

# Study on the Mechanism of Cross-level Influence of Leadership Innovation Behavior on Employees Innovation Behavior

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## ABSTRACT

This paper selects key constructs such as leader innovation behavior, innovation subjective norm, leader-member exchange relationship, and employee innovation behavior, and deeply excavates innovation subjective norm and leader-member exchange relationship as mediating and moderating variables, respectively, in the relationship between leader innovation behavior and employee innovation. Mediating and moderating effects between behaviors. Through the questionnaire survey and empirical test, the following conclusions are drawn: the leadership innovation behavior at the team level has a top-down "trickle-down effect" on the employee innovation behavior at the individual level; the two dimensions of innovation subjective norm, innovation imperative norm and innovation description Sexual norms play a mediating role between the two; leader-member exchange relationship plays a moderating role between leader innovation behavior and employee innovation behavior, that is, compared with low-quality leader-member exchange relationship, in high-quality leadership -In the member exchange relationship, the positive effect of leadership innovation behavior on employee innovation behavior is more significant.

**Keywords:** Leadership Innovative Behavior, Directive Norms, Descriptive Norms, Leader-Member Exchange Relationship, Employee Innovative Behavior

## 1. INTRODUCTION

The current global industrial transfer is accelerating, trade frictions between China and the U.S. are ongoing, and uncertainties in the world economy are increasing. The national level is actively strengthening science and technology innovation and accelerating the pace of innovation for all. As the main force of social innovation, Enterprises actively respond to the national innovation strategy while becoming more and more aware of the importance of "innovation-driven development". Employees at the micro-level are the bearers of organizational innovation and the core elements for enterprises to gain a competitive advantage. Therefore, how to promote employees' innovative behavior has become the key to enterprise development and the focus of social discussion.

Many classic cases of successful corporate innovation at home and abroad also warrant a fresh look at the

positive impact of leaders' innovative behaviors. These typical cases of leaders' innovative behaviors further stimulate us to think about whether leaders' innovative behaviors have an impact on employees' innovative behaviors in the process of enterprise development and growth; what is the path of action between the two; and whether there are important contextual variables that can moderate the effect of the influence between the two.

Among the many factors that stimulate employees' innovative behavior, the leadership factor cannot be ignored. According to social learning theory, human behavior is learned through observation<sup>[1]</sup>. In organizational situations, leaders in higher positions are the main objects for employees to observe and learn, and the positive behaviors shown by leaders can't be ignored. When leaders show more innovative behaviors in their work, employees perceive that the leaders advocate the behaviors and further observe, learn, and imitate them. Therefore, exploring the cross-level influence

mechanism of leadership innovation behavior on employees' innovation behavior at the team level is helpful to interpret employees' innovation behavior from a more macro perspective on the one hand, and to facilitate enterprises to take practical management measures to improve employees' innovation behavior from the "leader-employee" dichotomy on the other hand.

As a member of an organization, employees are influenced by the behaviors and attitudes of significant others in the group or the majority of the group, which in turn generates psychological pressure that can affect their behavior, a pressure perception known as subjective norms. However, there is no consensus on the mechanisms through which leadership behaviors influence employees' innovative behaviors, and in particular, there is no awareness that subjective norms may be a more direct cause of employees' innovative behaviors. Therefore, it is necessary to investigate subjective norms of innovation as a mediating variable in the path of influence of leadership innovation behavior on employees' innovation behavior.

In addition, the environment of organizational management is complex and changeable, and many contextual variables can influence the relationship between leadership innovation behavior and employee innovation behavior. According to the leadership-member exchange theory, the leadership-member exchange relationship is an important channel for upward and downward interactions<sup>[2]</sup> The leadership-member exchange relationship is an important channel for upward and downward interactions. At the same time, the quality of the leader-member exchange relationship can directly affect the ease of employees' access to innovation resources from the leader, thus having an important impact on the overall innovation process. Therefore, it is necessary to explore in-depth the moderating role of the leader-member exchange relationship as an important situational variable between leaders' innovative behavior and employees' innovative behavior.

In summary, this paper explores the top-down "trickle-down effect" of leadership innovation behavior on employee innovation behavior across levels based on the Chinese cultural context, selecting leadership innovation behavior as a team-level variable. It also explores the mediating and moderating effects of the subjective norm of employee innovation as a mediating variable and the leader-member exchange relationship as a moderating variable between the two. This study aims to explore the cross-level influence mechanism of leadership innovation behavior on employees' innovation behavior and to enrich and expand the related theoretical research.

## **2.LITERATURE REVIEW AND RESEARCH HYPOTHESIS**

### ***2.1. Innovation Behavior and Employee Innovation Behavior***

According to social learning theory, most human behavior is acquired through observational learning<sup>[1]</sup>. Leadership research further suggests that vicarious learning through observation of leader behavior plays a critical role in shaping employee behavior<sup>[3]</sup>. According to the "trickle-down effect", leaders' perceptions, attitudes, and behaviors have a top-down effect on employees' perceptions, attitudes, and behaviors<sup>[4]</sup>. Existing research confirms this view: Tepper<sup>[5]</sup> et al. show that leaders' organizational citizenship behaviors have a "trickle-down effect" on employees' demonstrated organizational citizenship behaviors. Dai Yun<sup>[6]</sup> (2001) found that leaders' change commitment significantly influences employees' change commitment through reward expectations and risk perceptions and that there is a "trickle-down effect". Specifically, in the context of this paper, it argued that leaders' innovative behaviors trickle down to employees.

Accordingly, the following hypothesis is formulated.

H1: Leadership innovation behavior positively influences employee innovation behavior.

### ***2.2 Innovation subjective norms and employee innovation behavior***

According to the theory of planned behavior, an individual's behavioral attitude, subjective norm, and behavioral control have an impact on individual behavior through individual behavioral willingness. The greater the possibility of individual behavior<sup>[8]</sup>. This theory has been proved to be effective in studying the generation and change of individual behaviors<sup>[9]</sup>. In the context of this paper, subjective norm, as an important explanatory variable in the theory of planned behavior, can positively promote the innovative behavior of employees.

On the one hand, in response to the fierce market competition and line with the national development strategy, enterprises regulate the behavior of employees by formulating a series of rules and regulations (such as performance appraisal). These rules and regulations restrain employees, guide their behavior, and maximize organizational effectiveness<sup>[7]</sup>. Therefore, innovative directive norms have a facilitating effect on employees' innovative behaviors.

On the other hand, in a given organizational situation, individuals often actively seek descriptive norms to guide their behavior<sup>[8]</sup>. The fact that leaders or colleagues around them are actively engaged in innovation activities also makes employees actively imitate and copy the behavior of their leaders or colleagues. At the same time,

the norms create a strong innovation climate in the organization, and the demonstration effect of successful innovation by leaders and colleagues around them will trigger employees' innovative behavior through their innovation self-efficacy<sup>[9]</sup>.

Accordingly, the following hypothesis is formulated.

H2a: Employee innovation directive norms positively influence employee innovation behavior.

H2b: Descriptive norms of employee innovation positively influence employee innovation behavior.

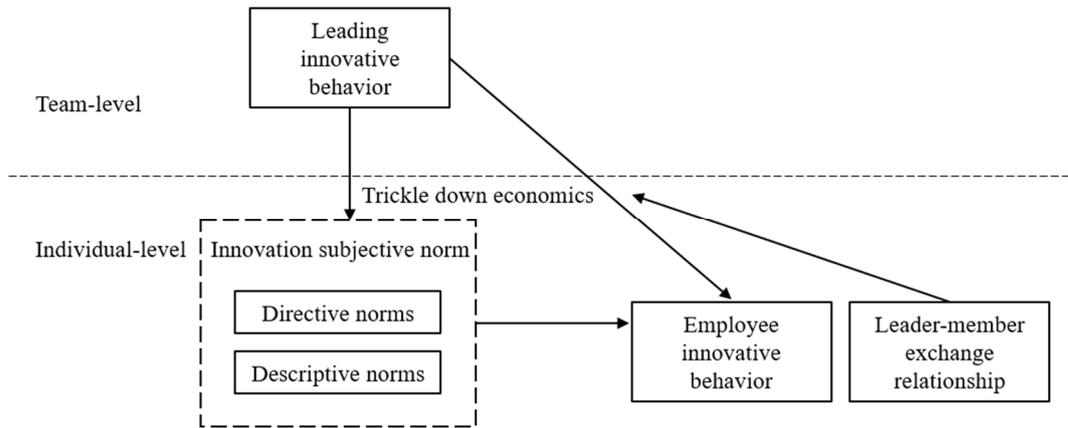


Figure 1. Theoretical model

Leadership role models have a significant impact on employees' descriptive norms of innovation, and employees form their cognitive assessments while observing the innovative behavior of role models. When leaders frequently demonstrate innovative behaviors and set a positive example of innovation, employees are motivated by an internal sense of urgency to "learn from the leader who is innovating", which positively influences employees' innovation descriptors.

Accordingly, the following hypothesis is formulated.

H3a: Leadership innovation behavior positively influences innovation directive norms.

H3b: Leadership innovation behavior positively influences innovation descriptive norms.

Combining the above hypotheses on the two-two logical relationships between leadership innovation behavior and employee innovation behavior, innovation subjective norms and employee innovation behavior, and leadership innovation behavior and innovation subjective norms, it is reasoned that leadership innovation behavior will indirectly act on employee innovation behavior through the mediation mechanism of innovation subjective norms.

Accordingly, the following hypothesis is formulated.

H4a: Innovation directive norms play a mediating role between the innovative behavior of leaders and the

### 2.3. Mediating effects of subjective norms of innovation

The traditional Chinese Confucian culture is deeply rooted, which makes the distance between leaders and employees in Chinese enterprises stronger<sup>[10]</sup>. The employees tend to respect the leadership and obey the authority. Therefore, forced by the authority of the leader, employees see this as their job and unconditionally obey the leadership behavior, which in turn promotes innovative directive norms.

innovative behavior of employees.

H4b: Descriptive norms of innovation play a mediating role between leaders' innovative behaviors and employees' innovative behaviors.

### 2.4. The moderating role of the leader-member exchange relationship

According to the leadership-member exchange theory, high-quality leadership-member exchange relationships have a significant positive effect on improving leadership effectiveness and organizational performance<sup>[11]</sup>. Second, based on the reciprocity principle of social exchange theory, when leaders establish a high-quality leader-member exchange relationship with employees, employees respond more positively and quickly to innovative behaviors exhibited by leaders out of a rewarding mentality.

Accordingly, the following hypothesis is formulated.

H5: Leader-member exchange relationship positively moderates the relationship between leader innovative behavior and employee innovative behavior.

Based on the above research hypotheses, the theoretical model of this study is shown in Figure 1.

### 3. RESEARCH METHODS

#### 3.1 Scale design

The scales for both leadership innovation behavior and employee innovation behavior were selected from Liu, Yun and Shi, Jintao (2009)<sup>[12]</sup> et al.'s study, with a total of 10 of one question item. The subjective norms of innovation were measured using the scales of innovation subjective norms were selected 6 from the study of Ajzen<sup>[13]</sup>. The scale of the leader-member exchange relationship was selected from Jiang Jing and Yang Baiyin (2014)<sup>[14]</sup> In the study, a total of 7 one items were selected.

In terms of the selection of control variables, given that individual innovation behavior may be influenced by demographic background statistics, and based on previous studies<sup>[15]</sup>. This paper selects five characteristic terms mainly involving gender, age, education, years of working experience, and team size.

#### 3.2 Data Acquisition

This paper mainly selects high-tech enterprises as the research organization and adopts the online survey method to survey the R&D personnel and organization managers within the enterprises. After eliminating the invalid questionnaires such as missing and similar, 407 valid questionnaires were collected, including 86 questionnaires from leaders and 321 questionnaires from employees.

### 4. DATA ANALYSIS AND RESULTS

#### 4.1. Data quality analysis

The variables of leadership innovation behavior ( $\alpha=0.940$ , CR=0.94), employee innovation behavior ( $\alpha=0.912$ , CR=0.92), directive norm ( $\alpha=0.790$ , CR=0.78), descriptive norm ( $\alpha=0.868$ , CR=0.87), the  $\alpha$  values of the leader-member exchange relationship ( $\alpha=0.897$ , CR=0.90) are all between 0.780–0.940 ( $>0.7$ ), and the CR values are all between 0.790–0.940 ( $>0.6$ ), indicating that there is a higher Internal consistency and combined reliability. The AVE values of each variable ranged from 0.561 to 0.759 ( $>0.5$ ), indicating good convergent validity. The employee measurement scale  $\chi^2/df$  is 2.338, RMSEA is 0.065, the leadership measurement scale  $\chi^2/df$  is 1.012, RMSEA is 0.012, GFI, AGFI, NFI, TLI, IFI, CFI all reach the standard of 0.9 or more, so the model is considered to have a good fit.

#### 4.2. Correlation Analysis

There was a significant positive correlation between directive norms and employees' innovative behavior ( $r=0.534$ ,  $p<0.01$ ) and descriptive norms and employees'

innovative behavior ( $r=0.593$ ,  $p<0.01$ ), indicating a good correlation between the variables and laying the foundation for the subsequent test.

#### 4.3. Hypothesis testing

##### 4.3.1 Testing the direct effect of leadership innovation behavior on employee innovation behavior

As can be seen from Table 2: M 6 is the addition of the team level variable leadership innovation behavior to M5. The newly added variable has a significant effect on employee innovation behavior. Thus, it can be seen that leadership innovation behavior has a significant positive effect on employee innovation behavior ( $\gamma = 0.222$ ,  $p < 0.001$ ), and H1 is verified.

##### 4.3.2. Testing the direct effect of innovation subjective norms on employees' innovative behavior

As can be seen from the Table 1: M 7 is added to M5 with employee-level variables directive norms, descriptive norms, directive norms have a significant effect on employee innovative behavior ( $\gamma = 0.232$ ,  $p < 0.001$ ) and H2a is verified; descriptive norms have a significant effect on employee innovative behavior ( $\gamma = 0.407$ ,  $p < 0.001$ ) and H2b is verified.

##### 4.3.3 A test of the mediating effect of subjective norms of innovation

As can be seen from Tables 1: M2 is added to M1 with the team-level variable leadership innovative behavior, and leadership innovative behavior has a significant positive effect on directive norms ( $\gamma=0.224$ ,  $p<0.001$ ), which is verified by H3a. M4 is added to M3 with the team-level variable leadership innovative behavior, and a significant positive effect of leadership innovative behavior on innovative descriptive norms is obtained ( $\gamma=0.127$ ,  $p < 0.001$ ), and H3b was verified.

As can be seen from Table 1: the team level variable leadership innovation behavior is added to M6. The newly added variable has a significant effect on employee innovation behavior. Combining the regression coefficients shows that leadership innovation behavior has a significant positive effect on employee innovation behavior ( $\gamma=0.222$ ,  $p<0.001$ ). m8 is the addition of mediating variables directive norms and descriptive norms to M6. The results show that directive norms have a significant positive effect on employee innovative behavior ( $\gamma=0.232$ ,  $p<0.001$ ) and descriptive norms have a significant positive effect on employee innovative behavior ( $\gamma=0.408$ ,  $p<0.001$ ), which satisfy the mediating condition and indicate that the mediator exists, and H4a and H4b are verified.

**Table 1.** Analysis of direct effect and intermediary effect

Variables	Intermediate variables				Dependent variable			
	Directive specifications		Descriptive specifications		Employee Innovation Behavior			
	M1	M2	M3	M4	M5	M6	M7	M8
<b>Control variables</b>								
<b>1</b>								
Gender	-0.149	-0.149	-0.021	-0.021	-0.081	-0.081	-0.036	-0.036
Age	0.171*	0.171*	0.067	0.067	0.041	0.041	-0.018	-0.018
Academic qualifications	-0.165	-0.165	-0.084	-0.084	-0.11	-0.11	-0.051	-0.051
Years of work	-0.148*	-0.148*	-0.086	-0.086	-0.046	-0.046	0.002	0.002
<b>Mediating variables</b>								
Directive specifications							0.232***	0.232***
Descriptive specifications							0.407***	0.408***
<b>Control variables</b>								
<b>2</b>								
Team Size	0.125	0.115	0.044	0.05	0.038	0.034	0.035	0.037
<b>Independent variables</b>								
Leading innovative behavior		0.224***		0.127***		0.222***		0.170**
<b>Statistical changes</b>								
R (Sigma squared)	0.582	0.582	0.429	0.429	0.319	0.319	0.174	0.174
U(Tau)	0.248	0.152	0.114	0.086	0.236	0.139	0.271	0.138
Chi-square	207.507**	207.199**	158.968**	158.804**	305.319**	304.609*	526.735**	527.990**
	*	*	*	*	*	**	*	*
Deviance	838.13	842.521	722.546	727.578	680.674	685.52	583.103	588.057

**Note: 1.** The regression coefficient is unstandardized regression coefficient; 2. \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.

**4.3.4 Moderating effects of leader-member exchange relationships**

As can be seen from Table2 M6 is added to M5 the

moderating variable leader-member exchange relationship, and the analysis shows that the interaction term significantly affects employee innovation behavior ( $\gamma=0.188, p<0.05$ ), so H5 is verified.

**Table 2.** Analysis of the moderating effect of leader-member exchange relationship

Variables	Dependent variable	
	Employee Innovation Behavior	
	M5	M6
<b>Control variables 1</b>		
Gender	-0.081	-0.081
Age	0.041	0.041
Academic qualifications	0.11	-0.11
Leader-member exchange relationship	0.280***	0.272***
<b>Control variables 2</b>		
Team Size	-0.028	-0.034
<b>Independent variables</b>		
Leading innovative behavior	0.222***	0.203**
<b>Interactions terms</b>		
Leading innovative behavior × leader-member exchange relationship		0.188*
<b>Statistical changes</b>		
R (Sigma squared)	0.32	0.316
U(Tau)	0.071	0.041
Chi-square	178.658***	125.048***
Deviance	583.109	583.478

Note: 1. The regression coefficient is unstandardized regression coefficient; 2. \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.

**5.CONCLUSIONS**

(1) The main purpose of this research article is to explore the mechanism of the role of team-level leadership innovation behavior on individual-level employee innovation behavior across levels. The theoretical model of the article is constructed based on theoretical deduction, and the findings of this paper are drawn through the method of empirical research. (2) The direct effect of leaders' innovative behavior on employees' innovative behavior. It reveals the importance of exemplary leadership, innovative behavior, and employees' observational learning, and that leadership factors play an important role in promoting employees' innovative behavior. The path of the role of innovation subjective norms between leadership innovative behavior and employee innovative behavior. This finding opens the "black box" of the role of leadership innovation behaviors on employee innovation behaviors, thus suggesting that the "bonding" role of innovation subjective norms cannot be ignored in China, where the power distance is high. (3) The moderating role of the leadership-member exchange relationship between leadership innovation behavior and employee innovation behavior. The positive influence of leadership innovation behavior on employees' innovation behavior is better in a high-quality leadership-member exchange relationship. Therefore, companies must establish innovation-oriented

high-quality leadership-member exchange relationships and open up channels of interaction between the top and bottom levels.

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