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# The Relationship between Flexible Human Resource Management and Enterprise Innovation Performance: a Study from Organizational Learning Capability Perspective

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**Abstract.** Currently the enterprises are facing complex external environment. This paper aims to identify relationships among flexible human resource management, organizational learning capability and innovation performance. The qualitative research through surveys from 250 companies is designed based on organizational learning and flexible human resource management theory. The findings reveal that: 1) functional flexibility and behavior flexibility have significant positive effects on organizational learning capability; 2) extended skill flexibility is not conducive to the improvement of organizational learning capability. Therefore enterprise can use functional flexibility strategy, extended skill flexibility strategy and behavior flexibility strategy to improve enterprise innovation performance. Organisational learning capabilities, on the other hand, act as an intermediate between flexible human resource management and organizational innovation performance. From practical point of view, the research findings provide guidance for practitioners to improve human resource management and enterprise innovation levels.

**Keywords:** flexible human resource management · organizational learning capability · innovation performance

## 1 Introduction

Knowledge economy and digital age has brought great change into enterprises. Enterprises are facing fierce competition in an uncertain, dynamic and complex environment [1]. These new features therefore require enterprises to have characteristics such as adaptabilities, changes and learning capabilities. In comparison with the traditional human resource management, flexible characteristics, such as cooperation, sensitivity and harmony etc., are more indispensable to human resource management in contemporary society. Employees are encouraged to assimilate and utilize new knowledge in the environment of organizational learning. Knowledge management and integration is necessary to realize organizational innovation to achieve competitive advantage and

innovation performance. The aim of this paper is to analyze the relationship between flexible recourse management and innovation performance, as well as the function of the intermediary--organizational learning capability.

## **2 Flexible human resource management, innovation performance and organizational learning capabilities: state-of-the-art**

### **2.1 Flexible human resource management**

Flexible human resource management is a management practice to affect directly or indirectly skills, behaviors and learning capabilities of employees. This is achieved through flexible management such as flexible adjustment of employee structure, employment mode, training plan and incentive plan. The research of human resource flexibility starts from 1990s, which is based on resource theory and core competence theory. Human resource flexibility investigates how enterprises adjust to the changing environment and keep their competitive advantages through flexible human resource management strategy. This flexible management mode provides distinct insights from traditional human resource management in terms of management objective, management role and strategic position [1] (Table 1).

The focus of flexible human resource management lies in enhancing employees' flexibility of functions, skills and behaviors according to organizational needs. This involves a series of human resource management strategies to influence employees' psychology, guide their behavior, and finally achieve and align personal and organizational objectives together. Therefore, this paper divides flexible human resource management into three dimensions: functional flexible strategy, extended skill flexible strategy and behavior flexible strategy. These three dimensions are based on the Beltran [2] and Sanchez [3]'s classification of flexible human resource management measurement. Functional flexible strategy is to foster multi-skilled employees who are capable to undertake multiple tasks in various circumstances and adaptable to work among different departments quickly and with low cost. This will be achieved through employee-participated job (tasks) design, role shift and establishing a cross functional team. Extended skill flexible strategy is to create environment for employees to learn new skills and enhance their flexibility to learn quickly and undertake new tasks. This will be achieved through employee relationships system and training design, such as personnel external allocation, training and socialization. Behavior flexible strategy is to adjust employees' behavior and psychology, enrich behavior patterns enhance employee's autonomy and support the diversity of behaviors in different circumstances. These will be achieved through organization internal motivation and constraint mechanism [3].

**Table 1.** Differences between traditional human resource management and flexible human resource management

Management mode	Traditional Human Resource Management	Flexible Human Resource Management
Purpose	To improve the efficiency of enterprises	To improve the dynamic adaptation ability and competitiveness of enterprises
Management Function	Job evaluation, performance appraisal, salary management	Employee relationship management, team management, human resource outsourcing
Management Role	The one who maintain the organization at “as-is” level	The driver of organizational reform towards “to-be” level
Organization Structure	Pyramid type	Flattening type
Management Perspective	Employees and the organization are of a labor capital relationship	Employees and the organization are of a cooperative partnership
External Environment	Controllable and stable external environment	Dynamic and complex external environment
Strategic Position	enterprise strategy executor	The decision makers and executor of enterprise strategy
Management mode	Traditional Human Resource Management	Flexible Human Resource Management
Purpose	To improve the efficiency of enterprises	To improve the dynamic adaptation ability and competitiveness of enterprises

## 2.2 Flexible human resource management and innovational performance

Innovation is highly dependent on the integration of talents and knowledge, which requires organisational capability of acquiring and attracting talent. Mei's [4] research indicates that flexible human resource management can form an human resource allocation which is difficult to substitute and imitate through embedded into the enterprises' internal situation and external environment, in order to improve their survivability and development capability. Robert [14] holds that flexible human resource management comes from the flexible policies and practices in the related fields of human resource management which facilitate employees to balance job, family and livelihood to acquire senses of safe and support and also post a positive influence on organizational innovation and participation so as to motivate employees to provide extra work to organization in return. Nie [5] considers that flexible human capital and flexible human resource system are the two aspects of flexible human resource. Flexible human capital fully utilizes team knowledge to create new knowledge constantly. On the other hand, flexible human recourse system acts as a coordination mechanism. It

supports fast responses and focus on the value and scarcity of the enterprise' flexibility for long term competitiveness [5].

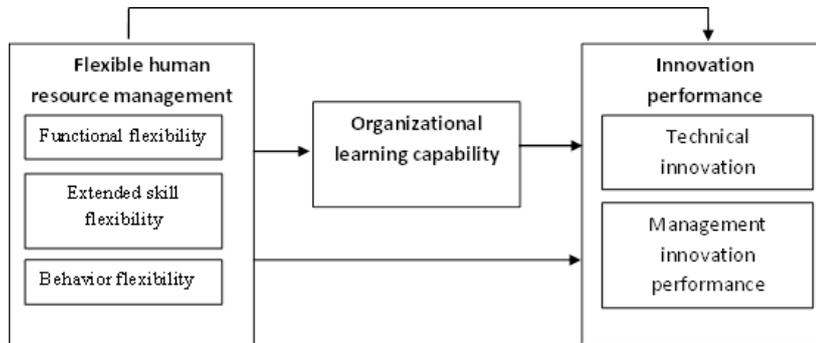
### **2.3 Organizational learning capability as an intermediary between flexible human resource management and innovation performance**

The concept "organizational learning" was first proposed by Agyris and Schon in the 1970s [6]. At first, it indicated the procedure that an organization finds mistakes and reframes its "Theories-in-use" to correct the mistakes. Kodama held that the realization of innovation target demanded for flexible staff employment [9]. Cao [7] proposed that the enterprises needed to bring in flexible human resource management according to the features of knowledge workers and adopt flexible human resource management strategies to narrow the knowledge gap and boost the efficiency of knowledge acquisition [7].

Flexible human resource management offers management support in terms of time and technology for organizational learning. The flexible extended skill strategies offers to broaden knowledge and the flexible behavior strategies facilitate the change of working mode. From the analysis above, organizational learning capability stands between the flexible human resource management and innovation performance and plays an intermediate role.

## **3 Research model and hypothesis**

There is an inner link between the flexible human resource management and innovation performance. The flexible human resource management plays an important role in the process of clearing away of the obstacles for the organizational learning. In other words, the flexible human resource management can affect the innovation performance indirectly through the organizational learning capability. We construct our theoretical underpinning based on existing theories including flexible human resource management [2, 3], organizational learning capability Pilar [15] and the innovation performance [10, 11]. We therefore proposed a conceptual model as show in Fig. 3-1 as well as the measure index for the latent variables. The analysis of the relationships among the variables is presented in details in the later sections. The aim is to illustrate and verify the combined effect of flexible human resource management and organizational learning capability on innovation performance and the mediating effect of the organizational learning capability between flexible human resource management and organization innovation performance.



**Fig. 1.** Conceptual Model of organizational learning capability, flexible human resource management and innovation performance

### 3.1 Analysis of the influence of flexible human resource management on organizational learning

The flexible strategies of human resource are often accompanied by the innovative transformation of workflow and mode. The independent and open culture can be created through enrichment and enlargement of work, job rotation and the feedback of performance evaluation. The employee can obtain senses of achievement, senses of identity, senses of duty and self-development. This can affect the staff's psychology indirectly and make them realize the necessity of constant learning and improvement. Based on the above, we propose the hypotheses as follows:

**H1: Flexible human resource management (functional flexibility, extended skill flexibility and behavior flexibility) is beneficial to the improvement of organization learning capability.**

H1a: Functional flexibility is beneficial to the improvement of organizational learning capability.

H1b: Extended skill flexibility is beneficial to the improvement of organizational learning capability.

H1c: Behavior flexibility is beneficial to the improvement of organizational learning capability.

### 3.2 Analysis of the influence of organizational learning capability on innovation performance

Organizational innovation cannot be done without the acquisition and utilization of knowledge, and organizational learning is a main way to acquire, exploit and disseminate the knowledge. From organizational learning perspective, organisations could adopt two forms of learning including exploitation learning and exploration learning to obtain competitive advantages. Exploitation learning tries to boost the utilization ratio of current acquired knowledge resource. Exploration learning tries to absorb and create new knowledge and identify new technical and business opportunities. In term

of learning range, there are internal learning and external learning. Researches on internal learning propose that there exists an “action community” which can integrate and store knowledge effectively. The external learning emphasizes on the role of customers, suppliers, competitors and other partners to gather, transfer, apply and create knowledge.

Based on the above, we propose the hypotheses as follows:

**H2: Organizational learning capability has a positive effect on the improvement of innovation performance.**

H2a: Organizational learning capability has a positive effect on the improvement of technical innovation performance.

H2b: Organizational learning capability has a positive effect on the improvement of management innovation performance.

### **3.3 Analysis of the influence of the practice of flexible human resource management on innovation performance**

The influence of the practice of flexible human resource management on innovation performance is often by the help of some mediator to affect the staff’s abilities and behaviors. Specifically, flexible human resource management emphasizes the enhancement of knowledge management and formation of dynamic capability to affect the innovation performance.

Resource Based View (RBV) takes an enterprise as a composition of various resources. If an enterprise possesses some unique resource, it then processes the capability of improving competitive advantage. Knowledge acquisition, sharing and creation form the key link of an innovation procedure. Human resource management boosts innovation through knowledge management. The enterprise dynamic capability was first raised by Teece and Pisano[8]. They emphasize the dynamic diversity of environment on the one hand and the adaptability of the capability on the other hand [8]. Modern human resource management uses internal motivation and constraint mechanisms to adjust enterprise’s dynamic capability that is able to response to changes in the dynamic environment.

Based on the above, we propose the hypotheses as follows:

**H3: Flexible human resource management (functional flexibility, extended skill flexibility and behavior flexibility) has positive effects on the improvement of technical innovation performance.**

H3a: Functional flexibility has positive effects on the improvement of technical innovation performance.

H3b: Extended skill flexibility has positive effects on the improvement of technical innovation performance.

H3c: Behavior flexibility has positive effects on the improvement of technical innovation performance.

**H4: Flexible human resource management (functional flexibility, extended skill flexibility and behavior flexibility) has positive effects on the improvement of management innovation performance.**

H4a: Functional flexibility has positive effects on the improvement of management innovation performance.

H4b: Extended skill flexibility has positive effects on the improvement of management innovation performance.

H3b: Behavior flexibility has positive effects on the improvement of management innovation performance.

### **3.4 Mediating effect of organizational learning capability**

Kodama thinks that the realization of innovation goal requires fast learning capability and making use of external expertise, knowledge as well as talents outside the organization, which requires the flexibility in the employment [9]. This flexible employment is helpful to get creative ideas and reduce cost for the organization. The reason of employing temporary workers is the low cost, but in the meantime the organization can also get competitive advantages by applying the new knowledge and creation.

Based on the discussion above, we propose the hypotheses as follows:

**H5: The organizational learning capability has a mediating effect during the procedure in which the functional flexibility human resource management positively affects the innovation performance.**

### **3.5 The measurement of innovation performance**

We hold that innovation performance does not only include technical innovation performance, but also management innovation. The essence of innovation is an insight into the market changes and business opportunities and the integration of products, technology, manufacture, marketing, which can bring the enterprises competitive advantages and business profit. We have designed the measurement of innovation performance based on the existing research on innovation [10,11]. Specifically, the innovation performance is categorized as technical innovation performance and management performance. Technical innovation performance refers to the innovation performance of products, manufacturing process and equipment. The management innovation performance refers to the innovation performance of organization planning, management methods, resource allocation and business models.

## 4 Results and managerial implications

### 4.1 Results

This research has used quantitative methods with large samples to verify the relationships between flexible human resource management, organizational learning capability and innovation performance. Through a series of regression analysis, we verify that the flexible human resource management and organizational learning capability have positive effect on innovation performance. Organizational learning capability plays an intermediary role between flexible human resource management and innovation performance. The specific relationships are as follows:

**(1) Functional flexibility and behavior flexibility have obvious positive effect on organizational learning capability. Extended skill flexibility has negative effect on organizational learning capability.**

By adopting functional flexibility strategy (e.g. work design participation, job rotation, trans-department teams, etc.) and extended skill flexibility strategy (e.g. training, flexible employment, mentoring program, etc.), employees normally should be actively involved in the whole process of knowledge absorbing, conveying and integration. The organizational learning capability will be aligned with organizational goals. However, contrary to the hypothesis, the extended skill flexibility is not beneficial to the improvement of the organizational learning capability. The reason may be: when hiring part-time staff, external staff or professional consultants, core internal workers may feel it pose a threat to their feeling of security in the organization. This will leads to a falling of the psychological contract and worse relationship between the employee and the employers. This potential atmosphere changes may influence employee's learning motivation and effects.

**(2) Organizational learning capability has obvious positive effect on the innovation performance**

In the structural model equation, the standardized path coefficient between organizational learning capability and innovation performance is 0.16, which is significant in the 0.01 level and indicates that the organizational learning capability can predict the innovation performance. The enterprise can develop its core competence through organizational learning to promote the knowledge acquisition, storage and innovation. Furthermore enterprises can improve management innovation ability through inter-organizational learning that brings in advanced management method as their own management expertise.

**(3) In terms of flexible human resource management, the functional flexibility, extended skill flexibility and behavior flexibility have positive effects on innovation performance.**

Through the functional flexible strategies such as job rotation and across teamwork, the staff has opportunities to develop multiple skills. This is helpful to consolidate core knowledge and transforms into human capital. Through the extended skill flexible strategies such as training, social mentor or external recruitment, it helps staff raise learning ability, achieve their goals and values as well as to improve readiness for innovation. Through behavior flexible strategies such as flexible working time,

rational authorization and salary motivation, it is helpful to enhance the staff's behavior freedom and diversities, rouse their initiative and improve the management level and overall performance significantly.

**(4) The analysis of the mediating effect of the organizational learning capability between the flexible human resource management and innovation performance**

From the structural equation analysis, we find that the organizational learning capability plays an intermediary role between flexible human resource management and innovation performance. The enterprise is able to influence the staff's motivation and attitude by using flexible human resource strategies, Which will help to provide management support for organizational learning and improve the whole innovation performance.

## **4.2 Management implications**

By regarding organizational learning capability as the intermediary of flexible human resource management and innovation performance, we verify the importance of flexible human resource management on innovation performance and the mediating effect of organizational learning capability. The conclusion of this research provides guidance for human resource management and the enhancement of innovation capability.

**(1) "Couple hardness with softness" in management**

Flexible human resource management should be combined with rigid management properly. Although the flexible human resource management provides good elasticity, it demands higher level of management. In most cases, it depends on a mature human resource system to acquire the compatible mechanisms and appropriate environment, which is essential to maximize the effect of flexible human resource management.

**(2) Apply flexible motivation in organizational learning**

Flexible human resource management has a long-term feature because it aims to meet the employees' demands for future development. On one hand, the leader should highly appreciate the need of flexible human resource management. On the other hand, it requires the enterprises to pay attention to the employees' psychological needs and motivate employees through specific flexible strategies, in order to transform organization goal to the employees' spontaneous behaviors. The flexible motivation is very beneficial to individual and organizational learning. For example, in performance improvement, the flexible improvement plan, such as performance communication, performance feedback and flexible training programs, can make up the deficiency of employees. Learning capability of employee should be an important target of the performance improvement. It is necessary to push the staff to enhance their learning capability, especially of learning from the mistakes and experiences, and to lead the staff to the way that is helpful to the development of the enterprise. Again for instance, through tuning the proportion of internal and external payment, more attention can be paid to the motivation of employees' personality developments and value realization by internal payment.

**(3) Identify both enterprise' characteristics and its environment**

Both the flexible management and rigid management have their pros and cons. In the practice of flexible human resource management, the enterprise needs to determine appropriate flexible strategies according to its characteristics, stage of development, external environment and development objectives. Especially, since most of the related theories of our present flexible human resource management come from western countries, the enterprises in China should consider the differences with the context of theories and the implication environment.

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