

Research and Analysis of Human Resource Management in Private Retail Enterprises Based on Double layer game model

Wang Yu

Doctor of Philosophy (PHD) Management, LimKoKwing University of Creative Technology,
Cyberjaya, Selangor, 63000, Malaysia

wangspace@qq.com

Abstract

With the entry of human society into the "Internet +" new economic era, private retail enterprises have developed rapidly. As a result, people also feel that the development and utilization of human resources is playing an increasingly important role. Human resource management has evolved from a management function that maintains the normal operation of the organization to a strategic management level of private retail enterprises. The role of human resource management in the improvement of corporate performance has gradually been recognized, and its role at the strategic level has been confirmed by the practice of retail industry. The idea of strengthening the development and management of human resources in retail enterprises has gradually been adopted by major retailers all over the world. More and more enterprises have begun to put human resources management in the strategy of determining the survival and development of enterprises. Highly think, so as to effectively achieve the expected goals, implementation effects and human resources management work evaluation of human resources management activities, and how to improve human resource management, making retail enterprises run more efficiently, many companies have tried various method. At this point, the double-layer game model theory has been developed and widely used in the process of enterprise human resource management. For more in-depth analysis, this paper studies the application of the two-layer game model in private retail enterprises, and carries out empirical analysis, and finds that the theory can effectively improve the efficiency and efficiency of enterprises, and the practical value is very obvious.

Keywords

Double-layer game model; Private retail enterprise; Human resource management; Empirical analysis.

1. Background description

In the era of knowledge economy, talents have become the first important factor in the development of enterprises. Especially in the fierce market competition, the role and quality of human resources in the market competitiveness of enterprises has become more and more prominent. With the continuous expansion of the scale of enterprises, the number of employees in the enterprise has also begun to increase, leading to the human resources management of enterprises becoming one of the most critical issues in the development of enterprises. Attracting talents and preventing brain drain is the main purpose of enterprise human resource management. Under the background of rapid development of new Internet economy, how to further improve enterprise human resource management becomes one of the main considerations in the future development of enterprises. The development of private retail

enterprises requires strong human resource management. The human resources management of enterprises needs to quantitatively measure and evaluate the performance of human resources management to show the work effect of the department and put the human resources management work on a virtuous cycle. And finding a suitable model to promote and promote the development of retail enterprises is the key, so after years of exploration, many retail companies began to look at the way of two-tier game model to manage human resources, and carry out Trial, verified and achieved good results.

2. Problems in human resource management in private retail enterprises

In the context of the new Internet economy era, the human resource management system is an important part of the new Internet economy of enterprises. The realization of human resources management through information systems is of great significance to enterprises under the new economic conditions of the Internet and the rapid development of enterprises. And role. From the current development status of enterprise human resource management, continuous improvement of management efficiency and motivating employees have become the main goal of human resource management. A large number of Internet technology development has also played an important role in the development of human resource management. . However, for retail enterprises, due to the fragmentation and hugeness of their human resource management, the lack of relevant systems has led retail enterprises to use traditional manual management methods to handle personnel information in human resources management, resulting in human resource management. Less efficient.

3. Research on Human Resource Management of Private Retail Enterprises Using Double-layer Game Model

In view of the current situation of the lack of human resource management system in China's retail enterprises, how to find a suitable model to guide the human resources management of private retail enterprises is very necessary, and provide an effective management platform for the related business of human resource management. It can contribute to the sustainable development and rapid development of enterprises. After continuous exploration, many enterprises have begun to try to use the double-layer game model to study the human resource management of enterprises.

3.1 Analysis of Double-layer Game Model of Retail Enterprises

The two-layer game model, which divides the human resources management of retail enterprises into two stages: the upper management of retail enterprises at the first level and the lower management of retail enterprises at the second level, and these two levels are Mutual influence and mutual intersection. For the analysis of the upper management and the abandonment of retail enterprises, whether it is from the upper management of retail enterprises or the lower management of retail enterprises, if only a certain level is regarded as an independent variable and other factors are regarded as given, it is not enough. Analysis of the influencing factors of the upper management of retail enterprises is both lack of explanatory power and lack of foresight. And the simple superposition of each level can also comprehensively and deeply analyze the process of its interaction.

Nowadays, corporate decision makers in the field of private retail business relations have basically reached a consensus that the results of the relationship between private retail enterprises and enterprises are affected by both the upper management of retail enterprises and the lower management of retail enterprises. Therefore, the question is not whether to consider the influencing factors of the human resources management level of retail enterprises, but how to combine the lower management of retail enterprises with the influencing factors of the upper management of retail enterprises, and establish an effective analytical framework through a whole A comprehensive perspective to analyze the relationship between the retail industry and the human resources management within the retail industry. The core concept of the "double-layer game" theory is the "winning set." By definition, "winning set" refers to the scope of management decisions at the second level of management that may support the agreement reached at the first level. The scale of the winning collection is very

important for the upper management of the retail enterprise, but the impact of its size on the management effect is relative. The larger the winning set, the higher the manager's position in management. The greater the winning set in the retail industry of the parties involved in the management, the greater the likelihood of reaching a foreign business agreement at the first level. The greater the winning set of the parties involved in the management at the second level, the more likely they are to be challenged by other managers at the first level, thus making more concessions; otherwise, they will be harder and thus more advantageous. The smaller winning set will enable managers to gain greater bargaining power.

3.2 Modeling and Analysis of Double-layer Game Model in Retail Enterprises

3.2.1 The upper management structure of human resources in the double-layer game model of retail enterprises

The upper management structure decision of the retail enterprise aims to determine the choice of candidate modules, the selection of basic modules, and the number of human resource management modules and retail sales indicators to meet market and environmental needs. The decision-making objective of the upper management of retail enterprises is to maximize the unit cost utility of product families based on customer, engineering and environmental perspectives. Therefore, the upper management of the human resources of the model can be expressed as follows: The objective function representing the upper management of the retail enterprise is mainly obtained by the summation of the utility of the basic module of each low-carbon product.

Indicates the probability that a customer in a market segment chooses to purchase a retail enterprise. There are many factors involved in the probability that a customer in each market segment chooses a retail sales indicator, such as product price, product quality, service level, and function-aware utility. The customer benefit evaluation index of the product family architecture design is the customer's perceived utility to the product function, so the selection probability is expressed as a functional form of utility. Represents the total demand for products in a segment of a market.

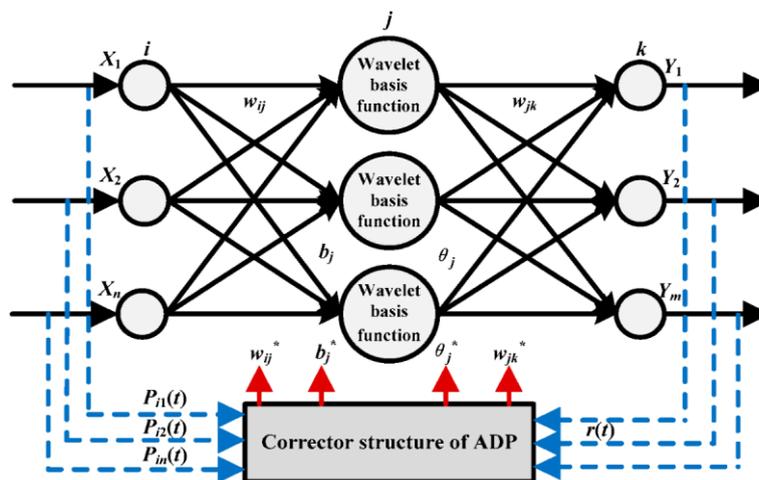


Fig. 1 Double-layer game model diagram of private retail enterprises

The external human resources management is reversed through the external customer consumption of the enterprise. The effect of external human resources outside the retail enterprise is measured by this method, which is mainly composed of design cost, engineering cost and environmental cost. Representing the customer utility of the first retail sales indicator in the market segment. The utility of the retail sales indicator is equal to the summation of engineering utility and benefit. The engineering benefit is only the customer perceived utility of the product function module. This part of the utility is based on joint analysis. The law is obtained, and the benefit mainly refers to the economic benefits caused by the total amount of retail sales of the module candidate during the development and use phase. Here, by constructing a benefit function of the retail sales quantity of the module candidate achieve. Through the retail sales indicators, and then brought into the double-layer

game model to compare and compare, this logarithmic function model is widely used in the economic field to measure customer satisfaction, and then can indirectly reflect the effect of retail enterprise human resource management.

3.2.2 The lower management structure of human resources in the double-layer game model of retail enterprises

According to the process configuration optimization section in the retail enterprise, the human resource manager needs to determine the process configuration plan of the corresponding retail enterprise based on the underlying structure of the human resources management system and the decision-making objectives of the retail enterprise, and the decision-making content mainly includes Internal human resource management approach, optimal management of each human resource management module, optimal assembly of each retail sales indicator, and product human resource management solutions for different market segments, through which these overall human resources are realized Minimize management costs.

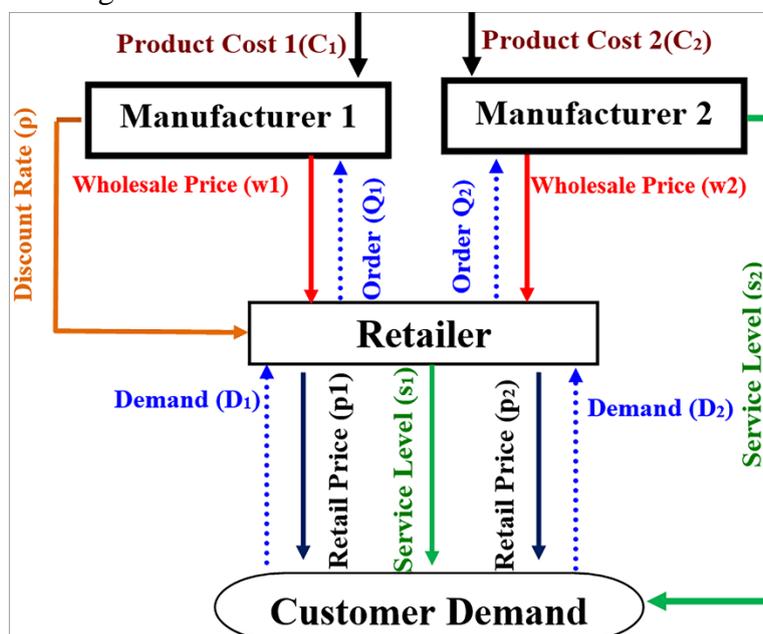


Fig. 2 Analysis of the upper and lower game models of retail enterprises

In the human game management mode selection game system in the retail enterprise, combined with the above two-layer game model human resource management to select the stakeholders' analysis process, it can be found that the game between the enterprise human resource manager and the enterprise employee can be humanized. The upper management game of resources indicates that enterprise human resource managers aim at maximizing social benefits, and corresponding human resource management strategies and various market activities interact with enterprise employees to avoid vicious competition in basic human resource management services within enterprises. Conducive to the healthy development of human resources management within retail enterprises. The game process between employees and employees with their own interests can be regarded as the lower-level game. As the service target, employees can choose better and better human resource management solutions for human resource management. As the selected target, in order to gain more market share, it is necessary to adopt various measures including performance appraisal. It is the most important goal to carry out more human resources management. For this reason, he will take some incentives. Program to attract employees to work with them.

3.3 Double-layer game model utility of retail enterprises

3.3.1 Human Resource Management Awareness

The enterprise human resource management system is fully functional. First of all, we must have a comprehensive and profound understanding of the guiding ideology, strategic guidelines and

management strategies of human resources management. This is not only because the traditional retail enterprise's human resource management awareness and strategy reengineering are the ideological basis and preconditions for building a highly efficient human resource management system, but also because most leaders and human resource managers have the basic concept of efficient human resource management. It is not clear enough about the strategic position of human resources management. The development of two-line integration requires traditional retail enterprises to develop a human resource strategy that focuses on the overall situation from the perspective of corporate strategy, change the view that the human resources department only provides administrative support, and turn it into an organization of value creation to fundamentally understand the performance. The role and role of the human resource management system in business management. The guiding ideology of high-efficiency human resource management system reengineering can be summarized as: adapting to the strategic goals of the enterprise; following the basic principles of human resource management; adapting to the development of employees; and adapting to the goal of human resource management reengineering. At the same time, the artificial resource management strategy is adjusted to meet the needs of the development of two-line integration. The high-efficiency human resource management system promotes the following strategies: First, the human resources capitalization strategy. By introducing the concept of "human capital", retail enterprises regard employees as the first wealth, formulate a more humane enterprise system, and enhance the value of human capital from employee satisfaction and career development needs, thus making the company more energetic.

3.3.2 Knowledge Management Strategy

Under the control of the dual-line integration development strategy, the traditional retail enterprises' demand for e-commerce talents is essentially the demand for Internet knowledge. Knowledge management combines employees and knowledge through the Internet new economic technology to create a corporate culture of knowledge sharing. Improve the level of knowledge sharing and innovation of enterprises. Under the two-line integrated development strategy, the flexibility and creation of employees should be strengthened, and the human resources management strategy should be turned into a capability-oriented strategy. Through the cultivation of learning, communication, and contingency, the ability of employees can be improved in all aspects. Human resource management awareness and strategy reengineering are the primary issues for traditional retail enterprises to develop online and offline integration strategies and transform human resource management systems. For practical workers, there is still a long way to go and they need to make persistent efforts and attempts. .

The overall reliability of the high-efficiency man-made resource management system scale and the reliability test results of each factor, such as human resource management as a model of coefficient research and analysis, indicating that the overall table and each factor have ideal internal consistency, suitable Used for research.

3.4 Empirical analysis

3.4.1 Sample selection

The human resources faced by retail enterprises are quite unique. The unique characteristics of human resources-multiple employees, new unskilled employees, more part-time employees, and special working hours-have led to the complexity of human resources management in retail enterprises. The number of employees is large. Retail enterprises are generally large in scale and require a large amount of labor, such as supermarkets, department stores, chain convenience stores, etc., and generally have a large number of employees. The large number of employees is bound to increase the difficulty of human resource management. There are many new unskilled employees. The large presence of unskilled employees is a major feature of retail companies. Due to the large amount of labor required and the low demand for education, training and skills in retail work, many of the employees recruited are employees with little or no experience, but low entry barriers and low wages result in high employee turnover. The phenomenon of late arrival and absenteeism has occurred.

There are many part-time employees. Because retail companies have long working hours, complex customer needs, and low wages, companies often have to hire part-time employees. In many large supermarkets, part-time employees are even more than half. There are many part-time employees, and often there are many management problems. For example, this part of the staff lacks professionalism, and there are more phenomena of being late, absenteeism and resignation, and working hours are special. Many retail companies operate year-round, and some even operate overnight. Therefore, some retail companies use two-shift or three-shift systems, and employees usually go to work at night. In addition, weekends and holidays are often the busiest time for retailers, so retail employees often do not have the same rest as employees in other industries during these hours. The nature of this work may make many retail employees uncomfortable. The various characteristics of the above-mentioned retail enterprise human resources make the human resources management of retail enterprises relatively difficult, and the number of unskilled employees and part-time employees is large. Coupled with the special working hours, the turnover rate of retail enterprises is high, and the turnover of employees Sexually large.

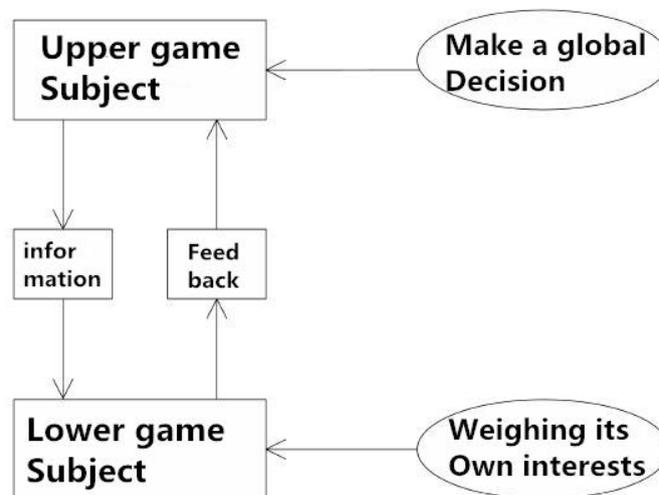


Fig. 3 Double-layer game model system diagram of retail enterprises

3.4.2 Empirical analysis

(1) The solution process of the empirical analysis algorithm The specific operation steps are as follows:

Take 100 employees of a retail company as an example for analysis:

Step 1: Constrain the preprocessing. In order to reduce the management space of the external human resource management structure of the retail enterprise and the management of the lower management of the human resources of the retail enterprise, and improve the management efficiency, the relevant constraint reasoning mechanism such as decision structure, selection level method and decision level method are applied before the formal solution problem is solved. Pre-processing the constraints of the model.

Step 2: Initialize external resource management. A subordinate external resource management initial data of a size is randomly generated according to the number of lower external resource management decision variables. Then, the decision variables of the lower external resource management model are encoded by an integer coding strategy.

Step 3: Underlying external resource management constraint checking. Use the lower-level external resource management constraints to perform constraint checking on the initial management of the lower-level external resource management to confirm whether the initial management meets the rules of the human resource management architecture. If the check is passed, the next step is to enter the lower internal human resource management model. Otherwise, the initial management fitness value needs to be set to 0 and then the subsequent operations are performed.

Step 4: Initialize the internal human resource management management of the lower layer. For each generated child, pass its feasible solution to the lower internal human resource management. The underlying internal human resource management is also based on the solution of the underlying external resource management and its own decision variables.

Step 5: Check the internal human resource management termination conditions of the lower layer. The iterative operation stops when the number of managed iterations reaches the set upper line value. The lower internal human resource management feasible solution and objective function value obtained at this time are the optimal solution and optimal value of the lower internal human resource management problem. The optimal value of the internal internal human resource management problem is fed back to the lower external resource management algorithm. If the number of iterations has not yet arrived, the replication, crossover and mutation of the underlying internal human resource management genetic algorithm are required. Then feed the results back to step 5.

G: the ratio of the number of business leaders

P_{im}: Human Resource Management Factors

i: Factors affecting employee management

j: feedback to the underlying management factor

P_j: feedback to the upper management factor

X_r: upper human resource management factor

X_j: Lower human resource management factor

$$X_r = \frac{G_h p_{im}}{\sum_{i=1}^{j=1} p_j + \delta^2} \tag{1}$$

$$X_j = \frac{G_h p_{im}}{\sum_{i=1}^{h=1} p_j + \delta^2} \tag{2}$$

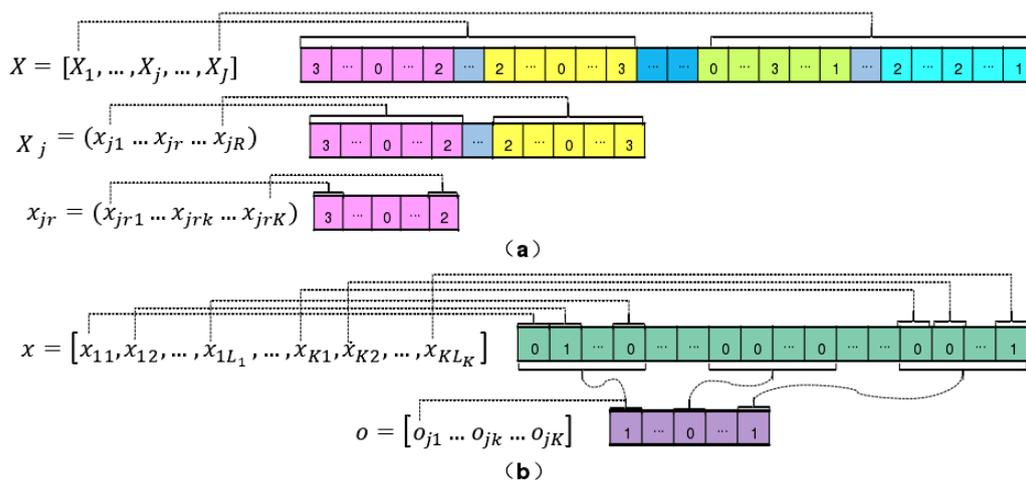


Fig. 4 Iterative analysis of the two-layer game model

$$Px = ox_i - x_i - y_i \tag{3}$$

Step 6: Evaluation of the lower-level external resource management progeny: Calculate the fitness of the lower-level external resource management chromosome according to the optimal value of the lower-level internal human resource management feedback, wherein the optimal value of the lower-

level internal human resource management problem is firstly based on the lower-level external A feasible solution to the resource management human resource management architecture decision.

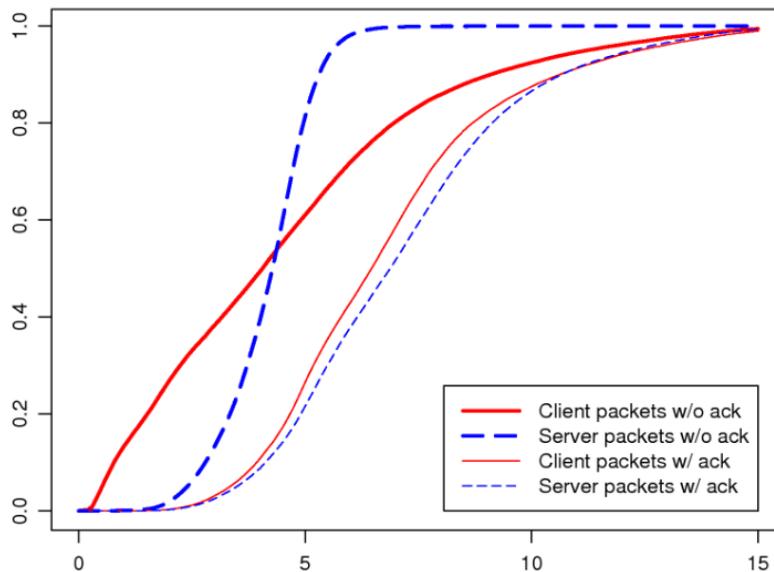


Fig.5 Game trajectory analysis of the game numerical curve

Step 7: The lower layer external resource management termination condition check. When the number of iterations of the lower-level external resource management algorithm exceeds the predetermined number of iterations, the lower-level external resource management iteration stops, and the lower-level external resource management feasible solution and the objective function value obtained at this time are used as the optimal solution for the lower-layer external resource management optimization problem. Combined with the optimal solution and optimal value of the lower internal human resource management problem brought up by the lower internal human resource management feedback, and then check whether the enterprise retail increase of human resource management and the number of solutions of the composite module have reached the maximum set. Value, if the number of composite modules has not reached the preset value, the number of new composite modules needs to be further solved. If the preset value is reached, it is further checked whether the solution reaches the preset value, and if not, the new one is calculated. The optimal value and the optimal solution for the number of retail sales increase, and if the preset value is reached, the entire two-layer model is solved.

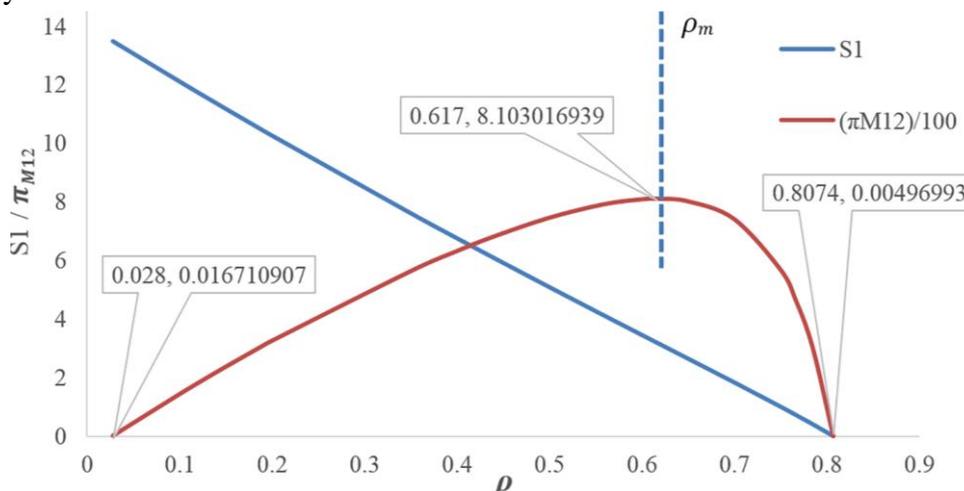


Fig.6 Convergence analysis graph based on double-layer game number

Table 1 Human Resource Management Calculation Data Sheet

Serial number	Sample content	Upper management factor X_r	Lower management factor X_j
1	Analysis of the upper management factors of enterprises	0.1165	175.313
2	Retail enterprise decision analysis	0.1165	175.049
3	External feedback from retail companies	0.617	810.302
4	Analysis of the factors underlying the management of enterprises	0.7666	465.030
5	Retail enterprise employee management	0.7666	465.384
6	Retail company employee feedback	0.8074	0.49699

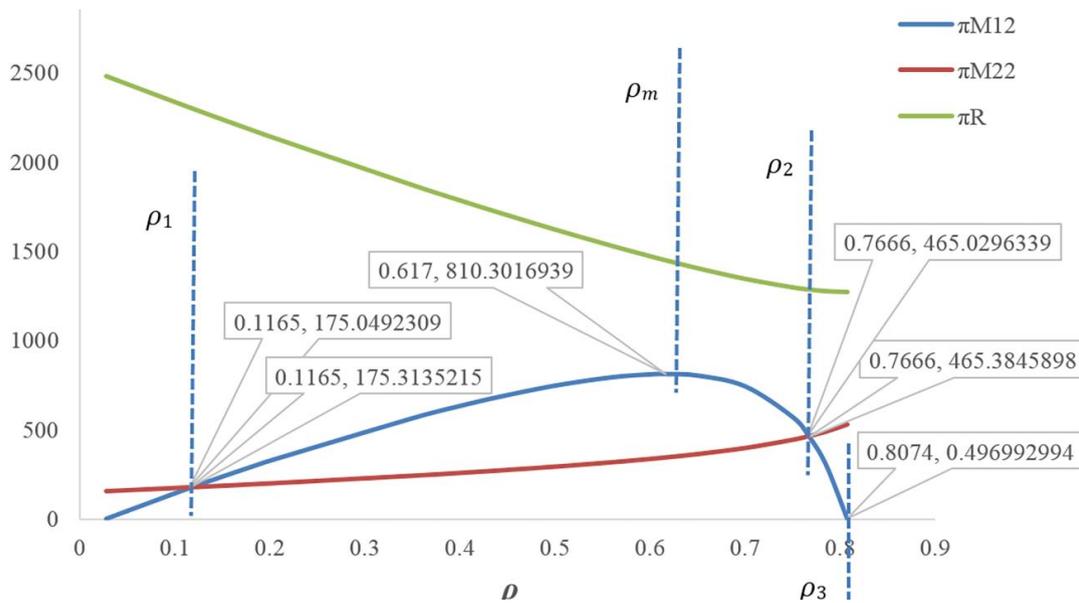


Fig.7 shows the simulation of the trajectory map to get the trajectory

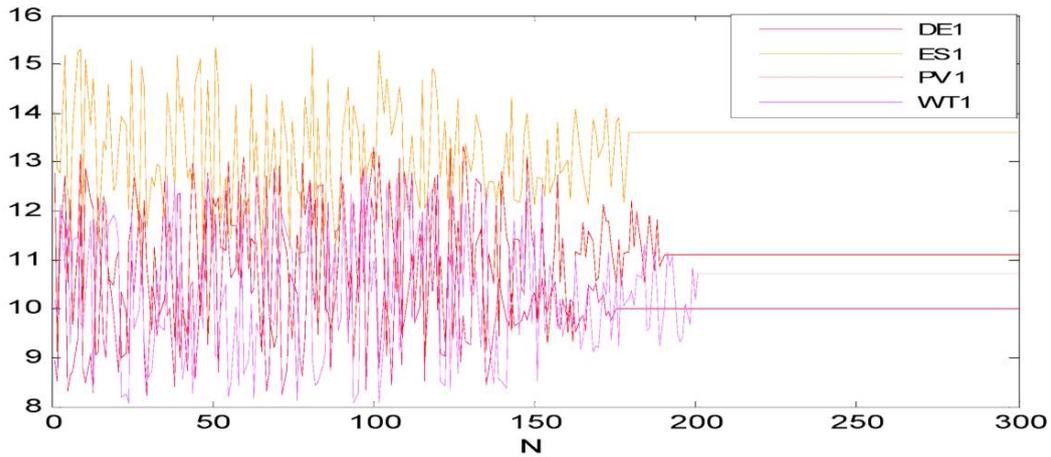


Fig.8 Retail enterprise human resources indicator map

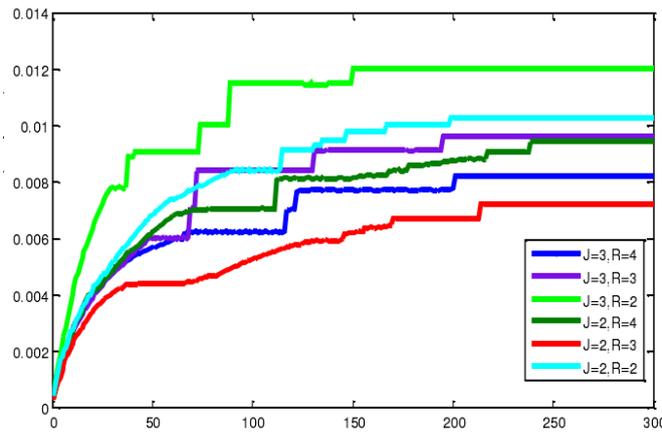


Fig.9 double-layer game model results analysis chart

3.4.3 Research and analysis

The Institute is to measure content validity and structural validity. Content validity, also known as logical validity, refers to the appropriateness of the project to sample the predicted content or range of behavior, and the appropriateness and consistency of the measurement content. This study has a comprehensive review of the literature and detailed analysis in the process of collecting high-efficiency man-made resource management system management methods, and has a good investigation of the structural dimensions of high-efficiency human resource management systems. In the policy preparation stage, experts in the academic background of human resources, business management practitioners and relevant experience were consulted. The employees were asked to make an open-ended answer and form a formal empirical analysis through the pre-investigation questionnaire. From the analysis results, the content of the scale can basically reflect the composition of the high-efficiency human resource management system, so it has good content validity structure validity, and the retail enterprise measures the theoretical structure to be measured in the double-layer game model. The degree of traits means the consistency between experiment and theory, that is, whether the experiment actually measures the theory of construction.

This paper regards the human resource management manager as an important game layer game analysis, the game process between the enterprise human resource manager and the enterprise employee, and the game process between the employee and the enterprise employee as the double-layer game model of human resource management. The upper and lower layers are used to analyze the game process of the upper and lower layers. Then the transformation is solved and the feasible solution process is given. From the perspective of the actual participants of the human resources

management process, the integration of different human resource management methods and resource allocation issues are discussed, which has strong practical application and economic value.

4. Conclusion

Finally, combined with the double-layer game model, the human resource management of retail enterprises is deeply studied. For the retail industry, the customer determines the success or failure of the enterprise, and the employees serve the customers, which affects the customer's perception and judgment of the enterprise. Therefore, managing employees is a very important factor in the management of human resources in retail enterprises. Private retail enterprises must attach great importance to the valuable resources of employees and attach great importance to human resources management. As an industry that is both traditional and less traditional in the new era, the retail industry faces many challenges as well as a new era, and it faces many opportunities. As long as the private retail enterprises are well positioned, grasp the core competences that can establish the advantages of enterprise differentiation, and carry out the work of human resources management around this core competence, they will have the opportunity to remain invincible in the fierce competition.

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