

## Study on the Operating Mechanism of Human Resources Public Service Platform Based on Set Pair Analysis

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### Abstract

*The public service platform of human resources is an important part of the public service system of the government. Together with the five public platforms of scientific and technological innovation, intellectual property rights, venture capital and information services, it has become an important grasp in the implementation of the strategy of “prospering the city through science and education” and “strengthening the city by talents”. Through the construction of human resources public service platform, the integration of existing human resources public service and the re-engineering of personnel service process, the use of modern computer information network system, to establish a unified, coordinated, efficient operation, comprehensive and integrated public service platform. This platform will provide service guarantee and information support for the benign interaction of various human service resources and the comprehensive development of social human resources. In this paper, the specific operation mechanism of human resources public service platform based on set pair analysis is analyzed, and the resistance factors of the platform operation mechanism are studied. In view of these problems, some suggestions on operating mechanism are put forward.*

**Keywords:** Set pair analysis, Human resources, Public service platform

## II. Introduction

With the advent of the era of information globalization, the role of labor in society is becoming more and more detailed and clear, which requires the government to reasonably classify and divide the human resources in the public population [1]. In the new era, building a public service platform for human resources requires innovative research. To build a demonstration base for innovation and entrepreneurship, it is imperative to do a good job in the accumulation of talents and the development of the regional economy. The human resources public service platform is one of the important components of the government public service system [2]. The effective operation of the public service platform of human resources is conducive to promoting the comprehensive, coordinated and harmonious development of economy and society. Human resources public service platform is an effective and comprehensive social service platform. It can make use of social and public resources, allocate human resources uniformly and effectively, so that the allocation of human resources can focus on the society most effectively [3]. Human resources public service platform is an important part of the public service system of the municipal government. Human resources, scientific and technological innovation, intellectual property rights, venture capital and information services constitute the five major public service platforms [4]. Constructing human resources platform is an important starting point for implementing the strategy of “developing the city through science and education” and “strengthening the city through talents” [5]. The public services provided by the government are mainly reflected in the public services provided by the government for the whole society, such as education, culture, sports, medical and health care, science and technology, agricultural technology and so on [6]. Under the condition of market economy, due to the limitations of market mechanism itself, the market mechanism can not effectively

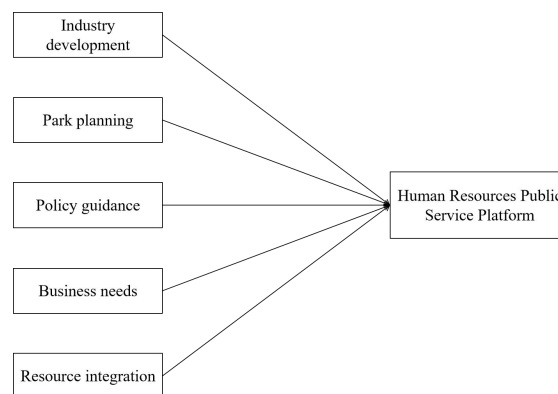
regulate the production of public services, and market failure will occur. It is necessary for the government to provide public services to ensure the effectiveness of public services [7].

In recent years, with the continuous implementation of the strategies of “revitalizing the city through science and education” and “strengthening the city through talents”, “science and technology are the primary productive forces” and “human resources are the primary resources” have become the consensus of the whole society. Terms such as “independent innovation”, “leading talent”, and “intellectual property” have become the basic consensus to promote social and economic development [8]. The human resources public service platform is mainly based on the company's development strength, development strategy goals and the internal and external conditions of the company, selects appropriate operating technology, and analyzes the number, quality and structure of the company's human resources supply and demand [9]. Human resources public service platform is an important part of human resources planning. Scientific analysis can help enterprises better plan the amount and mode of human resources demand in the future, provide an important basis for enterprise human resources decision-making, and ensure the effective implementation and implementation of enterprise business activities and strategic goals [10]. At present, science and technology are changing rapidly, the market environment is also changing unpredictably, the flow of talent is accelerating constantly, and the operation of human resources public service platform plays an increasingly important role in the development of enterprises [11]. In this paper, set pair analysis theory is introduced into the operation mechanism of public service platform of human resources, which is characterized by clear hierarchy, simple calculation and high accuracy compared with other methods.

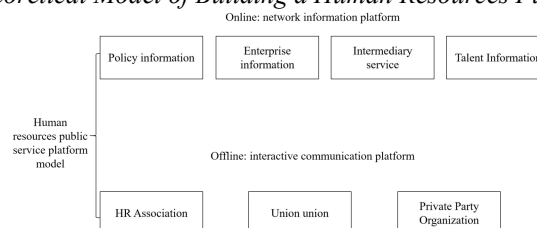
### III. Operation of Human Resources Public Service Platform Based on Set Pair Analysis

#### A. Main Ideas of Operation Design of Human Resources Public Service Platform

The establishment of human resources public service platform must be based on industrial development, park planning, policy guidance, enterprise demand and resource integration under the general environment. As shown in Fig. 1. The service model is formed by building online and offline platforms. As shown in Fig. 2.



*Fig.1 The Basic Theoretical Model of Building a Human Resources Public Service Platform*



*Fig.2 Human Resources Public Service Platform Model*

The construction of the human resources public service platform has the dual functions of public services and intermediary services. At this stage, the “two-wheel drive” should be adhered to, and public services and intermediary services should be promoted simultaneously. The two should be unified in the service process design to form a whole. However, the development of the platform should be clear: public services should take social benefits as the main goal, authorized by the government, the platform should bear the corresponding responsibilities, and manage and operate in accordance with the requirements of public service products: in competitive intermediary services. On the one hand, the market mechanism is introduced and operated in a corporate manner [12]. Public welfare service and competitive business should be separated relatively. The focus should be on delimiting the boundary between government and market, clarifying the responsibilities of supervision and service, and distinguishing the scope of paid and free services. However, this does not mean that government operation and market operation are separated from each other. We can effectively integrate the two modes to form government macro-control, market intermediary independent operation, industry self-discipline, etc. Good Character Bureau of Human Resources Public Service.

Public services and market services are two major sectors of human resources service industry. At present, public services are often carried out based on government human resources service agencies, so they coexist with market services in a large human resources service system. As shown in Table 1.

*Table 1 Comparison of Human Resources Public Services and Market Services*

Project content	Human Resources Public Service	Human Resources Market Service
Nature of Service	Handling government-authorized affairs, accepting government-entrusted matters, meeting the common needs of the public, and basic guarantee services	Meet customer needs
Institutional nature	Various service agencies authorized or entrusted by the government	Enterprise
Service purpose	Satisfy public needs, public welfare	Operational and profitable
Input mode	Public finance	Self-receipt, self-management, self-financing
Human resource allocation	Recruitment of civil servants, recruitment of public institutions, public welfare human resources exchange meetings, and supply-demand meetings for military transferred cadres	Market recruitment, high-end headhunting, human resources dispatch
Charge situation	Free, or charge a certain cost according to the approval of the Price Bureau	Pricing according to market supply and demand, charging according to service quality

The public welfare function positioning of public institutions in the government personnel system should be gradually sorted out and studied in conjunction with the reform of public institutions. The government-supervised human resource service centers, examination institutes, training centers, overseas human resource service centers and other institutions are typical public service organizations and an extension of government functions. On the one

hand, they must do a good job of public service for non-profit purposes, and play a guiding and exemplary role in related fields. On the other hand, in the case of market irregularity and immaturity, they can not completely exit the market, on the contrary, they also need to intervene in the market and cultivate the market. Therefore, the functional positioning of such institutions should be combed and studied step by step in combination with the reform of public institutions.

Actively promote the establishment of a number of trade associations and non-governmental chambers of commerce operating according to market rules, participate in public management and public services of the society, and enter the platform building. Re-design business processes to improve service performance and service quality. Gradually straighten out the relationship between public services and market services, so that the platform building has both public and commercial service team systems, forming a benign complement. In the long run, the functional development and development path between public services and market services should be differentiated, which requires practice, exploration, differentiation and development [13]. In view of the current platform construction situation, the initial planning and construction stages require huge investment, and the economic benefits are not obvious. The social benefits reflected are the main components. Therefore, government investment and government promotion should be the main component, and the market mechanism should be appropriately introduced. After the platform develops into a scale, use its brand effect to widely absorb social and market forces, and gradually make the platform development enter the track of guiding the market and cultivating the market.

### ***B. Set Pair Analysis Clustering***

Set pair analysis theory is a system analysis method proposed by Zhao Keqin in 1989. Its core idea is to analyze and process the deterministic and uncertain relationship of the objective things being studied as a deterministic uncertain system, in which deterministic and uncertain are related, influence, restrict each other, and transform each other under certain conditions [14]. The basic concept of set pair analysis is set pair and its connection degree. A set pair is a pair composed of two sets which have a certain connection. According to a certain characteristic of a set pair, we can find out the common characteristic, the opposite characteristic and the difference characteristic which is neither common nor opposite [15].

The specific steps of the set pair analysis clustering method are as follows:

- (1) Determine the classification model system of thing N. The set of possible classifications denoted N is . . .
- (2) Establish the vectors of similarity, difference and inverse relationship between the classification mode system describing N and the reference system. If  $\mu_k = (a_k, b_k, c_k)$  is used to represent the same-different-inverse connection vectors derived from the set pair of the kth classification mode system  $A_k$  and the reference system, the degree of association can be recorded as  $\mu_k = a_k, b_k i, c_k j$  ( $k = 1, 2, \dots, n$ ).

If each classification mode system  $A_k$  is related to m factors, and the similarity, difference and anti-correlation degree of the t ( $t = 1, 2, \dots, m$ ) factor is  $\mu_k^t$  C after the kth classification mode system  $A_k$  ( $k = 1, 2, \dots, n$ ) and the reference system form a set pair, then there are m corresponding correlation degrees  $\mu_k^1, \mu_k^2, \dots, \mu_k^m$ , from which the correlation degree  $\mu_k = a_k + b_k i + c_k j$  can be obtained. If the connection degree between classification system and reference system depends on different factors, or the importance of each factor to classification is

different, the weight coefficient is used to express the importance of each factor. The weight coefficient is written as  $a(a_1, a_2, \dots, a_n)$ , where:

$$\sum_{k=1}^m a_k = 1 \quad (1)$$

At this time, the connection degree  $\mu_k = a_k + b_k i + c_k j$  can be regarded as the weighted average connection degree of these m connection degrees  $\mu_k^1, \mu_k^2, \dots, \mu_k^m$ :

$$\mu_k = a_1 \mu_k^1 + a_2 \mu_k^2 + \dots + a_m \mu_k^m = \sum_{i=1}^m a_i \mu_k^i \quad (2)$$

(3) Establish the similarity, difference and counter relation vector between the system B to be run and the reference system describing the thing N.  $\mu = (a, b, c)$  is the similarity, difference and inverse connection vector obtained after the system B to be run and the reference system are paired, or it is recorded as the connection degree  $\mu = a + bi + cj$ .

(4) Calculate the distance between similarities and differences. Set  $\rho_k (k = 1, 2, \dots, n)$  as the distance between the same-different-inverse connection vector  $\mu_k$  and  $\mu$ , which is called the same-different-inverse distance:

$$\rho_k = \sqrt{(a_k - a)^2 + (b_k - b)^2 + (c_k - c)^2} \quad (k = 1, 2, \dots, n) \quad (3)$$

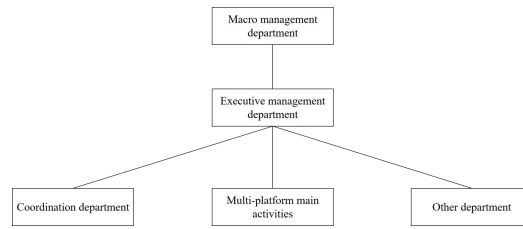
(5) Determine the category of the system B to be operated and perform operation calculation. Comparing the size of the same-different-inverse distance  $\rho_k (k = 1, 2, \dots, n)$ , if  $\rho_{k_0} = \min(\rho_1, \rho_2, \dots, \rho_k)$ , it is considered that the system to be run B is closest to the classification mode system  $A_{k_0}$ , and B can be classified as the mode  $A_{k_0}$ , which is the principle of proximity selection for the same-different-inverse pattern recognition. Remember  $x_{k_0}$ . Is the center of each classification system, the running value of b can be calculated by the following formula:

$$x = \sum_{k=1}^n \frac{x_k^0}{\rho_k} / \sum_{k=1}^n \frac{1}{\rho_k} \quad (4)$$

#### IV. The Operating Mechanism of the Human Resources Public Service Platform

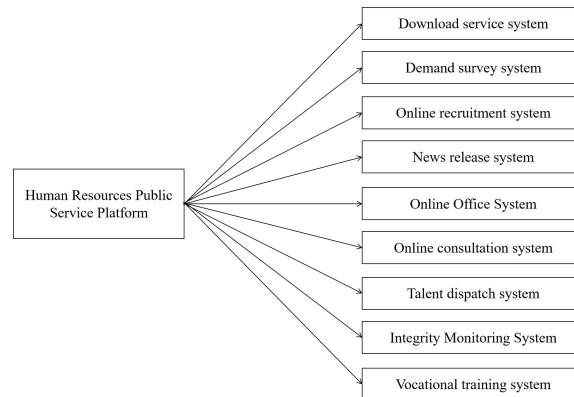
##### A. The Operating Mechanism of the Human Resources Public Service Platform

In the organizational structure of the human resources public service platform, a multi-level and orderly division of labor is established through a top-down bureaucratic hierarchy. A multi-level organizational system composed of other departments. As shown in Fig. 3.



*Fig.3 Organizational Structure of Human Resources Public Service Platform Construction*

According to human resources public service activities and service content, human resources public service platform can be composed of nine subsystems. As shown in Fig. 4.



*Fig.4 System Composition of Human Resources Public Service Platform*

The public service platform of human resources supported by modern information technology has gone beyond the traditional institutional framework. Because of the diversity of its constituent elements, the dynamic relationship between them, the material circulation, energy flow, information transmission and value increment within the system and between the system and the environment, it has become a social and economic compound system. Taking the value chain, process reengineering, and governance structure as logical clues, constructing a human resource service sharing mechanism can reveal the internal correlation mechanism of the sharing mechanism, so that the sharing problem of human resource services can be sublimated from concept to practice, and it also makes human resources The problem of resource service sharing is gradually focused from the macro level to the micro level, thus forming a complete theoretical system of human resource service sharing mechanism. On the basis of process reengineering, this paper analyses the mechanism of human resource service sharing collaborative network operation, clarifies the benefit guidance mechanism, benefit coordination mechanism, collaborative operation mechanism, technology guarantee mechanism and organization guarantee mechanism among various systems, establishes a model to analyze the influencing factors of various mechanisms on human resource service sharing, and lays a foundation for the design of governance structure.

The basic, strategic and continuous characteristics of human resources services determine the government's leading role in the process of sharing human resources services, and the performance of government policies ultimately depends on the leading role of grass-roots units and the implementation of grass-roots units, which determines the policy to take advantage of the trend, otherwise it will go against the original intention of policy design and be difficult to achieve the expected results. The process reengineering and the redesign of governance structure provide a micro foundation for the government to make policies. Due to the diversity of participants and the complexity of the nature of human resource services, it is extremely difficult to coordinate human resource service sharing. To this end, the use of measures to optimize the combination of technology, to propose an optimized combination of human resource service sharing policies, so that the policy guarantee chain of human resource service sharing forms a semi-

closed chain, making policy formulation open and feedbackable, and can be linked end to end. The network structure and mutual responsiveness will greatly improve the coordination and integrity of the policy system, thereby improving the administrative efficiency of public services.

### ***B. Necessity of Human Resource Public Service Platform Operating Mechanism***

At present, with the increasing improvement and development of the functions of human resources and social security services in China, the features of a wide range of service objects, a large amount of services and a large number of items are presented. It is difficult to achieve the goal of seamless and full coverage of human resources and social security management services by relying solely on the management and service system of the original social sector. Therefore, it is necessary to rely on the grassroots platform to undertake all-round public service functions directly facing the grassroots masses. This is an inevitable trend to truly establish and improve a unified, standardized and efficient grassroots human resources and social security management service system. In addition, the improvement and development of the market economy system requires the improvement and development of the management system of human resources.

Human resources public service platform can not only realize the effective allocation of human resources, but also adapt to and promote the development of China's market economy. Traditional human resources market can no longer meet the current situation of China's rapid economic development. What China and Chinese governments at all levels need now is to actively and effectively allocate human resources, promote the development of market economy to the greatest extent, and improve the management mechanism of people's happiness index to the greatest extent.

## **V. Conclusions**

The human resources public service platform is a good social management mechanism based on China's national conditions. The effective operation of the human resources public service platform mechanism requires the coordination and cooperation between the government and the market to realize the optimal allocation of human resources. At the same time, the smooth operation of the human resources public service platform mechanism can promote the development of China's economy and society, which is an effective human resource. Resource management system. While focusing on the construction of grassroots platforms, all levels must pay special attention to dynamic management, use management to promote services, and use management to promote upgrades, so as to establish grassroots human resources and society that are close to the people, love the people, benefit the people, and facilitate the people. Guarantee the brand new image of service. In this paper, the theory of set pair analysis clustering algorithm is applied to the public service platform of human resources, and various main factors affecting the human resources environment of enterprises are reasonably analyzed and dealt with by comprehensively considering the determined and uncertain factors in the dynamic environment of human resources. The original intention of human resources service is to establish a more professional and efficient talent management and organizational structure, and further enhance the efficiency of talent management. Public departments should do a good job in the cooperation and development of talent service policies and resources, and effectively promote the high-quality development of public talent service management. Based on this, we should optimize management, innovate services and do a good job in coordinated development.

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