

A Study of HRM Relationships Based on a Collaborative Process Model

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Abstract—HR departments often need the assistance of supervisors from other departments or team leaders at the grassroots level to complete their HR management work. Then, whether the management activities of HR department, and the management activities of frontline managers play a synergistic effect, can improve the effectiveness of HRM. In this paper, we use the theory of synergistic management to construct a model of the synergistic process of HRM work between front-line managers and HR departments, explore the relationship between the four aspects of communication, trust, interdependence and cooperation in the synergistic process between the two and HRM effectiveness, and finally arrive at the relationship between the formation mechanism and HRM effectiveness, and the relationship between the realization mechanism and HRM effectiveness. The innovation of this paper is to try to use a new theoretical perspective to explore and discover new variables and influence paths that affect HRM effectiveness in order to enrich the content of HRM research.

Keywords- human resources; management; collaborative process model; effectiveness

1 INTRODUCTION

There is a positive relationship between HRM effectiveness and organizational performance, and companies with effective HRM can be in a good position to compete and gain sustainable competitiveness to improve their organizational performance. How to effectively improve the effectiveness of HR department has become an issue of interest to scholars as well as entrepreneurs. Existing research has found that there are differences in cooperation and collaboration between HR departments and frontline managers in their work: frontline managers dislike the bureaucracy and institutionalization of HR work, which often arises in their implementation of HRM activities; HR departments perceive that frontline managers perform unsatisfactorily when conducting employee performance appraisals; in addition, HR decentralization makes frontline managers have a higher workload and a more complex role, which may negatively affect the implementation of HRM by frontline managers, thus affecting employee attitudes and performance [1]. This paper argues that frontline managers and HR departments belong to two parts within the same company, and they are intertwined by their HRM responsibilities. Based on the perspective of synergistic management theory, when the two work together to reduce or avoid internal conflict, the collaboration between first-line managers

and HR departments generates a synergistic effect, which in turn improves the effectiveness of HRM in the enterprise [2].

2 RESEARCH MODEL AND HYPOTHESIS DERIVATION

2.1 Research Model

The formation mechanism of management synergy: First-line managers and HR departments belong to two different individuals, which are similar to the upstream and downstream relationships in the workflow. To a certain extent, frontline managers and HR departments can be regarded as a special kind of "supply chain". Many scholars have used the viewpoint of synergy to study supply chain management and the law of value activities of supply chain, and have achieved great success. Therefore, the four influencing factors of supply chain synergy (communication, trust, interdependence and cooperation) are used as the influencing factors of the synergy mechanism between frontline managers and human resource departments, and the formation mechanism of the synergy process of human resource management is constructed to study the relationship between the two [3].

Realization mechanism of management synergy: In the synergy process synergy tools play a great role in whether the synergy process is carried out smoothly or not. Constructing the hardware of collaborative management makes the information interaction with a reliable carrier, so that the first-line managers and HR departments can participate well in the management synergy activities. On the other hand, the contact between the two parties in the collaborative process generates subjective emotional reactions, which in turn affects the satisfaction of both parties [4]. The satisfaction of collaborative management can reflect the awareness and understanding between frontline managers and HR departments. Thus, the satisfaction of HRMIS (platform) and personnel synergy determines the development and realization of the synergy mechanism.

2.2 Research hypothesis

Based on the studies of domestic and foreign scholars, this paper considers HRM effectiveness as the extent to which an enterprise achieves the set goals when conducting HRM activities in six modules including human resource planning, recruitment and allocation, training and development, performance management [5], compensation and benefits management, and labor relations management. Referring to the classification of HRM effectiveness indicators by Mingkui Liu and Xinchao Zeng and Yuru Xu, this paper measures HRM effectiveness by evaluating a total of six aspects of HR planning, appointment, performance evaluation, compensation, education and training, and labor-management relations. These six aspects are closely related to the actual work of HR department, so as to study the synergy between front-line managers and HR department.

3 ANALYSIS OF RESEARCH BASIS

3.1 Research Subjects

According to the research model of this paper, the objects of the questionnaire distribution include two parts: the front-line managers of the enterprise and the personnel of the human resource department [6]. The front-line managers mainly refer to the project leaders, supervisors and managers of enterprise departments, who have the experience of enterprise front-line management and also have the responsibility of communication and cooperation with the human resource department; the personnel of the human resource department mainly refer to the staff who are mainly responsible for the human resource-related work within the enterprise.

3.2 Descriptive statistical analysis of the sample

The questionnaire was composed of two parts, which were filled out by both frontline managers and HRM personnel. In the questionnaire, three variables, namely collaboration process, collaboration satisfaction, and participation atmosphere, were evaluated by both parties; HRM work effectiveness was evaluated by frontline managers; HRM information system was evaluated by HRM staff. Before data processing, the data of synergy process (communication, trust, interdependence, cooperation) [7], synergy satisfaction, and participation atmosphere totaling 3 variables need to be calculated and processed separately, as follows.

(1) Synergy process mainly examines the evaluation between the two parties and each other, so the average value is obtained by adding the ratings of each party; (2) Synergy satisfaction mainly examines the satisfaction level between the two parties, so the average value is obtained by adding the ratings of each party; (3) Participation atmosphere mainly examines the atmosphere perceived by both parties in the company, and the average value is used to measure the atmosphere within the company, so the average value is obtained by adding the ratings of each party. The mean value was used to measure the internal atmosphere of the company, so the respective ratings of both parties were summed and averaged. Descriptive statistical analysis was conducted by SPSS statistical software, and the results are shown in Table 1, which shows the mean and standard deviation of each variable.

Table 1 Table Type Styles

Title	N	Mean	Std. Dev.	Title	N	Mean	Std. Dev.
Communication 1	257	3.75	0.75	System 4	209	3.75	0.75
Communication 2	257	3.67	0.73	System 5	209	3.67	0.74
Communication 3	257	3.57	0.82	System 7	209	3.46	0.81
Communication 4	257	3.65	0.67	System 8	209	3.65	0.67
Trust1	257	3.71	0.73	System 9	209	3.62	0.77
Trust2	257	3.66	0.71	System10	209	3.66	0.70
Trust3	257	3.38	0.71	System12	209	3.48	0.71
Trust4	257	3.75	0.80	Effectiveness1	257	3.75	0.69
Interdependence 2	257	3.67	0.78	Effectiveness2	257	3.66	0.67
Interdependence 3	257	3.57	0.73	Effectiveness3	257	3.57	0.73
Interdependence 4	257	3.73	0.77	Effectiveness4	257	3.57	0.74

Cooperation 1	257	3.71	0.71	Effectiveness6	257	3.71	0.74
Cooperation 2	257	3.66	0.69	Effectiveness7	257	3.62	0.87
Cooperation 3	257	3.52	0.65	Effectiveness8	257	3.44	0.69
Cooperation 4	257	3.75	0.71	Effectiveness9	257	3.78	0.75
Participation atmosphere 1	257	3,61	0.65	Effectiveness10	257	3,83	0.75
Participation atmosphere 2	257	3.57	0.69	Effectiveness11	257	3.82	0.71
Participation atmosphere 3	257	3.86	0.72	Effectiveness12	257	3.62	0.67
Participation atmosphere 4	257	3.71	0.69	Effectiveness13	257	3.73	0.67
Satisfaction 1	257	3.72	0.71	Effectiveness14	257	3.63	0.73
Satisfaction 2	257	3.38	0.75	Effectiveness15	257	3.49	0.79
Satisfaction 3	257	3.71	0.72	Effectiveness16	257	3.59	0.83
System 2	209	3,63	0.64	Effectiveness17	257	3,61	0.82
System 3	209	3.75	0.67	Effectiveness20	257	3.59	0.79

4 DATA PROCESSING

4.1 Reliability analysis

Reliability analysis was conducted based on the samples of the formal questionnaire to determine whether the reliability of the formal questionnaire was reliable, and the specific results of the reliability analysis are shown in Table 2, and the Cronbach's alpha coefficient test was used for the reliability analysis. From Table 2, it can be seen that the coefficients of all variables as well as all dimensions of the formal questionnaire are above 0.70, and only the Cronbach's alpha coefficients of two dimensions of HRIS are lower, but they can still meet the conditions, so they can be considered to have good internal consistency.

Table 2 Table Type Styles

Variables	Dimensionality	Cronbach's α	Cumulative Cronbach's α
Collaborative process	Communication	0.86	0.93
	Trust	0.87	
	Interdependence	0.87	
	Cooperation	0.86	
Human Resource Management effectiveness	Planning and Systems	0.86	0.93
	Motivation and Industrial Relations	0.84	
	Career Development and Climate	0.84	
	Data Optimization	0.72	0.82

Human Resource Management Information System	Control and Decision Optimization	0.69	
Collaboration satisfaction	Collaboration satisfaction	0.75	0.75
Engagement Climate	Engagement Climate	0.86	0.86

4.2 Analysis of the effects of control variables

Analysis of variance of gender on each variable: independent samples t-test was used to analyze the variance between the two groups of men and women to compare whether there was a significant difference between the results of first-line managers of different genders on each variable. The results showed that there was no significant difference between the first-line managers of different genders on each variable and dimension.

Analysis of variance of age on each variable: One-way ANOVA was used to investigate whether -different levels of a control variable had a significant effect on the observed quantity. One-way ANOVA was used to conduct analysis of variance for different age strata to compare whether there was a significant difference result between frontline managers of different ages on each variable [8]. From the results, it was concluded that there were significant differences in interdependence in the synergy process and also in the engagement climate among frontline managers of different age classes.

Analysis of variance of education level on each variable: One-way ANOVA was used to investigate whether different levels of a control variable had a significant effect on the observed quantity. One-way ANOVA was used to conduct an analysis of variance across educational strata to compare whether there were significantly different results across variables for frontline managers with different levels of education [9]. The results showed that there were no significant differences among frontline managers with different educational levels on all variables.

Analysis of variance for years of entry on each variable: One-way ANOVA was used to examine whether different levels of a control variable had a significant effect on the observed quantity. One-way ANOVA was used to conduct an analysis of variance for different strata of years of entry level to compare whether there were significant differences in the results of frontline managers in different strata of years of entry level on each variable. From the results, it was concluded that there was a significant difference between first-line managers at different stages of entry level in the process of collaboration with HRM; first-line managers with 21 years of entry level and above had a high level of communication with HRM; first-line managers with 21 years of entry level and above had a high level of trust in HRM.

Analysis of variance of position hierarchy on each variable: One-way ANOVA was used to analyze the variance of different strata of position hierarchy to compare whether there were significant differences in the results of each variable among frontline managers of different position hierarchy. The results concluded that there were significant differences in the interdependence of first-line managers of different position hierarchies in the process of collaboration with the human resource department, and the degree of interdependence of the junior staff was relatively low.

4.3 Regression analysis of the synergistic process on the effectiveness of HRM efforts

Regression analysis is the mathematical process of quantitatively describing the correlation between variables by providing mathematical expressions between them. The general steps of regression analysis are: (1) determining the independent and dependent variables; (2) determining the regression equation; (3) regression analysis; (4) testing the significance of the regression equation and regression coefficients; and (5) using the regression equation to make predictions. A linear regression analysis was conducted using gender, age, education, years of employment, and position level as control variables, communication, trust, interdependence, and cooperation in the collaborative process between first-line managers and human resources departments as independent variables, and job effectiveness as the dependent variable [10].

From the results, it can be seen that.

(1) The regression analysis of communication, trust, interdependence, and cooperation on HRM effectiveness showed that the F-values were 31.39, 25.91, 9.74, and 8.88, respectively, and the equations reached significance at the 0.001 level with a significant linear relationship. A total of four aspects of communication ($\beta=0.65$, $p<0.001$), trust ($\beta=0.61$, $p<0.001$), interdependence ($\beta=0.42$, $p<0.001$), and cooperation ($\beta=0.40$, $p<0.001$) in the synergy process reached a significant positive effect on HRM effectiveness. Therefore, communication, trust, interdependence, and cooperation between frontline managers and HR departments in the process of synergy have a significant positive effect on work effectiveness.

(2) The regression analysis of communication, trust, interdependence, and cooperation on each of the three dimensions of work effectiveness (planning and systems, motivation and labor-management relations, and career development and climate) showed that the four aspects of communication, trust, interdependence, and cooperation between first-line managers and HR departments in the synergistic process had significant effects on each of the three dimensions of work effectiveness: planning and systems, motivation and labor-management relations, and career development and climate. The effects of the four dimensions of communication, trust, interdependence, and cooperation on each of the three dimensions of work effectiveness: planning and systems, motivation and labor-management relations, and career development and climate reached significance (all standard regression coefficients were significant). Thus, it can be judged that communication, trust, interdependence, and cooperation have significant positive effects on each dimension of HRM effectiveness.

5 DISCUSSION OF RESEARCH RESULTS

5.1 The relationship between formation mechanism and HRM effectiveness

The relationship between communication and HRM effectiveness: the deeper and smoother the communication between frontline managers and HR departments at work, the higher the effectiveness of work. The deeper and more frequent this cross-departmental communication within the enterprise is, the better it is for the synergy and cooperation between the two sides, so that both sides of the synergy can more fully understand and appreciate each other's capabilities and needs. This kind of communication between the two sides can be in various ways, but it must

be a positive and effective communication, so that the first-line managers understand that the HR department of the enterprise can bring convenience to their work and the role played by the HR department in the enterprise; so that the HR department can understand the daily workload of the first-line managers and facilitate the formulation of suitable rules and regulations.

The relationship between trust and HR management effectiveness: the higher and deeper the trust between frontline managers and HR department in their work, the higher the effectiveness of work will be. The HR department should trust the ability of the first-line manager and believe that he/she will assist in the smooth implementation of his/her work.

The relationship between interdependence and HR management effectiveness: The higher and deeper the interdependence between frontline managers and HR departments in their work, the higher the effectiveness of their work. As the two sides work together, the first-line managers and HR departments will become dependent on each other after they realize that the other side brings convenience in each other's work, and this positive dependence can promote further collaboration between the two sides.

The relationship between cooperation and HR management effectiveness: The higher and deeper the cooperation between frontline managers and HR departments in their work, the higher the effectiveness of their work. As communication, trust, and interdependence deepen, cooperation is the inevitable result. The first-line managers and HR department have a common view on mutual cooperation, so they can reach common goals well, and such cooperation is beneficial for both sides.

5.2 The relationship between realization mechanism and HRM effectiveness

Moderating effect of HRIS: There is a significant effect of using HRIS or not on HRM work effectiveness. There is no significant moderating effect of HRIS between synergistic processes (communication, trust, interdependence and cooperation) and HRM work effectiveness. In other words, the companies using HRIS have relatively higher job effectiveness. This is consistent with scholars' studies that the use of HRIS can bring benefits to HR departments, which in turn can enhance job effectiveness.

The mediating role of synergy satisfaction: Synergy satisfaction partially mediates the relationship between synergy processes (communication, trust, interdependence and cooperation) and job effectiveness. In other words, the communication, trust, interdependence and cooperation in the synergy process can directly affect the effectiveness of both parties in HRM practice, but also improve the effectiveness of both parties in HRM practice through the synergy satisfaction of both parties. As the collaboration between frontline managers and HR departments develops, the satisfaction of both parties plays an increasingly important role in the effectiveness of HR management.

6 CONCLUSION

Based on the perspective of synergy management theory, this paper constructs a model of HRM work synergy process, with HRM work effectiveness as the dependent variable, the synergy process (communication, trust, interdependence and cooperation) between frontline managers

and HR departments as the independent variable, synergy satisfaction as the mediating variable, HRM information system as the moderating variable between the synergy process and effectiveness, and participation climate as the synergy. The study explores the constraints and paths that affect the effectiveness of HRM with the mediating variable of synergy satisfaction. The study not only provides theoretical reference for further research on HRM and synergy management, but also has a non-trivial effect on promoting HR department HR and managers in charge of each department and at the grassroots level to collaborate and cooperate with each other to develop appropriate HRM solutions.

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