

# Research on the Relationship between Relational Capital, Knowledge Sharing and Employees' Innovation Behavior

Zhang Huiqin, Hou Yanjun, and Xu Qi

**Abstract**—Individual innovation is the foundation of enterprise innovation, and how to stimulate employees' innovation behavior is an important issue for the enterprises in the era of knowledge economy. Previous studies have shown that employees' innovation behavior is closely related to their own relational capital. So, based on the perspective of relational capital, this paper introduces the knowledge sharing as a mediating variable, and then discusses the influence mechanism of relational capital on employees' innovation behavior. The empirical results show relational capital and its three dimensions that are organizational identification, trust and norm of reciprocity have a positive effect on employees' innovation behavior, and the role is mediated by knowledge sharing and indirectly acts on employee innovation behavior. Based on this analysis, the research provides the corresponding countermeasures and suggestions for enterprises to promote employees' innovation behavior from the perspective of relational capital.

**Index Terms**—Relational capital, employees' innovation behavior, knowledge sharing, high-tech enterprises.

## I. INTRODUCTION

Innovation is the key to the sustainable competitiveness of enterprises, which is crucial for its development of enterprises. Employees' innovation behavior is the support and implementer of enterprise innovation, so how to stimulate the innovation behavior of employees becomes an important issue for the managers of the enterprise. The emergence of employees' innovation behavior is largely determined by the factors of employees themselves, especially the stock and channels of external resources acquired by individuals. In order to improve their own innovation performance, employees are often in a certain social network structure to obtain the resources which needed in innovative practices from partners or organizations in order to improve their own innovation performance [1]. While the real or potential resource embedded in the complex network is social capital [2]. Relational capital is one of the significant dimensions of social capital, which refers that organizations

or individuals interact with each other through the interaction of network structure, and establish mutual trust and abide by certain behavioral norms in order to maintain long-term cooperative relationship. Such an intangible capital plays a significant role in breaking down information barriers, promoting information circulation and sharing resource.

## II. BACKGROUND

### A. Relational Capital

Relational capital is a sociological concept, originally derived from Pierre Bourdieu's description about social capital. He argued that the relational social capital constituted part of social capital is juxtaposed with structural capital and cognitive capital, a part of social capital [3]. After that, scholars have studied it that gradually becomes the focus of research in the field of economics, management and sociology. As the subdivision dimension of social capital, researches on relational capital have attracted scholars' concern, and form different definitions. A Blonska, Storey C, *et al.* (2013) argued that relational capital was a cooperation relational of mutual trust, benefit, and emotional identity [4]; Nahapiet *et al.* defined relational capital as intangible actual or potential assets embedded in interpersonal relationships, which was formed by interactions among partners over time [5]. Zuo Wenming *et al.* (2014) studied the relationship between online word-of-mouth and willingness to buy in a social business environment, in which the relational capital are divided into trust, reciprocity and community recognition [6]; Zhou *et al.* (2017) researched the behavior mechanism of knowledge paying users, and divided the relational capital into identity and trust in this paper [7]. Accordingly, based on the definition of the relational capital by A Blonska and Zuo Wenming and combined with research contents of this paper, we define relational capital as employees' organizational identification as well as interpersonal relationships of mutual trust in the long-term communicative interaction, including organizational identification, trust and norm of reciprocity.

### B. Employees' Innovation Behavior

The definition of employees' innovation behavior has been extensively studied by the academic circle. It mainly includes the process and result perspective. For example, Kleysen believed the creation of innovative behavior is a process needs to go through five stages, innovative behavior is formed only five stages been experienced [8]; In addition, Moultrie and Young argued that innovation behavior is truly formed only when it is applied to the practice [9]; Zhang Huiqin *et al.* (2016) defined innovative behavior as the generation and

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implementation of ideas [10]. Based on the definition of employees' innovation behavior, this paper argues that employees' innovative behavior refers to the creation of innovative ideas and the implementation of innovative behavior

In addition, the existing research of employees' innovation behavior has been a research focus in the field of employee behavior, and mainly conducted from the individual, team and organizational level. Some scholars from the social capital and human capital (P Akhavan, SM Hosseini, 2016 [11]) perspectives investigated the production of employees' innovation behavior, but lacking of concrete study of the process of employees' innovation behavior from the network structure and its mutual relationship perspective. Therefore, we wonder that whether relational capital is related to employees' innovation behavior.

### III. THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESES

#### A. *Relational Capital and Employees' Innovation Behavior*

Organizational identification is a psychological tendency, which is regarded as the emotional link between employees and organizations. Vernon D. Allen *et al.* defined organizational identity as the similarity between employees and organizations in values, etc. This awareness can be used to identify organizational interests as the basis for their own strategic goals and guidelines [12]. Meanwhile, high organizational commitment awareness of employees often has a strong sense of responsibility for the development of organization. They think that the development of the organization is closely related to themselves, and making their behaviors close to the goal of enterprise. Tang, CY *et al.* (2016) conducted a matching survey of 383 researchers and their supervisors in China, they found team identification and professional identity are positively influenced radical and progressive innovations [13]. Through the above analysis, the research believes that organizational identification has a positive predictive effect on employees' innovation behavior.

(2) Trust is a psychological attitude that individuals expose their weaknesses to each other without the fear of damaging interests [14]. In the organization, the role of trust in the innovation behavior of employees is mainly reflected in three aspects. 1) To reduce transaction costs which can effectively break down the information barriers, promote the sharing of information, and promote the creation of innovative ideas and behaviors with the accumulation of knowledge, which will help to improve employees' innovation performance. 2) To reduce uncertain factors. The study of AFC Rodrigues (2013) found that the higher individual's trust in the organization, the more employees are willing to overcome the risk of failure and try new ideas and improvement plans boldly [15]. (3) To provide moral support. Under the condition of the high level trust, employees often have positive expectation to other people or organizations, they believe other people or organizations can reach out to help them achieve their goals if they need, such as SE Fawcett, SL Jones, *et al.* (2012) [16]. It can be found that trust is closely related to enterprise innovation, but scholars seldom studied the relationship

between trust and innovation behavior at the individual level. Therefore, it is necessary to discuss the relationship between trust and employees' innovation behavior.

(3) By reviewing the existing literature researches, reciprocity specification in this paper is defined as a norm which is widely recognized in Social exchange process. Reciprocity is bidirectionality in relational capital, in other words, when one side provides some kind of assistance or resources to the other side, the other side is also obligated to follow a certain contract with each other and reciprocate. Therefore, the reciprocal norm is an important core of the relational capital, which can effectively integrate the internal and external unidirectional trust and identity, and construct the interactive relationship. Studies suggested reciprocal norm can influence innovation behavior by reciprocity and norm, which is also consistent with the above analysis. If there is a network of reciprocity in the enterprise, it may be easier for employees to cooperate and realize resource sharing for achieving integrated innovation [17]. In conclusion, the norms of reciprocity have close relations with employees' innovation behavior.

Based on social exchange theory and existing literature researches, we propose that:

H1: Relational capital has positive effects on employees' innovation behavior;

H1a: Organizational identification has positive effects on employees' innovation behavior;

H1b: Trust has positive effects on employees' innovation behavior;

H1c: Norm of reciprocity has positive effects on employees' innovation behavior;

#### B. *The Mediating Role of Knowledge Sharing*

The theory of creative composition holds that the level of creativity that an enterprise can generate depends on the knowledge and resources that employees can acquire. Knowledge sharing is an important way for individuals to acquire these knowledge and resources. Knowledge sharing is a collective behavior that refers to the process of sharing knowledge with others by the owner of knowledge, which can transform individual knowledge into collective knowledge [18]. Social capital theory and collective behavior theory believe that the connection between individuals is an important factor affecting collective behavior. Relational capital provides the prerequisite for knowledge sharing between employees, and social interaction will promote their sharing. It is conducive to knowledge sharing by the close observation and the Shared behaviors imitation of the shared. First of all, the more highly organized employees are more likely to make an extra effort at work, such as knowledge sharing to improve their innovation behavior. Second, before knowledge sharing, employees may refuse to do it because they worried their behaviors will make them lose their own competitiveness, but if there is a trust relationship between employees and the organization, it will greatly reduce the risk of knowledge sharing and facilitate knowledge-sharing willingness. Finally, research by Li Baizhou *et al.* (2017) showed that the stronger the expected reciprocity, the stronger employees' willingness to share knowledge [19]. Homans, from the perspective of economics and psychology, put

forward the theory of social exchange, argued all human behavior is an act of exchange [20].

According to connotation of social exchange theory, the knowledge sharing behavior is also a kind of social exchange; it will promote employees' innovative behavior eventually by promoting knowledge and resources sharing. Therefore, this study selects knowledge sharing as an intermediary variable to explore the mechanism of relational capital's role in innovation behavior of employees.

In conclusion, based on the theory of creativity composition, social exchange theory and academic literature have been established, we propose that:

H2: Knowledge sharing has positive effects on employees' innovation behavior;

H3: Knowledge sharing plays a mediating role between relational capital and employees' innovation behavior.

H3a: Knowledge sharing plays a mediating role between organizational identification and employees' innovation behavior;

H3b: Knowledge sharing plays a mediating role between trust and employees' innovation behavior;

H3c: Knowledge sharing plays a mediating role between the norm of reciprocity and employees' innovation behavior;

And on this basis, sort out the research framework, as shown in Fig. 1:

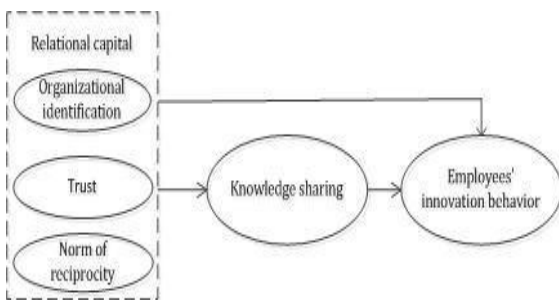


Fig. 1. Research on the impact of relational capital on employees' Innovation behavior.

#### IV. RESEARCH DESIGN

##### A. Definition and Measurement of Variables

This study mainly involves four types of variables, namely, relational capital, knowledge sharing, employees' innovation behavior, and control variables. First of all, select the specific measurement items according to the previous operation definition of the first 3 types of variables; followed by the Likert Five-level Scale measurement (1 is "very disagree", 5 is "very agree"), and prepare the measurement scale according to the existing literature .

##### B. Research Samples

The research collects data through an online platform to conduct questionnaire survey and collect data from information technology, finance and other enterprises. All kinds of invalid questionnaires were excluded, and 443 valid questionnaires were obtained. The effective feedback rate was 88.6%, which met the sampling standard. Among them, 35 were pre-survey questionnaires and 408 were formally questionnaires. The proportion of men and women is 47.8% and 52.2% respectively, which is basically flat; the age is in

the range of 20-39, up to 93.6%; In terms of education level, the undergraduate education is up to 63.1%, mainly to grass-roots staff, accounting for 74.5%; In terms of working years, the number of employees within six years reached 81.3%.

#### V. DATA ANALYSIS AND RESULTS DISCUSSION

##### A. Reliability and Validity Analysis

The Cronbach's Alpha reliability coefficient method was used to test the internal consistency of the data scale. The results showed that the standardized Cronbach's alpha coefficient was 0.977, the Cronbach's alpha coefficient of the organizational identity scale was 0.917, the Cronbach's alpha coefficient of the trust scale was 0.823, the Cronbach's alpha coefficient of the norm of reciprocity scale was 0.875, and the Cronbach's alpha coefficient of the knowledge sharing scale was 0.908. The Cronbach's alpha of the employees, innovation behavior scale Alpha coefficient of 0.925, indicating that the scale had a higher reliability. Bartlett Sphere Test and KMO sample measure were used to test the validity of the data scale. The KMO value was 0.937, the Bartlett body test significant degree was less than 0.001, rejecting the hypothesis that each variable was independent, that is, the variables had a good correlation. At the same time, the study used AMOS17.0 to analyze the confirmatory factor of the variable, RMSEA was 0.062 (<0.08), CFI was 0.915 (> 0.9) and TLI was 0.902 (> 0.9), indicating that the variables had good discriminant validity.

##### B. Homologous Variance Analysis

The variables involved in this study were filled by the same person to be tested, and there may be common method deviations. To test the reliability of the results, we used the Harman single factor test to test common method deviations. In addition to the control variables, the exploratory factor analysis of all the variables revealed that the variation of the first principal component interpretation was 24.55%, which is in the acceptable range, it is shown that the conclusion of this paper is credible.

##### C. Correlation Analysis

The correlation analysis was performed using the Pearson correlation coefficient method to check whether there was a correlation between the variables. Prior to this, the principal component analysis method was used to analyze the data scale, and five variables were extracted: Organizational Identification (OI), Trust (TR), Norm of Reciprocity (NR), Knowledge Sharing (KS), and Employees' Innovation behavior (EI), which are in line with the variables proposed by the study. We added the demographic variables to the correlation analysis. Three dimensions of relational capital: Organizational Identification (OI), Trust (TR), Norm of Reciprocity (NR) are significantly positively correlated with Knowledge Sharing (KS) and Employees' Innovation behavior (EI); Knowledge Sharing (KS) and Employees' Innovation Behavior (EI) also has a positive on relational capital. In terms of demographics, the relational capital between gender and employee innovation is significant,

indicating that gender differences may lead to differences in innovation behavior, and some previous studies have shown that male employees' innovative behavior and innovative self-efficacy are significantly higher than female employees. And age and employees' innovation behavior is significantly negative correlation, indicating that innovation with the age of growth gradually reduced. It is not difficult to understand that young people tend to have the spirit of adventure, dare to innovate; and as they grow older, they seek to stabilize their.

D. Regression Analysis of Mediation Effect Hierarchy

According to the method of mediation effect test proposed by Wen Zhonglin, it proves that the relational capital has an effect on knowledge sharing. The influence of knowledge sharing on employee' innovation behavior is the prerequisite to prove the role of knowledge sharing in relation to capital and employees' innovation behavior. And on this basis, we add the knowledge sharing as the intermediary variable to detect the change of the degree of influence of the relational capital on the employee's innovation behavior. If the relational is weakened, it shows that the knowledge sharing has some mediating effect. If the relation disappears, it shows that the knowledge sharing has complete mediating effect [21]. The intermediate effect regression equation is as follows:

$$\begin{aligned}
 Y &= cx + e1 & 1) \\
 M &= ax + e2 & 2) \\
 Y &= c'x + bM + e3 & 3)
 \end{aligned}$$

According to the equation (1) the research first takes the employees' innovation behavior line as the dependent variable to carry on the regression analysis to the three dimensions of the relational capital. As shown in the model 2 in Table 1, Organizational Identification, Trust and Norm of Reciprocity have significant effect on the employees' innovation behavior. ( $\beta = 0.351, p < 0.001$ ;  $\beta = 0.382, p < 0.001$ ;  $\beta = 0.366, p < 0.005$ ). Namely, the coefficient of C is significant, H1 and its corresponding hypothesis are true. shown in Model 3. It is found that Knowledge Sharing has a significant positive effect on employee' innovation behavior ( $\beta = 0.364, p < 0.001$ ), namely, the coefficient b is significant; In addition, after adding Knowledge Sharing variable on the basis of Model 2, the Organizational Identification, Trust and Norm of Reciprocity are reduced from 0.351, 0.382, 0.366 to 0.302, 0.349 and 0.318, and Then, with reference to equation; (2), we use the Knowledge Sharing as the dependent variable and to carry on the regression analysis to the Organizational Identification, Trust and Norm of Reciprocity respectively. And to verify the coefficient a is significant or not. The result is shown in model 1. Organizational Identification, Trust, and Norm of Reciprocity have significant positive effects on Knowledge Sharing ( $\beta = 0.313, p < 0.001$ ;  $\beta = 0.425, p < 0.001$ ;  $\beta = 0.509, p < 0.001$ , that is, the coefficient a is significant. Then according to the significance of the equation; (3) to test coefficient b and c', the Knowledge Sharing of variables is added on the basis of Model 2, and the three dimensions of the relational capital and Knowledge Sharing as independent variables, employees' innovation behavior as a dependent variable to carry out regression analysis. The results are as corresponding significance of each path

coefficient decreases, and the coefficient c' is significant, H3 and its corresponding hypotheses are established.

TABLE I: THE MEDIATION EFFECT TEST RESULTS

X \ y	KS			EI
	Model 1	Model 2	Model 3	
OI	0.313***	0.351***	0.302**	
TR	0.425***	0.382***	0.349**	
NR	0.509***	0.366**	0.318**	
KS			0.364***	
R <sup>2</sup>	0.492	0.452	0.576	
F	158.533	76.253	62.25	

In order to further examine the intermediary effect and the degree of its action, according to the method of mediation analysis proposed by Hayes [22], the Process plug-in was used to test the Bootstrap mediation variables, the result is shown in Table II. Within the confidence interval of 95%, Knowledge Sharing plays a mediating role between the three dimensions of Organizational Identification, Trust and Norm of Reciprocity, and employees' innovation behavior. In addition, there is no 0 between the upper and lower limits (LLCI) and the interval upper bound (ULCI) of the Bootstrap test, verifying the existence of the intermediary effect again, that is, the H3 and its corresponding hypothesis were established.

TABLE II: THE MEDIATION EFFECT TEST RESULTS

Indirect effect	Effect	Boot SE	LLCI	ULCI
OI→KS→EI	0.482***	0.081	0.371	0.657
TR→KS→EI	0.391***	0.131	0.068	0.452
NR→KS→EI	0.424***	0.092	0.322	0.515

VI. CONCLUSION AND PROSPECT

A. Theoretical Implications

This research explored the impact and effect of relational capital on employees' innovation behavior. The research showed that relational capital is an important antecedent variable of employees' innovation behavior, which had provide a new research perspective on the study of employees' innovation behavior. It had important significance of the research in the impact and effect of relational capital on employees' innovation behavior in Chinese human society. Generally, the organization believes that employees with high organizational identity are more likely to have extra-role behaviors, which make them more possible to produce new ideas at work; If employees trust each other, it will be beneficial to the collaboration among employees, and which will help employees find new problems in their work and come up with new ideas. If there is norm of reciprocity in the organization, it will facilitate the exchange of resources, thus that is conducive to the creation of innovative behaviors. At the same time, the study verified the intermediary role of knowledge sharing between relational capital and employees' innovation behavior, and opened the

black box of relational capital to employees' innovation behavior. Overall, the results of the research enriched the study between relational capital and employees' innovation behavior, which further revealed the mechanism of action between relational capital and employees' innovation behavior, and it as well as provided a new train of thought for the research of employees' innovation behavior.

### *B. Implications for HRM Practice*

Through the research, it found that enterprises can adopt following ways to achieve the goal of stimulating employees' innovation behavior by enriching employees' relational capital in daily management:(1)Improve the recruitment, training and other work, enterprises select the employees of high mental toughness when taking standardized recruitment way, which will let employees know the fairness of organizational procedures. Such employees who are well adapted to the environment and work are more liable to reach a consensus with organization in terms of values and more; Enterprise should strengthen employee training, build a system of professional development, and expand the platform of employee promotion and growth surrounding the concept of enterprise development; Enterprise also should build the core culture of the enterprise, reach the consensus of the internal members, and unify individual growth with the development of the enterprise, so as to promote the formation of employees' organizational identity.(2)Enterprise should improve the system construction, promote the standardized operation of enterprise, and build a reliant corporate culture combined with the empowering leadership behavior, Establish and modify the internal integrity system of the enterprise in order to strengthen the trust level among employees, and thereby promote employees' innovation behavior.(3)Efforts should be made to promote the internal team building of enterprises in order to strengthen humanistic care and create a corporate atmosphere of mutual benefit and mutual assistance. (4)Promote the construction of enterprise data sharing platform and information sharing mechanism, knowledge sharing should be brought into the company performance evaluation indicators that conduct material and spiritual rewards for employees' sharing behavior, so that promote the knowledge sharing behavior of employees; Promote the sharing of knowledge through employee job rotation and employee suggestions; In addition, the establishment of internal social networks, such as the internal WeChat group and the establishment of QQ groups, can increase the opportunities for employees to communicate with each other, and then accelerate the flow and knowledge sharing.

### *C. Limitations and Further Research Directions*

Although this study has some guiding significance for practice, it still has the following shortcomings:(1)The samples were taken mainly for the Chengdu high-tech enterprises, which maybe exist some regional limitation. So future research can expand the scope of urban areas, improve the sample representativeness, and make the horizontal comparison in whether there is obvious difference in different areas;(2)Limited by time, the data used in this research are cross-sectional data. Future studies should expand the data

cycle and use panel data to improve the robustness of the results of causal analysis; (3) This research selected knowledge sharing as intermediary variables, which discussed the indirect pathway that relational capital effect on employees' innovation behavior through knowledge sharing, but there could be other functional pathways between relational capital and employees' innovation behavior, and this will be the subject of further study.

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