

The Study on Factors Influencing Agglomeration of Human Resources Service Industry

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Abstract

Combining with the contents and characteristics of human resources service, this paper gives the connotation of human resources service industry and HRSI agglomeration. Based on theories of industrial agglomeration and the characteristics of HRSI, the measurement index system of HRSI agglomeration is constructed. Using the principal component analysis and factor analysis, it is precipitated that main factors affecting HRSI agglomeration in Shaanxi Province are the relevant industrial environmental factor and the factor of major market demands. Also the overall scores and agglomeration degree rankings of HRSI in ten cities in Shaanxi Province are obtained, which is used to made policy recommendations for the further promotion of HRSI.

Keywords

Human Resources Service Industry (HRSI), Industrial Agglomeration, Influencing Factors, Shaanxi.

1. Introduction

With the development of modern market economy, Human resources service industry (HRSI) has emerged and increased gradually contribution rate for social economic growth with its high compound growth characteristics. In recent years, HRSI has strengthened the cooperation with financial service and legal business service. Contents of HRSI are more abundant and the service forms have been further innovated. It has provided timely and effective human resources service support for individuals and different types of enterprises.

China's attention to the development of HRSI continues to increase, and "Views on Accelerating the Development of Human Resources Service Industry" in 2014 has identified HRIS as the focus of producer services, promoting HRSI into a new growth stage as a strategic guidance document in a period of time. At this stage, strengthening HRSI is in line with requirements of building a strong human resources country, and important for the industry collaborative innovation, improving the quality of workers and promoting change on the economic development mode.

HRSI in Shaanxi Province has developed rapidly in recent years and has grown into one of the most important productive service industries in the region. In order to increase the industrial strength as soon as possible, to achieve higher efficiency, higher quality employment, larger industrial benefits and the professionalization of human resources service, active measures are taken in Shaanxi Province to promote industrial agglomeration. Therefore, for the healthy development of HRSI in Shaanxi Province, it is necessary to grasp the basic development situation of HRSI and to understand the factors influencing the development of HRSA.

2. Literature Review and Concepts Definition

2.1 Human resources service (HRSI)

Originated in the late 18th century, human resources service has been recognized in the form of industry around the world with a landmark "Private Employment Agency Convention" adopted by the International Labor Organization from 1997, and in the next few decades has developed rapidly, increasing gradually contribution rate to the economy growth of the western developed countries[1].

Due to the different economic, social and cultural environment, different countries and regions have differently focused on the knowledge and practice of HRSI. North American countries have incorporated administrative and general management consulting service, human resources and senior management executive search and consulting services, employment service, professional and managerial development training into the range of HRSI. United Kingdom's classification criteria is slightly different from that of American, which classifies employment and training services related to human resources service as "enterprise management and management consulting" category belonged to "other business services". Singapore allocates HRSI in categories including human resources consulting service, employment service and profession and management development training [2] [3]. In China, Yan Zhang in 2002, the earliest from the economic point of view clearly put forward the HRSI which referred to the economic units set for the provision of human resources service products[4], giving an important reference for the future of HRSI researches. In 2010, "the Circular on Further Strengthening the Work on Supervision and Management of Human Resources Market" was released, which provided the basis for standardized and unified management of HRSI in China.

In 2011, HRSI became a specialized industry classification first appeared in the China's economic industry classification standard, including public employment services, professional intermediary service, labor dispatch, vocational skills appraisal, labor outsourcing services and so on. "White paper for human resources service industry in China 2013" divided HRSI into nine sub-sectors including human resources management consulting service industry, recruitment service industry, senior talent search service industry, talent evaluation service industry, labor dispatch service industry, salary service industry, welfare service industry, training service industry, human resources business process outsourcing service industry [5].

As an emerging industry, HRSI has not formed a clear and unified definition. In the existing research and practice at home and abroad, HRSI was defined from perspectives of economics, value chain, and more from contents, which although different, can still be seen that human resources management consulting services, employment services and training services constitute common parts of HRSI. Thus, the nature of HRSI is to meet human resources-related needs for community members (including individuals or organizations), which is not a traditional and single career intermediary, but is given more comprehensive contents of the human resources industry chain services. Therefore, human resources service industry (HRSI) can be considered to provide employment, training, human resource management consulting and other products and services related to human resource management for individuals, enterprises or social organizations, so as to meet the demand of human resources and promote the optimization of human resources.

The content of HRSI determines its unique industry characteristics. First, the breadth of clients, human resources services almost involve all the people and organizations in the community. Second, the level and knowledge of service contents [6], human resources management consulting, training, senior management Search belong to management issues of enterprise strategic aspects, in which the knowledge of services demands promotes the knowledge of services contents. Third, the spillover of service boundaries, HRSI is to provide resources of great subjective initiative individuals, which can effectively promote positive interaction between the various elements within the enterprise to bring more potential value.

As with other producer services, HRSI appeared the tendency of agglomeration with the maturity of the market economy conditions and the accelerated division of labor [7]. In the development process, the human resources service organizations start to seek advantages of agglomeration with the service contents gradually widened and modularized, the value chain gradually clear, and the industry scale gradually expanded, and become an innovative and knowledge-intensive industry.

2.2 HRSI agglomeration

Conceptual definition of industrial agglomeration came mainly from the production linkages of industrial enterprises, which was first proposed by Alfred Marshall, a British neo-classical economist,

in his Principles of Economics in 1890. The industrial agglomeration theory has been studied and practiced by several generations of scholars, and has been expounded from different angles. Nowadays, Michael E. Porter's definition of industrial agglomeration is widely accepted and used in China, which is to analyze industrial agglomeration from the economic relationship among enterprises at the associated geographical position [8].

The development of HRSI in developed countries has been nearly 60 years. The mature theory and practice of industrial agglomeration have formed a good external market environment for the agglomeration of HRSI in developed countries. At the same time, governments have created good business development environments and level playing fields, forming orderly competitions within the industry. Industrial agglomeration refers to convergence and concentration of the same industry in geographical space, and it in the broad sense also includes regional integration of enterprises before and after the value chain and the horizontal linkages related to the industry. Therefore, combining the characteristics of HRSI and the general meaning of industrial agglomeration, this paper defines the HRSI agglomeration as the spatial integration of resources between organizations which provide the employment, training or human resources management consultation for individuals, enterprises or social organizations, and other business services organizations which involve in investment and financing, legal, intellectual property, tax accounting and so on, so as to achieve economic concentration in HRSI.

3. Measurement Index System of HRSI Agglomeration

3.1 Factors influencing HRSI Agglomeration

HRSI is consistent with other industry in generality, and its industrial agglomeration is taken joint action by multiple factors. Considering characteristics of HRSI, influencing factors on HRSI agglomeration can be summarized as four aspects that are the basic role of economic development, the pursuit of economies of scale, to achieve economic agglomeration, and a good market demand environment.

(1) Economic development is the foundation of HRSI agglomeration

In the 1970s, after experiencing the worldwide economic crisis, the theory of economic factors with the interactive relationship between the market and the government as the core has been put forward and improved. Despite theoretical differences are existed, the fundamental role of economic factor in social overall development has not been ignored. Economic development determinism says that economic development is the fundamental driving force of social system operation, institutional optimization, and political security. Developed countries pay more attention to economic growth, while developing countries pay more attention to economic development. A higher level of economic development can accelerate the social division of labor, optimize the social industrial structure, bring higher social efficiency and welfare. With the formation of other industries, the formation and aggregation of HRSI is also the inevitable result of economic and social development. Under the transformation of economic development mode, the proportion of service industry in modern social economy is gradually increasing, providing HRSI agglomeration with a good industrial operation background. At the same time, HRSI as an important modern service industry, has also become one of the driving force of economic development.

(2) Economies of scale is the direct influencing factor of HRSI agglomeration

To gain economies of scale, Marshall says forms the directly influencing factor of industrial agglomeration, which has opened up a precedent for the study of industrial agglomeration phenomenon. The agglomeration of HRSI has the same characteristics as other industrial agglomeration. On the one hand, companies seek to share labor resources, intermediate inputs, knowledge, infrastructure and other resources, such as to reduce the search costs. When a variety of industrial enterprises tends to balance development, they can gain economic benefits, and gain more external economies of scale. On the other hand, the peer companies can get timely and convenient access to the latest information and knowledge through collaborative learning to create collaborative

innovation environment. The advantage of HRSI is mainly reflected in the acquisition and management of human resources information and knowledge, therefore, HRSI agglomeration can bring obvious knowledge spillover for enterprises, which helps HRSI enterprises to implement internal economies of scale. Unlike other industries, HRSI as a staff-assisted industry, provides human resources support for almost all the general industries. And human resources itself have a great mobility and initiative coordination with other production elements, which is more conducive for HRSI companies to get access to internal and external economies of scale.

(3) Agglomeration economy is the internal power of HRSI agglomeration

The conception of agglomeration economy is put forward by Weber in his theory of industrial location, which analyzes the theory of location choice of enterprises from the perspective of rational people, and explains the phenomenon of industrial agglomeration. On the basis of this theory, Zifang Chen put forward that economies of scale and agglomeration economy of enterprises can be mutual conversion. The expansion of the size of a single enterprise results in more and more enterprises to cooperate with it because of the association between the forward and horizontal in its surrounding, thus forming a kind of agglomeration economy. In the further development, these enterprises may be combined with each other or even merged into a larger, more competitive enterprise, where external economies of scale appear internalization trend, agglomeration economies tend into economies of scale [9]. The agglomeration of leading industry not only brings the accumulation of human resources, but also has a strong attraction to the gathering of HRSI companies. The agglomeration of HRSI belongs to the agglomeration type with horizontal connection with other regional industries. Agglomeration of the leading industry will not only bring the agglomeration of human resources, but gather together with a strong attraction to HRSI. HRSI agglomeration is one type of transverse connection with regional leading industries, forming agglomeration economy with other industries to guarantee enterprises close to market demands and resources. Generally, human resources service enterprises can manage related information through databases, but the collection and mastery of tacit information, such as potential needs of users and the quality level of existing labors, often need to be realized through face-to-face contact. Such information is easy to be distorted, therefore, the human resources service enterprises will also converge toward agglomeration economic zone in order to share these industrial information. For example, HRSI agglomeration is more easily formed in the high-tech industrial cluster area.

(4) The market demand provides a necessary condition for HRSI agglomeration

In the period of market economy, industry and product development are market demand-oriented. Porter put forward a new competitive advantage theory from the perspective of competitiveness analysis, in which the market demand provides the necessary condition for industrial agglomeration and enhancing the competitiveness of industries or countries. Compared with the traditional manufacturing industry, the development of HRSI is not yet mature, and the related enterprises are faced with the challenge of strengthening the competitive advantage and enlarging the industry strength. The new competitive advantage theory thinks that HRSI agglomeration is for the pursuit of human resource, management technology and market demand, and cooperation of institutions, so that enterprise resources can be integrated and enterprises can be transformed and upgraded. At the same time, under the condition of a low marketization level in HRSI, the government's industrial support policy is also vital to the development of HRSI, owing to the not standardized development and the credit mechanism lacking.

3.2 The measurement index system of HRSI agglomeration

Based on the theory of influencing factors of HRSI agglomeration, this paper constructs the measurement index system of HRSI agglomeration (Table 1), including economic development, market demands, economies of scale and government support.

Economic development is measured by indicators of the economic development level index and structure index. The level index of economic development reflects a country or region's economic development level and development speed, which is the longitudinal description of economic

development and generally expressed in terms of GDP, economic growth rate and national income. The structure index of economic development reflects a country or region's economic development scale and composition, which is the horizontal description of economic development, and generally expressed with proportion of different industries. In this paper, we use GDP (X1) and (X2) the tertiary industry proportion in a given area as secondary indexes to represent the influence of economic development on HRSI agglomeration.

According to different service requirements for human resources, market demands are mainly from human resources and enterprises. For human resources demand, there are two kinds of agents that are ordinary college graduates and the unemployed. On the one hand, ordinary college graduates are the representatives of high quality level talents, who can't only satisfy staff needs for most other industries, but HRSI itself. On the other hand, the demand of the unemployed reflects needs of a large number of job-hopping, demobilized human. So human resources' demand is indicated by (X3) ordinary university graduates, and (X4) registered urban unemployed personnel number. While the demand of enterprises is reflected by (X5) the number of industrial enterprises which is representative on human resources service.

Economies of scale cover two aspects including the external economies of scale index and the internal economies of scale index. The external economies of scale focus on the contact with related industries, while the internal economies of scale on the competition within a certain industry. As a kind of producer service, industries related to HRSI are extensive. Considering the nature and its own characteristics, (X6) second industry agglomeration, X7 tertiary industry agglomeration and (X8) Internet access number are used as measurement indexes, to reflect available external economies of scale of HRSI. Internal economies of scale is indicated by (X9) the company number of the same industry to measure competition of HRSI enterprises.

Government support is evaluated by the financial expenditure of the government, which can reflect the size of government in a certain area and the government's support to the local economy. Therefore, (X10) the amount of local fiscal expenditure is used as an important index to measure the influence of government support on HRSI agglomeration.

Table 1. The measurement index system of HRSI agglomeration

| Category | Index | Sub-index(unit) |
|----------------------|-----------------------------------|--|
| Economic Development | level of economic development | X1: gross domestic product(ten thousand yuan) |
| | Structure of economic development | X2: third industry product ratio (%) |
| Market Demand | human resources demand | X3: ordinary university graduates (people) |
| | | X4: registered urban unemployed personnel number (people) |
| | Enterprise demand | X5: number of industrial enterprises above designated Size (a) |
| Economies of Scale | external economies of scale | X6: second industrial agglomeration (%) |
| | | X7: third industry agglomeration (%) |
| | | X8: number of Internet access (reached) |
| | Internal economies of scale | X9: Number of enterprises in the same industry (a) |
| Government Support | fiscal spending | X10: number of local fiscal expenditure (ten thousand yuan) |

4. Empirical Research

4.1 Status of HRSI agglomeration in Shaanxi province, China

By collecting and sorting out the relevant data, we can observe the current situation of HRSI in Shaanxi Province from aspects of the number of human resources service agencies, the number of employees and the market scale, as shown in Table 2.

In terms of the number of human resources service agencies, the total number of human resources service organizations in Shaanxi in 2014 is 661, including comprehensive public employment and talent service organizations, public employment service organizations, public service institutions for talents, service organizations belonged to the industry (institutions) and state-owned property service enterprises, a total of 226. At the same time, the number of private enterprises is 417, accounting for 63.09% of the total number; human resources Service enterprises with foreign and Taiwan-funded nature accounts for 0.60%; private non-enterprises and others accounts for 2.12%. The number of private-owned human resources service enterprises occupies more proportion than that of government-owned institutions.

From the number of workers in human resources service agencies, the number of employees in five types of government agencies is 6204, accounting for 44.13% of the total number of employees in the industry; the employee number of private service enterprises is 7556, accounting for 53.74%; the number of employees in foreign-funded and Taiwan-funded human resources service enterprises is 169, accounting for 1.20%; the number of private non-enterprises and others is 131, accounting for 0.93%. In the nature of institutions, the employee proportion of private enterprises in human resources services business is still the highest.

From the annual income of human resources service agencies, HRSI revenue in Shaanxi Province in 2014 is 8746.9539 million yuan. Annual income ratio of Government-owned institutions is 50.86%, which accounted for the vast proportion; the annual income of private service enterprises accounted for 46.65%; Annual revenue of foreign and Taiwan-funded human resources services business accounts for 1.31%; Annual revenue of private non-enterprise and other service organizations accounts for 1.18% of the total. The government-owned human resources service sectors accounts for half of the total revenue of HRSI in Shaanxi Province, slightly higher than that of the private-owned service enterprises.

Table 2. Basic information of human resources service organizations in Shaanxi Province

| Type | number | | number of employees | | annual turnover | |
|--|-----------------|---------------|---------------------|---------------|--------------------|---------------|
| | quantity / Home | proportion /% | quantity / person | proportion /% | quantity / million | proportion /% |
| comprehensive public employment and talent service organizations | 49 | 7.41 | 1430 | 10.17 | 8122.36 | 0.93 |
| public employment service organizations | 78 | 11.80 | 1244 | 8.85 | 143.53 | 0.02 |
| public service institutions for talents | 56 | 8.47 | 2294 | 16.32 | 6140.65 | 0.70 |
| institutions | 20 | 3.03 | 603 | 4.29 | 1785.30 | 0.20 |
| state-owned property service enterprises | 23 | 3.48 | 633 | 4.50 | 428671.72 | 49.01 |
| private enterprises | 417 | 63.09 | 7556 | 53.74 | 408059.53 | 46.65 |
| foreign funded enterprises | 3 | 0.45 | 141 | 1.00 | 3058.20 | 0.35 |
| Taiwan-funded enterprises | 1 | 0.15 | 28 | 0.20 | 8423.85 | 0.96 |
| private non-enterprises and others | 14 | 2.12 | 131 | 0.93 | 10290.25 | 1.18 |
| Total | 661 | 100 | 14060 | 100 | 874695.39 | 100 |

Data source: Shaanxi Provincial Department of Human Resources and Social Security

Overall, HRSI in Shaanxi Province is still in the primary market stage, in which the number of state-owned human resources service enterprises and employees are not many, But with strong revenue capacity; private human resources services enterprises has gradually developed into an important force in the industrial growth; the proportion of foreign-funded enterprises is small, which is not a strong force to the regional HRSI.

In addition, according to the calculation formula of location quotient (lq) and the relevant data in Shaanxi Province, we can calculate the agglomeration degree of HRSI in Shaanxi Province, such as table 3.

Table 3. The agglomeration degree of HRSI in Shaanxi Province in 2009-2014

| Year | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------|------|------|------|------|------|------|
| lq | 1.42 | 0.98 | 0.54 | 1.14 | 1.51 | 1.29 |

Data source: Shaanxi Provincial Department of Human Resources and Social Security

From the above table, we can see the change of HRSI agglomeration in Shaanxi province in recent six years. From 2009 to 2011, the agglomeration of HRSI in Shaanxi Province showed a clear downward trend, which reached the lowest level in 2011. But in 2012 the agglomeration level increased significantly, and in three consecutive years maintained a stable level greater than 1, indicating that, there was a large measure of variation of HRSI in Shaanxi Province in six years, but still a phenomenon of agglomeration on the whole, and a tendency of stable development and gradual increase.

4.2 Influencing factors of HRSI agglomeration in Shaanxi province

(1) Data collection and processing

The analysis object in this paper are from the social development data of ten cities in Shaanxi province. In order to ensure the consistency of the data and the accuracy of the empirical analysis, all the data are derived from the '2014 Statistical Yearbook of China' and '2014 Statistical Report of Human Resources Service Agencies' supplied by Shaanxi provincial department of Human Resources and Social Security.

Using z - score standardization method to normalize the original data, obtain comparable and operability variable values can be obtained:

$$Z_{ij} = (X_{ij} - \bar{X}_i) / S_i \quad (1)$$

Z_{ij} denotes the variable value after dealing with the standardization. X_{ij} represents the original data corresponding to Z_{ij} . \bar{X}_i and S_i respectively denote the mean value and standard deviation of i . The variable value after normalization basically fluctuates around zero. The variable value greater than 0 means the higher level than the average level of the whole province, and less than 0 indicates the lower level than the provincial average. The variable values after normalization are shown in Table 4.

Table 4 standardized data of HRSI agglomeration of ten cities in Shaanxi Province

| | X1 | X2 | X3 | X4 | X5 | X6 | X7 | X8 | X9 | X10 |
|-----------|-------|--------|-------|-------|--------|-------|-------|-------|-------|--------|
| Xi'an | 2.388 | 1.412 | 2.817 | 2.820 | 1.945 | 2.695 | 2.783 | 2.801 | 2.034 | 2.457 |
| Tongchuan | -.945 | -1.231 | -.444 | -.450 | -1.071 | -.670 | -.680 | -.614 | -.640 | -1.116 |
| Baoji | -.051 | -1.269 | -.297 | -.223 | .012 | -.029 | -.295 | -.175 | .137 | -.349 |
| Xianyang | .179 | -1.277 | .067 | -.031 | .908 | .299 | -.048 | .011 | 1.573 | -.099 |
| Weinan | -.195 | .017 | -.384 | -.222 | -.119 | -.076 | -.018 | -.202 | -.545 | -.044 |
| Yan'an | -.191 | 1.010 | -.342 | -.374 | -1.184 | -.300 | -.327 | -.401 | .017 | .060 |
| Hanzhong | -.536 | .894 | -.271 | -.245 | -.330 | -.419 | -.297 | -.322 | -.606 | -.382 |
| Yulin | .899 | -.338 | -.388 | -.385 | .915 | -.167 | -.130 | -.215 | -.668 | .763 |
| Ankang | -.739 | .472 | -.371 | -.394 | -.147 | -.740 | -.467 | -.401 | -.700 | -.532 |
| Shangluo | -.807 | .310 | -.387 | -.495 | -.930 | -.594 | -.522 | -.481 | -.601 | -.757 |

(2) Principal component analysis and factor analysis

The characteristic root and contribution rate of X1 ~ X10 are calculated by SPSS statistical software. Table 5 shows that the first and the second principal components have the characteristic roots of 8.166 and 1.074 respectively, and the cumulative contribution rate is 92.406%. These two principal components could explain 92.406% of the original 10 indicators. Therefore, in order to ensure the accuracy of the evaluation indexes and the comprehensiveness of evaluation system, the number of extracted principal components is 2.

Table 5. Eigenvalues and contribution rates of indicator variables

| Component | Initial eigenvalue | | |
|-----------|--------------------|-------------|----------------|
| | Total | Variance % | Accumulation % |
| 1 | 8.166 | 81.661 | 81.661 |
| 2 | 1.074 | 10.745 | 92.406 |
| 3 | .447 | 4.469 | 96.874 |
| 4 | .182 | 1.821 | 98.695 |
| 5 | .114 | 1.136 | 99.831 |
| 6 | .013 | .127 | 99.959 |
| 7 | .002 | .025 | 99.983 |
| 8 | .001 | .009 | 99.992 |
| 9 | .001 | .008 | 100.000 |
| 10 | -1.473E-016 | -1.473E-015 | 100.000 |

Table 6. Correlation matrix

| | | X1 | X2 | X3 | X4 | X5 | X6 | X7 | X8 | X9 | X10 |
|-------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Correlation | X1 | 1.000 | .310 | .855 | .862 | .881 | .922 | .908 | .896 | .730 | .979 |
| | X2 | .310 | 1.000 | .451 | .450 | .081 | .348 | .474 | .440 | .072 | .487 |
| | X3 | .855 | .451 | 1.000 | .997 | .734 | .970 | .983 | .993 | .800 | .867 |
| | X4 | .862 | .450 | .997 | 1.000 | .739 | .975 | .990 | .996 | .782 | .876 |
| | X5 | .881 | .081 | .734 | .739 | 1.000 | .804 | .780 | .781 | .707 | .824 |
| | X6 | .922 | .348 | .970 | .975 | .804 | 1.000 | .983 | .984 | .850 | .912 |
| | X7 | .908 | .474 | .983 | .990 | .780 | .983 | 1.000 | .996 | .766 | .927 |
| | X8 | .896 | .440 | .993 | .996 | .781 | .984 | .996 | 1.000 | .788 | .905 |
| | X9 | .730 | .072 | .800 | .782 | .707 | .850 | .766 | .788 | 1.000 | .676 |
| | X10 | .979 | .487 | .867 | .876 | .824 | .912 | .927 | .905 | .676 | 1.000 |

From the correlation matrix of variables (table 6), it can be found that X1 and X2 has little to do with other indicators. Therefore, the other variables are subjected to the rotation factor load Matrix analysis after removing the two index variables (Table 7). The X6, X7, X8 indicators reflect the industrial environment related to the level of human resource service industry cluster, and the X3, X4 index (X3, X4, X4, X4, X4) are the main indicators of X3, X4, X4, X4, Reflects the personal needs of human resources services, in general, in the relevant industries and high concentration of economically developed areas of human resources will have a wider distribution, which not only for the human resources services to provide market demand, but also for the X10 index reflects the government's financial investment level, the government's financial expenditure and local economic and industrial development are closely related, therefore, the definition of principal component 1 for the relevant industry environmental factors. Main component 2 is mainly composed of X5 index and X9 index, reflecting the main market demand and industry competition two factors, the main market

demand is more, the same industry competition will become more intense, therefore, as the main market demand factor.

As it can be seen, the principal component 1 is impacted mainly by X6, X7, X8, X3, X4, X10, among which X6, X7, X8 reflect the industrial environment associated with HRSI agglomeration, and X3, X4 reflect individual demands for human resources services. Generally speaking, human resources will also have a wide distribution where the relevant industrial agglomeration and the economic development are in a high level, which not only provides HRSI with market demands, but also brings human resources for the industry itself. X10 reflects the financial input level of government, which is closely related to the local economy and industry development. Therefore, principal component 1 is defined as the factor of relevant industrial environment. Principal component 2 mainly consists of X5 and X9, reflecting market demand and industry competition. Industry competition will be increasingly fierce when there are more market demands. Therefore, principal component 2 is defined as the factor of market demand.

Table 7. Rotation factor load matrix

| | Component | |
|-----|-----------|-------|
| | 1 | 2 |
| X3 | .982 | -.155 |
| X4 | .983 | -.160 |
| X5 | .826 | .522 |
| X6 | .994 | -.008 |
| X7 | .991 | -.100 |
| X8 | .993 | -.098 |
| X9 | .835 | .214 |
| X10 | .925 | .091 |

(3) Calculation and analysis of agglomeration degree

According to the factor matrix after rotation, we can calculate scores of two factors and comprehensive scores of ten cities in Shaanxi in 2013, as shown in Table 8. Through the above analysis process, we can get:

Firstly, the degree of HRSI agglomeration in Shaanxi Province is affected by the environmental factor of related industries and the main market demand factor, which is mainly affected by the former. The higher the agglomeration level of related industries such as secondary industry and tertiary industry, the greater the demand for human resources and human resources services, and the greater the impact on the enhancement of geographical concentration of HRSI. Extensive application of information industry has greatly promoted agglomeration of HRSI. The government support has little effect on HRSI agglomeration, which indirectly plays an important role in the agglomeration of HRSI through the improvement of economic development and the growth of related industries. The more the main market demands of industrial enterprises, the more likely to stimulate HRSI agglomeration, which is the driving force for HRSI agglomeration. This is consistent with the status quo that the mainly human resource service demand mainly comes from the manufacturing sector.

Specifically, the impact of the relevant industrial environment is mainly reflected in that the agglomeration of the second industry and the tertiary industry, the development of information industry in Shaanxi Province provide a good industrial development environment. As a productive service industry, HRSI could rely on other industrial agglomeration areas and provide timely and effective human resources services for the secondary industry and the tertiary industry with a large number of human resources needs, which can reduce the cost of human resources services enterprises to a large extent, and give a good interaction with the needs of other industries to maximize the benefits of agglomeration economies. Thanks to the continuous promotion of information industry applications, human resources services business could have lower requirements for facilities and

venues. At this stage, there are most of small and medium enterprises whose requirements of staff conditions and facilities are more lenient, and some companies even have just online services through the Internet Business. Such enterprises are through the Internet platform to publish information or services, therefore, information technology of HRSI in a region also has its important impact.

The impact of market demand factor is mainly reflected in that industrial enterprises has a clear lead role in development of HRSI. According to human resources supply and demand situation in Shaanxi Province in the first quarter of 2015, the manufacturing sector's employment demand is 1.31 times than the wholesale and retail trade ranked second, which confirmed the above analysis results. However, it should be noted that HRSI in Shaanxi Province is not broad enough, reflecting the human resources services in Shaanxi Province is still in the initial stage of development, and to be further expanded. In addition, the government support function of HRSI in Shaanxi province is not obvious, and it is not strong for the policy guidance function, which is not conducive to the improvement of the overall quality of the industry.

Secondly, there are obvious differences in the agglomeration degree of HRSI in various cities of Shaanxi Province, showing hierarchical characteristics. According to comprehensive scores, the HRSI agglomeration in Shaanxi province can be divided into three levels: high level, middle level and low level. Xi'an belongs to the high-level area of HRSI. Xianyang is in the middle level area of HRSI, and HRSI agglomeration of other eight cities are in the low level. Xi'an and Xianyang are the main force of HRSI development in Shaanxi province, while the remaining cities need to be further developed. As a provincial capital city, Xi'an has a favorable environment and a strong leading role for the development of HRSI agglomeration, whose agglomeration degree is much higher than other prefecture-level cities. In the remaining prefecture-level cities, Xianyang city has a higher agglomeration level of secondary industry and tertiary industry, and advantages of information industry development are obvious, whose level of HRSI agglomeration is the highest in the remaining nine prefecture-level cities, reflecting strength requirements of the relevant industrial development. Due to the low level of related industry development, the main market demand of human resources service in Tongchuan is obviously insufficient, resulting in the backward development of HRSI agglomeration.

Table 8. Comprehensive ranking of HRSI agglomeration in 10 Cities in Shaanxi Province

| City | related industry environment | main market demand | comprehensive score | ranking |
|-----------|------------------------------|--------------------|---------------------|---------|
| Xi'an | 3.515 | -2.152 | 3.026 | 1 |
| Tongchuan | 0.174 | 0.284 | 0.169 | 10 |
| Baoji | 0.599 | 1.248 | 0.594 | 3 |
| Xianyan | 1.07 | 2.353 | 1.068 | 2 |
| Weinan | 0.492 | 0.819 | 0.478 | 5 |
| Yan'an | 0.456 | 0.494 | 0.431 | 6 |
| Hanzhong | 0.444 | 0.537 | 0.421 | 7 |
| Yulin | 0.553 | 1.783 | 0.580 | 4 |
| Ankang | 0.341 | 0.848 | 0.345 | 8 |
| Shangluo | 0.255 | 0.374 | 0.245 | 9 |

5. Conclusion

In this paper, with contents of human resources service industry at home and abroad compared, the connotation of human resource service industry and its agglomeration are given. Based on the theory of industrial agglomeration and characteristics of the development of human resources service industry, the evaluation index system of human resource service industry agglomeration is constructed. Taking the development data of human resources service industry in Shaanxi Province

as the analysis object, we can see that factors influencing human resource service industry agglomeration are mainly related to the relevant industrial environment and the market demand. In order to promote the human resource service industry cluster development, it should be more noted that enhancing the interactive effect of human resources service industry and related industries, accelerating the transformation of regional economic growth mode to guide a full range of human resources service industry, and constructing and perfecting the policy system for human resource service industry.

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References

- [1] Information on <http://www.ciett.org>
- [2] Z Shuang: Study on Chinese Human Resources Service Industry based on Comparing with Foreign HRSI. *International Conference on Artificial Intelligence, Management Science & Electronic Commerce* (Deng Feng, China, August 8-10, 2011). 2011, p.1527-1530.
- [3] Y Wang, Development of Human Resource Services Industry in Foreign Countries: Current Status, Trends and Its Enlightenment, *Science & Technology Progress and Policy*, 2007 No.07, p.195-196.
- [4] N.N. Yang, Human Resource Service Industry:A Review of Literature, *Chongqing Social Sciences*, 2015 No.09, p.58-59.
- [5] M.Z. Xiao, L.J. Guo: *White Paper for Human Resources Service Industry in China 2013* (People's Publications, China 2014), p.239-290.
- [6] H Qin, W Guo, The Development Status and Trend of Human Resource Service Industry in Foreign Countries, *Commercial Times*, 2013 No.08, p.122-123.
- [7] Z.Y. Hou, Research on the Development Status and Countermeasures of Human Resource Service Industry Park in China, *Review of Economic Research*, 2014 No.56, p.22-23.
- [8] Z.C. Zhao, Y.F. Qu, Summary of the Research on Industrial Agglomeration Theory, *Modern Economic Information*, 2008 No.06, p.149-150.
- [9] Z.F. Chen: *The theory of Regional economics* (China financial and Economic Publications, China 2011), p.122-124.