

Research on Employee Innovation Behavior Based on JD-R Model: Taking Well-Being as the Mediating Variable

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Keywords: JD-R, Innovation behavior, Job well-being

Abstract: This study explores employee innovation behavior from the perspective of job well-being. Based on resource conservation theory, creativity theory and positive emotion extension-construction theory, a theoretical model of job demand-resources, job well-being and innovation behavior was constructed. Smart PLS2.0 and SPSS23.0 were used for empirical tests. The results show that skill extension and job well-being positively affect innovation behavior. Skill extension, job autonomy and colleague support have positive effects on job well-being. Job well-being partially mediates the relationship between skill extension and innovation behavior, and fully mediates the relationship between job autonomy, colleague support and innovation behavior. Through the analysis framework of job demand-resource model, and taking job well-being as the mediating variable, the factors influencing employee innovation behavior are improved.

1. Introduction

As a dynamic capability and competitive advantage, innovation provides power for the sustainable development of enterprises. Among the elements of enterprise innovation and development, employees are the most basic, active and potential resources. In essence, the generation of innovative behavior, on the one hand, needs individual internal stimulation. With the research of positive psychology, job well-being has always been the focus of organizational behavior, and this positive emotion can become the motivation to stimulate employees' innovation behavior. On the other hand, it is inseparable from the application of external factors, that is, the application of work characteristics. What kind of work requirements are required by the strategic goal of the enterprise and what kind of work support resources can be provided to the employees play an important role in the innovation behavior.

However, it is a pity that few studies integrate the two internal and external factors of individual emotion and work characteristics to explore the mechanism of innovation behavior. This paper integrates the internal and external factors that influence the innovation behavior, and discusses the influencing factors of employee innovation behavior under the job demand-resource model from the perspective of job well-being, so as to provide theoretical support for enterprises to improve employee innovation behavior.

2. Literature Review and Hypotheses

2.1 JD-R and Innovation Behavior

Demerouti et al. [1] believed that any job characteristics can be divided into job requirements and job resources. The former refers to the physical, psychological, social and organizational requirements of the individual, which require the individual to make efforts to complete the task. The latter is a factor that can promote the achievement of work goals and personal growth. Bakker et al.[2] found that job autonomy, social support and good interaction between leaders and members would not cause high level burnout. Skill Extension (SE) is the ability of an employee to quickly

master new knowledge and technology. As a kind of job skill requirement, the essence of skill extension is to enable employees to continuously meet new work tasks and higher-level job requirements through learning knowledge and skills [3]. Creativity Theory [4] believes that employees' creativity level is closely related to their skills and knowledge in a certain field, and the application of knowledge and skills can provide employees with solutions to problems. Employees with strong skills extension are more likely to master more skills and knowledge and combine different disciplines to produce innovative thinking. According to Amabile's three-factor theory of creativity [5], the factors that produce innovative behavior at the individual level include task motivation, professional-related skills, and innovation-related skills. Resource conservation theory holds that individuals have the tendency to conserve, protect and acquire resources. When employees have more work resources, they will protect existing resources and acquire new resources through resource investment, which can effectively predict employee innovation behavior. Job Autonomy (JA) refers to the scope of autonomous decision of employees in the process of work. When the degree of Job Autonomy is higher, employees will have more opportunities to deal with work by themselves, choose more efficient and effective work procedures, have more work experience, have more creative thinking, and tend to produce innovative behaviors. Dai Chunlin et al. [6] pointed out that colleague support refers to the support and assistance provided by employees with the same status and level in the same work unit in terms of emotion, tools and information. After employee creativity is generated, colleague support can provide support resources for the further generation of innovative behavior. Therefore, the following hypothesis is proposed:

- H1a: Skill extension positively affects innovation behavior;
- H1b: Job autonomy has a positive impact on innovation behavior;
- H1c: Colleague support has a positive impact on innovation behavior.

2.2 JD-R and Job Well-Being

Warr [7] first proposed the concept of job well-being (JWB), believing that job well-being refers to employees' positive evaluation of various aspects in the workplace. The current research on job well-being can be divided into three directions: subjective happiness, psychological happiness and comprehensive happiness. Diener [8] believed that subjective well-being refers to an individual's overall cognitive evaluation and emotional experience based on his own understanding. The research on psychological well-being is based on the perspective of self-development, and it is believed that employees' psychological needs of competence, autonomy and relationship should be satisfied to realize the improvement of their personal value and happiness. Comprehensive job well-being is defined as the overall quality evaluation of employees' performance and experience at work [9]. By making employees constantly challenge and complete new tasks, the job requirements can bring practical rewards to employees and stimulate their positive emotions. Employees are willing to invest more energy to cope with such requirements. Therefore, skill extension can improve their job well-being. When employees have strong job autonomy, they will have great interest in the work they are engaged in and complete the work objectives according to their own work procedures. Su Tao et al. [10] found that job autonomy significantly promoted employee happiness. On the one hand, colleague support can create a good working atmosphere, enhance team cohesion, improve the enthusiasm and confidence of employees; On the other hand, it satisfies the psychological needs of employees and improves the intrinsic motivation of behaviors, provides more resource support for employees, buffers part of the work pressure and promotes the generation of positive emotions. Therefore, the following hypothesis is proposed:

- H2a: Skill extension positively affects job well-being;
- H2b: Job autonomy has a positive impact on job well-being;
- H2c: Colleague support has a positive impact on job well-being s.

2.3 The Mediating Role of Job Well-Being

On the one hand, according to the previous research, job demand-resources have a significant positive impact on job well-being. On the other hand, innovation behavior includes the generation

of innovative ideas, search for supporting resources and implementation of innovative programs [11]. According to the expansion-construction theory of positive emotions, positive emotions can make employees' thinking more active and creative, and also help employees build long-term and lasting personal resources, providing the foundation for innovation. Anderson et al. [12] believed that the generation of employees' innovative behavior should focus on employees' situational factors perception and the emotional state stimulated. Fredrickson et al. [13] found that positive emotions can expand the cognitive range of employees, make them think in a more positive way and solve problems in a more flexible way, which is conducive to stimulating the innovation potential of employees. Employees with higher job well-being are more willing to take the initiative to accept new knowledge and new things, and are more likely to obtain all kinds of supportive resources [14]. New ideas have great risks in the process of concrete practice. Positive emotions can provide psychological support for employees and relieve various pressures faced by employees in the process of innovation [15]. Therefore, the hypothesis is proposed:

H3a: Job well-being has a significant positive impact on innovation behavior;

H3b: Job well-being mediates the relationship between skill extension and innovation behavior;

H3c: Job well-being mediates the relationship between job autonomy and innovation behavior;

H3d: Job well-being mediates the relationship between colleague support and innovation behavior.

3. Methods

3.1 Sample and Data

This study takes employees in IT industry as the research object and adopts online combination to conduct questionnaire survey. A total of 114 valid questionnaires were collected, including 18 measurement items. The questionnaire was Likert five-point scale, ranging from “very inconsistent (1)” to “very consistent (5)”. Referring to the scale of job requirements-resource Model adapted by Fang Wei [16]. According to the job well-being scale compiled by Huang Liang [17], there are 4 items in total. The innovation behavior scale developed by Scott et al. includes 5 items [11].

3.2 Result

3.2.1 Common Method Biases

Herman single factor test was used, and the explanatory variance of the first factor was 33.473%, and the cumulative explanatory quantity was 64.877%. There was no common method bias. $VIF_{max}=2.604 < 10$, indicating that there is no multicollinearity problem between variables.

3.2.2 Reliability and Validity Test

The overall Cronbach's α of the model is 0.872, and the lowest Cronbach's α is 0.645 > 0.6 , which meets the standard. The load coefficients of the cross factors were 0.666-0.846, all greater than 0.6, and the coefficient values of the measurement variables were higher than those of other measurement variables, indicating that the model had good internal consistency and differentiation. The lowest AVE value is 0.575 > 0.5 , indicating strong validity of the variable. CR is higher than 0.8, which meets the standard, indicating that the model is reliable. The R^2 values of this model are all greater than 0.4, indicating that the model has good predictive power.

Table 1 Overview of Measurement Model.

Constructs	Cronbach's Alpha	AVE	CR	R^2
Skill Extension	0.645	0.575	0.802	
Job autonomy	0.660	0.592	0.812	
Colleague support	0.751	0.667	0.857	
Job well-being	0.810	0.637	0.875	0.431
Innovation behavior	0.820	0.583	0.874	0.474

3.2.3 Structural Model Test

Table 2 Normalized Path Coefficients for Direct Action

Path	Path coefficient	Bootstrapping 95% BCa Confidence Interval		Result
		LLCR	ULCR	
SE->IB	0.274***	0.138	0.468	Positive effect
JA->IB	0.08 ^{ns}	-0.121	0.345	ns
CS->IB	0.108 ^{ns}	-0.035	0.261	ns
SE->JWB	0.275***	0.130	0.479	Positive effect
JA->JWB	0.243***	0.108	0.417	Positive effect
CS->JWB	0.423***	0.289	0.586	Positive effect
JWB->IB	0.427***	0.170	0.651	Positive effect

Note: ns means not significant, * $p < .05$, ** $p < .01$, *** $p < .001$

Main effect test: skill extension has a significant positive impact on innovation behavior and job well-being; Job autonomy and colleague support have a significant positive impact on job well-being; it is assumed that H1a, H2a, H2b, H2c and H3a are valid.

Table 3 Normalized Path Coefficients for Indirect Effects.

Path	Path coefficient	Bootstrapping 95% BCa Confidence Interval		Result
		LLCR	ULCR	
SE->JWB->IB	0.117***	0.026	0.233	Positive effect
JA->JWB->IB	0.104***	0.021	0.209	Positive effect
CS->JWB->IB	0.181***	0.064	0.295	Positive effect

Note: ns means not significant, * $p < .05$, ** $p < .01$, *** $p < .001$

The mediating role of job well-being. The relationship between skill extension and innovation behavior was partially mediated by job well-being. Job well-being completely mediated the relationship between job autonomy and innovation behavior. Similarly, job well-being also plays a completely mediating role between colleague support and innovation behavior. Hypothesis 3b, 3c and 3d are all true.

4. Discussion and Conclusion

Skill extension and job happiness positively affect innovation behavior; Skill extension, job autonomy and colleague support have positive effects on job well-being. Job well-being partially mediates the relationship between skill extension and innovation behavior, and fully mediates the relationship between job autonomy, colleague support and innovation behavior.

First, enterprises should increase investment in key human capital, provide all kinds of support resources, improve the innovative quality and skills of employees, accumulate human resources and technology to create competitive advantages and meet all kinds of new content requirements in work. Dare to accept the risks of innovation, and do a good job of pre-assessment, give employees the appropriate opportunity to make mistakes, stimulate more innovative behavior. Second, strengthen the challenge of the work content, stimulate the inner motivation of learning and innovation of employees, create appropriate work crisis, urge employees to constantly challenge the new work content, invigorate the behavior motivation system of employees. Third, on the one hand, give employees more autonomy, so that employees fully perceive the realization of their own value; On the other hand, creating a good and orderly organizational atmosphere is not only convenient to carry out work, but also conducive to knowledge sharing within the organization.

5. Acknowledgment

This study was supported by the National Social Science Foundation of China [Grant Numbers 19BSH120], the Major Projects of Philosophy and Social Sciences of Hubei Education Department [Grant Numbers 18D017].

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