enterprise recruitment difficulties; Fourth, it is necessary to make clear which talents are not in short supply in the market, but because of the lack of competitiveness of treatment, enterprises are difficult to recruit workers. In view of this part of the post, it is necessary to strengthen the guidance to the employing enterprises and guide them to promote the treatment of related positions.These four problems can be solved perfectly through the evaluation of scarce talents.

Data Sources

This data mainly comes from the following two

channels:

First,through the form of online questionnaire survey, using hierarchical research method, we collected a total of 11 sub industries, a total of 217 short of talent positions;

Second,Using the third-party big data recruitment platform, this paper selects the top 200 posts with the smallest ratio of post delivery volume to the number of recruitment posts in the past year as a supplement to the shortage of talents.

Shortened Talent Evaluation

Before carrying out the evaluation of scarce talents, first of all, the scarce talent posts collected by investigation and collection are merged with the scarce talent posts of the third party big data platform to form 11 subdivision industries, with a total of 233 alternative scarce talent posts. On this basis, the 233 candidate shortage of talent posts for the evaluation of the degree of shortage.

For the sake of understanding, take X post as an example, there is only one expert to evaluate. Experts refer to table 3 and use table 2 to get the judgment matrix S, as shown in formula (11):

$$S = \begin{pmatrix} 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 & 0 \end{pmatrix} \quad (11)$$

The evaluation vector V of the degree of shortage can be calculated by multiplying the weight N of the influencing factors of the degree of shortage estimated by AHP, i.e. formula 9, by the judgment matrix S , i.e. formula 11. The calculation result of the evaluation vector of vacancy degree of position X is shown in formula (12):

$$V = N * S = (0.107 \ 0.194 \ 0.383 \ 0.259 \ 0.067) \quad (12)$$

The evaluation set of position shortage degree is set as: { very scarce, relatively scarce, general shortage, balance of supply and demand, Supply is greater than demand }, the assignment of each grade is $C = \{5/4/3/2/1\}$, Using the weighted average principle of fuzzy comprehensive evaluation method, the evaluation grade L can be obtained, as shown in equation (13):

$$L = \frac{5*0.107+4*0.194+3*0.383+2*0.259+1*0.067}{0.107+0.194+0.383+0.259+0.067} = 3.01 \quad (13)$$

From $C = \{5,4,3,2,1\}$, the severity rating table shown in Table 4 can be obtained:

Table 4 Shortness rating scale	
L value	Shortage level
1<L <=1.8	Level 1(Supply is greater than demand)
1.8<L <=2.6	Level 2(balance of supply and demand)
2.6<L <=3.4	Level 3(general shortage)
3.4<L <=4.2	Level 4(relatively scarce)
4.2<L <=5	Level 5(very scarce)

Compared with Table 4, the corresponding shortage level of position X is level 3, that is, general shortage of talent positions.

When many experts participate in the evaluation of the shortage of talents, the percentage of each sub-criteria level selected by experts is counted, and the judgment matrix is formed S , and the follow-up evaluation process is the same as that of an expert evaluation process.

Application of Results

Refer to the evaluation process in section 4.3, the researchers selected ten experts to evaluate the shortage of 233 alternative talent positions in 11 subdivision industries. The evaluation found that there were 14 very scarce positions and 53 relatively scarce positions. The general shortage of 95 positions, supply and demand balance of

64 positions, supply is greater than demand of 7 positions. Considering the A of the new town's financial revenue, as well as the difficulty and periodicity of talent training, the local people's social bureau has formulated a differentiated policy of attracting talents for the very and relatively scarce posts; for the generally scarce posts, ten positions with large demand and easy to train have been selected, in cooperation with vocational and technical schools, training institutions and employment enterprises, the training agreement for targeted employment has been signed for the residents in the jurisdiction; for the balance of supply and demand and the more than needed positions, on the one hand, the people's social bureau has set up information communication channels between the unemployed residents and the employment enterprises in the jurisdiction, and guided the

unemployed residents to employment; On the other hand, in-depth communication with enterprises in the jurisdiction to guide them to appropriately improve the post treatment, in order to enhance the talent attraction of such posts.

CONCLUSIONS

Process for Evaluating Scarce Talents in Technology-Led Development Zones

To sum up, combined with practical experience, this paper abstracts the evaluation process of scarce talents in technical leading development zones as follows:

The first step is to carry on the sample survey to each type of enterprise in the area of the technology-led development zone, request the sampled enterprise, fill in the shortage talent demand of the enterprise, and collect the information of the sampling by industry, remove the duplicate post.

The second step is to use the third party recruitment big data platform to extract the top 200 scarce posts, and to summarize the relevant information by industry. Remove duplicate posts.

The third step is to integrate and re-examine the number of scarce talent positions collected, as well as the number of scarce talent positions collected by the third party big data platform, as alternative positions for scarce talents in development zones. For some very professional positions, you can consult enterprises and recruitment experts, prepare job descriptions, and clearly describe the requirements of the required positions, such as work experience, required professional skills, academic qualifications, etc.

The fourth step is to select the evaluation experts, select the evaluation experts, use the evaluation model and evaluation criteria constructed in this paper, refer to the job description (if any) to evaluate the shortage of each candidate position.

The fifth step is to propose different solutions according to the shortage of the evaluated positions. For very scarce and relatively scarce positions, we can consider formulating different degrees of attraction policies; for generally scarce positions, we can consider solving the problem of talent shortage through staff training and increasing recruitment efforts; for the balance of supply and demand and more than the required positions, we can solve the problem of talent shortage by establishing information distribution channels and improving the treatment of related positions.

Conclusion

Based on the concept of shortage and the orientation of China's technology-led

development zones, this paper puts forward an easy-to-operate and quantifiable evaluation model and evaluation standard for the shortage of talents in technology-led development zones. This process integrates the research data and the information of the third party big data platform, solves the problem that the shortage of talents in the technology-led development zone is difficult to quantify, so that the local government can aim at the shortage of talents in different degree. At the same time, the establishment of development zones in administrative regions is one of the important measures to support the rapid development of China's local economy. It also has important reference significance for other developing countries to solve the problem of attracting talents in short supply in development zones.

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