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An Empirical Study on Technical Resources in Innovative Technologies Based on the Context of Chinese Iron and Steel Enterprises

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Abstract

Given the fact that the change of internal and external environment, iron and steel enterprises emphasize the management of technical staff through authorized leadership and the realization of innovative behavior and performance through the hard work of technical staff. Because of its own characteristics and advantages, technical staff has become the core force of innovation in iron and steel enterprises, which not only attracted the attention of iron and steel enterprise managers, but also attracts more and more attention from theoretical researchers. Among them, it has become an important topic and thus the purpose of this paper to study the influence of leadership style on innovative behavior and innovative performance of skilled employees. The implications of this study show that an authorized leadership style can meet the needs of technical employees for self-management, eager to be respected and engaging in innovative activities in a relatively relaxed environment. However, in the existing literature, there is not enough research on the intermediate mechanism of how authorized leadership affects the innovative behavior and performance of technical employees, especially from the perspective of psychological factors such as trust, emotion and psychological capital of technical employees. The quantitative design shows that the intermediary mechanism between technical staff's innovative behavior and innovative performance needs to be further studied to reveal its internal law.

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Introduction

Iron and steel industry is the basic industry of China's national economic development and an important symbol of national economic level and comprehensive strength. China's iron resources are widely distributed, with abundant reserves and great demand. After the reform and opening, with the rapid development of China's economy, the iron and steel industry has been developed rapidly. Steel production has been ranked first in the world for 18 years in a row. In 2013, China's crude steel production reached 779 million tons, a year-on-year increase of 8.72%, accounting for 48.5% of the world's total crude steel production (Law et al., 2019b). My country has become the world's largest steel producer, importing and consuming country. Although the growth rate of steel production in China has slowed down compared with previous years, the overall growth rate is still higher than the global average. Great progress has been made, and a number of large iron and steel enterprises with relatively large scale and strong technical strength have been formed, which can compete with foreign countries (Younus & Raju, 2021).

Problem statement

The arrival of the knowledge-based economy society, the upgrading of consumer service demands, and the constant emergence of various service upgrades require all departments of iron and steel enterprises to win customer satisfaction through continuous innovation. At the same time, iron and steel enterprises are facing various challenges in the process of providing services. This improvement and competition in service quality is ultimately manifested as the competition of innovative talents (Raju & Phung, 2020), In particular, how to fully stimulate the innovation behavior of technical employees in iron and steel enterprises and improve innovation performance has become an important issue for the innovation and development of iron and steel enterprises (Raju & Phung, 2020). All kinds of factors and related variables in the process of influence. However, research on the intermediary mechanism of the influence of leader's authorization behavior on the innovative behavior and innovative performance of technical employees is still insufficient (Raju & Phung, 2020). Based on the social cognitive theory, this paper discusses the intermediary mechanism of how authorized leaders affect the innovative behavior and performance of technical employees through the internal psychology of technical employees, such as trust and emotion, organizational support and the exchange relationship between leaders and employees (Raju & Phung, 2018). The moderating effect of situational factors on intermediary mechanism. The leader's authorization behavior can have an impact on psychological factors such as trust and emotion of skilled employees. At the same time, the psychological reaction of technical employees will be manifested through certain behaviors, and innovative behavior and innovative performance are important performances (Raju & Phung, 2018). Psychological factors such as trust and emotion of skilled employees play a role in cognition and self-behavior of external environmental factors (Carr et al., 2021)

Significance of research

Iron and steel enterprises, as industrial enterprises in the new era, need to continuously improve their innovation ability, enhance their product competitiveness through innovative activities, and meet customers' upgraded service needs. In this process, technical staff is the main force of organizational innovation (Olusanya et al., 2021). How to promote the innovative behavior and innovation performance of technical employees through the implementation of empowering leadership has become an important task for organizational managers (Cisneros-Montemayor et al., 2020). Moderating effect can more clearly reveal the mechanism that authorized leadership affects the internal relationship between psychological capital and innovation performance of technical employees, and enrich the related research content of moderating effect between authorized leadership and innovation performance of technical

employees. Provide a theoretical basis for organizing managers to implement authorized leadership to promote innovative behavior of technical staff. Because of its own characteristics and advantages, skilled employees have become the core force of organizational innovation. The results show that the empowered leadership style can influence the innovative behavior of technical employees through internal mechanisms such as trust and emotion and improve their innovative performance. The organization managers can implement empowered leadership styles for technical staff.

Research question

Taking the leader-employee exchange relationship as the regulating variable, this paper designs the relationship model between authorized leaders and technical employees' innovative behavior under the background of iron and steel enterprises, and studies and constructs the innovative behavior model of authorized leaders and technical employees by using the research methods of literature research, questionnaire surveys and data statistics, so as to provide guidance for iron and steel enterprises in theory and practice. On this basis, this study puts forward research questions.

RQ1 - What is the relationship between authorized leaders and innovative behavior of technical staff?

RQ2 - Does the trust mechanism play a mediating role in the relationship between empowering leadership and technical employees' innovative behavior and performance?

Research objectives

Exploring the influence of authorized leadership on the innovative behavior of skilled employees plays an obvious role in improving the economic benefits of iron and steel enterprises. Based on this, this study puts forward research objectives for the specific organizations in China iron and steel enterprises. The research objectives are as: RO 1 – To explore the mediating mechanism of empowering leadership and innovative behavior of technical employees; RO 2 – To evaluate the mediating role of trust mechanism between authorized leaders and innovative behavior of technical staff.

Literature review

Research based on the psychological paradigm understands trust as the psychological reaction or psychological characteristics formed by an individual in a specific social environment, which is an individual's psychology and behavior determined by situational stimuli. Early social psychological research defined trust as an optimistic expectation of the consequences of an event. The most representative one is the research of Deutsch (Cisneros-Montemayor et al., 2020), who defined trust as: expecting something to happen and taking an action accordingly, and the result of this action is the opposite of its expected result. When the results are in line with expectations, the negative psychological influence is greater than the positive psychological influence. With the rapid development of information technology and rapid changes of social environment, the uncertainty of the internal and external environment of iron and steel enterprises has increased greatly. The traditional institutionalized management of precise control has been difficult to adapt. Management based on trust will be more conducive to the organization sustainable development (Jalilvand et al., 2018). From the core point of view of social cognitive theory, mutual trust is a key factor for the existence of various relationships and contracts, because trust affects and even guides the attitudes and behaviors of both parties to a contract (Law et al., 2019a). Therefore, Robinson's definition of organizational trust in 1996 has been widely recognized by scholars. He believes that the main body of organizational trust is the employee, which is the sincere and reliable recognition and trust of employees to the organization or leader ((Pham-Truffert et al., 2020). Organizational

trust is actually employees' trust and support for the organizational systems, leaders or other employees based on the acquisition and judgment of relevant information about leaders and organizations (Fang, 2010) Employees' trust in supervisors comes from two sources: one is the emotional connection formed during the interaction between employees and supervisors, and the other is based on their own rational cognition and judgment of personal characteristics such as supervisors's ability and personality. According to the above sources of organizational trust, employees' trust in supervisors can be divided into two types, namely, emotion-based trust and cognition-based trust.(Raju & Phung, 2018) Job Affection (Job Affection) is a relatively broad concept, including people's emotional experience and mental state at work (Diener, 1999). Emotion (referring to the individual's strong feeling about someone or something, such as joy, anger, depression, etc.) mainly includes four core components: subjective experience, physiological response, facial expression (such as facial expressions) and behavioral responses (Raju & Phung, 2020). Emotion (similar to the subjective experience component of emotion, which represents the subjective component of individual experience, has positive or negative evaluation nature (Raju & Phung, 2020). However, compared with emotion, emotions are lower in intensity and longer in duration, with no obvious reason, and are not targeted at specific people or events. Social cognitive theory is an educational theory developed by American psychologist Bandura in the 1970s (Raju, 2021). After in-depth study by different scholars, it developed rapidly in the 1990s and won wide recognition from more and more researchers. Agree with and gradually perfect the theory. Social cognitive theory is composed of three parts: ternary reciprocal determinism, observational learning and self-efficacy (Raju & Phung, 2018).

Research framework

The research object of this paper is technical staff, and the core of the research is the influence mechanism of authorized leadership on technical staff's innovative behavior and performance, including the trust mechanism of authorized leadership's influence on technical staff and the emotional mechanism of authorized leadership's influence on technical staff (Figure 1). Since the leadership style of managers has a direct and far-reaching impact on employees' work input and output, the requirements of technical employees' According to the above research content and design, the overall research model of this paper, and the follow-up specific research will be carried out in two directions: the first direction is the research of trust mechanism, that is, the authorized leader is the independent variable, the trust based on the emotion and cognition is the intermediary variables, the innovative behavior of technical staff is the dependent variable, and the sense of organizational support (POS) is the moderating variable (Raju, 2021). Through research, we explore the trust mechanism that authorized leaders influence the innovative behavior of technical staff (Raju & Phung, 2020). The second direction is the study of emotional mechanism that is, taking authorized leadership as independent variables, positive and negative emotions as the intermediary variables, technical staff's innovation performance as dependent variable, and employee-leader exchange relationship (LMX) as moderating variable, so as to explore the emotional mechanism that authorized leadership affects technical staff's innovation performance through research (Raju & Phung, 2020).

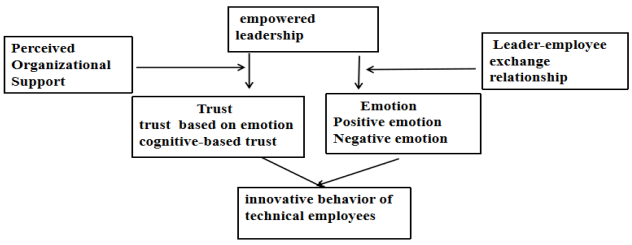

Figure-1- Framework of the overall model studied in this study

Based on the research paradigm of asking questions-analyzing problems-solving problems, and on the basis of systematic literature review and analysis, this paper defines the research object and content, and further puts forward the problem, that is, the research on the intermediate mechanism of empowering leaders to influence the innovative behavior and innovative performance of technical employees, and refine it into the research on the trust mechanism and the emotional mechanism of empowering leaders to influence the innovative behavior of technical employees. A questionnaire was designed for the two studies, and the survey was carried out. On the basis of collecting data, analyze and process, analyze the problems and verify assumptions, finally draw a conclusion and put forward management countermeasures to solve corresponding problems (Raju & Phung, 2018).

Research design

With the development of China's higher education, the structure of human resources has also undergone tremendous changes, and the proportion of skilled employees in the organization has gradually increased. Many scholars have pointed out that technical employees are the key factor determining the success of the organization (Raju & Phung, 2020). Compared with ordinary employees, skilled employees have the characteristics of high autonomy, high education, and strong creativity. While paying attention to their own economic benefits, they expect to be able to grow in an all-round way at work and finally gain the value of self-realization experience (Patzelt et al., 2021).

Population/sampling/unit of analysis

In this paper, more than 20 iron and steel enterprises in many cities in China were selected to conduct a questionnaires survey, which is representative to some extent. Technical staff fill in variable questionnaires about authorized leadership, trust mechanism (trust based on emotion and trust based on cognition), emotional mechanism, organizational support (P 0S), and leader-employee exchange relationship, and the direct supervisor completes the overall evaluation of technical staff's innovative behavior, to ensure proper control and reduce corresponding deviation. The members of the research group numbered the questionnaires in advance, and distributed the questionnaires with specific numbers to specific ratio in the specific investigation operation process, so as to realize the questionnaire matching investigation between managers and their subordinates (Khoshlahn & Ardabili, 2016).

Validity and reliability test

In order to verify the validity of the questionnaire data, this paper analyzes the data with the help of SPSS 19 and other statistical analysis software. Good reliability (as shown in Table 1). It can be seen from the data in Table 3.1 that all Cronbach 1 coefficients are greater than 0.7, The correlation between different items in the scale is high, and after deleting a single item, the Cronbach' Q coefficients of the scale all decrease. In addition, the comprehensive reliability of each scale in this study is greater than 0.7, which shows that the reliability of the existing scale is good, thus ensuring the reliability of the scale and data and facilitating problem verification (Ågotnes et al., 2021).

Table 1 - Scale reliability and validity test

variable name	Gronbach 1 sa coefficient	Combination reliability	total variance explained
empowering leadership	0. 874	0. 873	67. 357%
trust based on emotion	0. 890	0. 897	70, 854%
cognition-based trust	0.907	0. 924	72. 203%
Perception of Organizational Support (POS)	0. 895	0. 909	75. 468%
innovative behavior	0. 959	0. 959	69. 406%

3.4.2 Reliability and validity test of emotion mechanism as mediating variable

All the scales in this questionnaire use the existing maturity scales. With the help of SPSS 19.0 software, the reliability and validity of the data obtained from the scale survey were tested, and the scale was tested by Cronbach 1 sa coefficient. Reliability test, the Cronbach's α coefficients of all variables are greater than 0.7 (see Table 2), indicating that the correlation between the items in the scale is relatively high, and after the single item is deleted, the Cronbach's α coefficients of the scale have all dropped (Drouin et al., 2021).

Table 2 - Reliability and validity test

variable name	Gronbach [1] sa **coefficient**	Combination reliability	total variance explained
empowering leadership	0.912	0. 914	65.101%
positive emotion	0.954	0. 956	71.480%
Negative emotion	0. 968	0.952	78. 507%
LMX	0.912	0.917	66. 672%
innovation performance	0.901	0.902	77. 155%

Data collection process

In this survey, 350 matching questionnaires were distributed, and 300 were recovered, with a recovery rate of 85.7%. According to the requirements of questionnaire screening, 238 valid matching questionnaires were obtained, and the effective rate was 79.3%. Among them, among the employees surveyed, 68.9% were men and 31.1% were women; Employees aged 20-30 account for 52.5%, employees aged 30-40 account for 61.5%, employees aged 40-50 account for 11.8%, and employees over 50 account for 4.2%; 18.1% of them are three years or less, 27.3% are 3 to 5 years, 19.7% are 5 to 8 years and 34.9% are 8 years or more; From the education level, 68.1% of people have a bachelor's degree or below (junior college or above), and 31.9% have a bachelor's degree or above; In terms of the number of people in the teams, 12.2% of them are in a team of 1 to 5 people, and 25.6% are in a team of 6 to ten people. 2%. 29% have 10-15 people, and 33.2% have more than 15 people.

Data analysis methods

In this paper, the following data analysis methods are used, which are described as follows.

1) Reliability and validity test. In order to verify the validity of the questionnaire data obtained, this thesis uses statistical analysis software such as SPSS 19.0 to analyze the data, and uses Cronbach coefficient as the main index to uniformly test the reliability of each scale. Since the scales used are adapted from authoritative literature at home and abroad, such as the mature scales in AMJ, they have been used by scholars for many times, and the questionnaires have also undergone reinvestigation and repeated demonstrations by many experts and researchers. , using the total variance of the explanation to test the validity of the content (de Zulueta, 2021).

2) Pearson correlation analysis is used in this study to explore the degree of correlation among several variables. By calculating the correlation, mean and standard deviation, the validity can be judged, and further hypothesis verification can be carried out (Khan et al., 2020).

3) In order to further verify the research hypothesis, this paper uses the method of multi-level linear regression to test the mediating effect of trust mechanism and emotional mechanism, thus verifying the establishment of the research hypothesis.

Profile of respondents

The basic characteristics of the technical employee sample are shown in Table 3.

Table 3 - Description of basic characteristics of technical employee samples

project	options	number of people	Proportion
gender	male		68.9%
	female		31.1%
age	20-30 years old		52.5%
	30-40 years old		31.5%
	40-50 years old		11.8%
	50 and over		4.2%
academic qualifications	Undergraduate and below (junior college and above)		68.1%
	Bachelor's degree or above		31.9%%
working years	3 years and below		18.1%
	3-5 years		27.3%
	5-8 years		19.7%
	over 8 years		34.9%
Team size	1-5 people		12.2%
	6-10 people		25.6%
	10-15 people		29%
	More than 15 people		33.2%

Following points can be summarized from the data in the table above:
1) The number of men among technical employees is twice as many as that of women, which is consistent with the actual situation. Most of the technical employees in iron and steel enterprises are male, so the gender ratio of the samples in this thesis is reasonable.
2) Technical employees under the age of 40 accounted for 84% of the sample, which shows that most of the technical employees in iron and steel enterprises are young people, and they are more accepting of the management style of empowering leadership.
3) 31.9% have a bachelor's degree or above, and the rest have a college degree or above. It shows that technical employees in iron and steel enterprises generally have higher academic qualifications, and they are active in thinking and strong in innovation.
4) 54.6% have worked for more than 5 years, which shows that the technical employees of iron and steel enterprises are relatively stable and have a certain sense of belonging to the enterprise.
5) Teams with

	M	**SD**	**1**	**2**	**3**	**4**	**5**
empowering leadership	**4. 287**	**.506**	**(0. 653)**				
trust based on emotion	**4. 103**	**.551**	**.542****	**(0. 799)**			
cognition-based trust	**4. 205**	**.583**	**.493****	**.785****	**(0. 821)**		
innovative behavior	**3.958**	**.613**	**.525****	**.632****	**.601****	**(0. 746)**	
Organizational Perception of Support	**3.984**	**.630**	**.554****	**.572****	**.603****	**.452****	**(0. 851)**

Note = L* means the significance level is p<0.05, ** means the significance level is p<0.01;
2 • In parentheses is the square root of AV;;;E , that is, discriminant validity.

To further verify the research hypothesis, this thesis uses multi-level linear regression method to test the mediating effect of emotion-based trust and cognition-based trust, and the specific results are shown in table 4. First, choose the dependent variable emotion-based trust and the independent variable empowering leadership to perform linear regression. The test results show that empowering leadership can significantly affect emotion-based trust (6=0.617,

H0.001), so H2 is verified. Secondly, Models 3, 4, and 5 select the dependent variable innovation behavior, and conduct multi-level linear regression on the dependent variable innovation behavior with the independent variables empowering leadership and emotion-based trust respectively.

Table 4 - Mediating effect of emotion-based trust and cognition-based trust

dependent variable	emotion based trust	cognition based trust	innovative behavior				
	model **1**	model **2**	model **3**	model **4**	model **5**	model **6**	model **7**
control variable							
gender	**-0. 150***	**-0.109 _**	**0.143**	**0. 028**	**0. 108**	**0. 111**	**0.080 _**
age **1**	**-0.133 _**	**-0.098 _**	**-0.061 _**	**-0.146 _**	**-0.075 _**	**-0.093 _**	**-0.099 _**
age **2**	**0.000 _**	**-0.104 _**	**0.060 _**	**0.061 _**	**0.062 _**	**0. 125**	**0.111**
age **3**	**-0.029 _**	**-0.133 _**	**-0.093 _**	**-0.074 _**	**-0.059 _**	**-0.037 _**	**-0.010**
Education **1**	**-0.242 _**	**-0.266 _**	**0.075 _**	**-0.137 _**	**-0,008 _**	**0.084 _**	**-0.010**
Education **2**	**-0.213**	**-0.234 _**	**0.097 _**	**P 088**	**0.026**	**0. 105**	**0. 024**
Education **3**	**-0.158**	**-0.054 _**	**-0.227 _**	**-0.382 _**	**-0.298 _**	**-0.293 _**	**-0.356 _**
Seniority 1	**0.075**	**-0.020 _**	**0.085**	**0. 129**	**0. 089**	**0. 152**	**0. 138**
Seniority **2**	**0.081**	**-0.086 _**	**0.018**	**0.030 _**	**-0.014**	**0. 138**	**0.071**
Seniority **3**	**0. 259***	**0. 181**	**0. 181**	**0. 359***	**0. 220***	**0. 246***	**0. 272***
Team size **1**	**-0.071 _**	**0. 119**	**-0.073 _**	**0.025**	**-0.013**	**-0.109 _**	**-0.032 _**
Team size **2**	**0.067 _**	**0. 105**	**-0.030 _**	**0.025**	**-0.011 _**	**-0.051 _**	**-0.025 _**
Team size **3**	**0.050 _**	**0. 115**	**-0.007 _**	**0.016**	**-0.010**	**-0.044 _**	**-0.039 _**
independent variable based on emotional	**0. 617*****	**0. 605*****	**0. 694*****	**0. 650*****	**0. 320***** **0. 535*****		**0, 360*****
Cognition based trust						**0. 635*****	**0. 479*****
R ²	**0. 339**	**0. 296**	**0.446**	**0.336**	**0. 490**	**0. 423**	**0. 482**
Adjust **V**	**0.297**	**0. 251**	**0. 441**	**0.295**	**0. 455**	**0. 387**	**0. 447**
F value	**8. 154*****	**6. 686*****	**12. 813*****	**8,075 *****	**14. 209*****	**11.676 *****	**13. 787*****
DW value	**1.833**	**1.590**	**1.835**	**1.797**	**1.820**	**1. 760**	**1.781**

Note: 1 . represents a significant level of p<0.05, ** represents a significant level of p<0.01, *** represents a significant level of

Test results with cognition-based trust as a Mediator: First, regression is performed with cognition-based trust as the dependent variable and empowering leadership as the independent variable. The results show that empowering leadership has a significant impact on cognition-based trust (B =0.605, p<0.001), therefore, hypothesis H3 was verified. Models 2, 6, and 7 take innovative behavior as the dependent variable, and use empowering leadership and cognition-based trust as independent variables to perform multilevel linear regression on innovative behavior. It is known that empowering leadership has a significant positive impact

on innovative behavior. In Model 7, after adding cognitive-based trust, the regression coefficient of empowering leadership on innovative behavior dropped from 0. 650 to 0. 360, and the P value is less than 0.001, therefore, hypothesis H3a is verified, that is, cognition-based trust plays a partial mediating role between empowering leadership and innovative behavior.

Table 5 - Moderating effect of organizational support perception

dependent variable	Trust based on emotion		cognition-based trust			
	model **1**	model **2**	model **3**	model **4**	model **5**	model **6**
control variable gender	**-0. 150***	**-0. 143***	**-0.158 _**	**-0.109 _**	One① **101**	**-0.109 _**
age **1**	**-0.133 _**	**-0. 290***	**-0. 250**	**-0.098 _**	**-0. 293***	**- 0. 272**
age **2**	**0.000 _**	**-0.072 _**	**-0.044**	**-0.104 _**	**-0.193 _**	**-0.179 _**
age **3**	**-0.029 _**	**-0.132 _**	**-0.096 _**	**-0.133 _**	**-0.262 _**	**-0.242 _**
Education **1**	**-0.242 _**	**-0.170 _**	**-0.182 _**	**-0.266 _**	**-0.175 _**	**-0.182 _**
Education **2**	**-0.213**	**-0.175 _**	**-0.177 _**	**-0.234 _**	**-0.186 _**	**-0.187 _**
Education **3**	**-0.158 _**	**-0.141 _**	**-0.154 _**	**-0.054 _**	**-0.034 _**	**-0.040 _**
Seniority **1**	**0.075**	**0. 177**	**0.170**	**-0.020 _**	**0. 108**	**0.104**
Seniority **2**	**0.081 _**	**0. 158**	**0.072 _**	**-0.086 _**	**0.010**	**-0.036 _**
Seniority **3**	**0, 259***	**0. 284***	**0. 219**	**0. 181**	**0.211***	**0. 176***
Team size **1**	**0.071 _**	**0.092 _**	**0.074**	**0. 119**	**0. 145**	**0. 135**
Team size *2*	**0.067 _**	**0.084 _**	**0.067**	**0. 105**	**0. 125**	**0. 116**
Team size **3**	**0.050 _**	**0.081**	**Q.093**	**0. 115**	**0. 154***	**0. 161**
independent empowering leadership	**0. 617*****	**0. 355*****	**-1.193***	**0. 605*****	**0. 278*****	**-0.552 _**
POS		**0. 362*****	**— 1 . 1 42***		**0. 453*****	**-0.498 _**
empowering leadership* **P0S**			**0.401*****			**0.215***
R ²	**0.339**	**0.448**	**0.486**	**0. 296**	**0.449**	**0. 459**
Adjusting	**0. 297**	**0. 441**	**0.449**	**0. 251**	**0.411**	**0. 419**
AR ²		**0. 109**	**0. 038**		**0. 153**	**0.010**
F value	**8. 154*****	**12.003*****	**13. 076*****	**6. 686*****	**12. 041*****	**11.696 *****
DW value	**1.833**	**2,015**	**2.066**	**1.590**	**1. 731**	**1. 729**

Note: L* represents the significance level is p<0.05, ** represents the significance level is p<0.01, *** represents the significance level is p<0.001.

Taking the multi-source data of the higher level as the research object, using the time longitudinal design method, it is found that the interaction of authorized leadership, uncertainty avoidance and trust has a positive impact on the creation of self-efficacy, and then affects the creativity of employees. The above studies mainly focus on the positive effects of empowering leadership (Prasojo et al., 2021). Cheong et al. (2016) a dual path analysis of the relationship between authorized leadership and job performance was proposed. One path of empowerment is that empowering leaders can improve their job performance by improving their self-efficacy, and the other path of destruction is that empowering leaders can increase the tension brought by work. Based on role theory and resource conservation theory, this paper discusses how authorized leaders influence their work performance through tension (Stremersch et al., 2021). According to the role theory, by authorizing leaders to accept additional tasks and responsibilities, it will interfere with the early construction of subordinates. Role perception, in turn, may increase the role pressure of subordinates and cause their tension (Shafi et al., 2020). According to the theory of resource protection, people who experience stress will check the reasons for their resource loss and try to find ways to protect their remaining resources so as not to be further exhausted. The process will hinder the best use of other resources, thus affecting cognitive resources and positive emotions in solving problems, thus reducing work performance (Fareed et al., 2021). Yin et al. (2016), Lee

et al. (2017) explored the role of empowering leadership in task performance based on the theory of autonomy costs and the idea of "too much to be as good as" and found that empowering leadership has an inverted U-shaped impact on task performance, which is like that of empowering leadership. Contrary to the positive impact on job performance, the relationship between authorized leadership and job performance produces contradictory conclusions. Among them, the negative effects of authorized leadership are mainly manifested in the loss of internal resources of employees, the increase of pressure of employees' work roles, and employees' disapproval of authorized leadership (Sudibjo & Prameswari, 2021)

Conclusion

Starting from the psychological factors such as trust and emotion of technical employees, this study systematically and empirically studies the trust mechanism and emotional mechanism of empowering leadership's influence on technical employees' innovation behavior and innovation performance and draws some valuable research conclusions. In future research, it is necessary to further study the following questions or directions: (1) Psychological factors such as people's trust, emotion, and psychological capital will change dynamically with the external environment (Patzelt et al., 2021). This study selected cross-sectional data, and it is difficult to dynamically examine the long-term impact of empowering leadership on the trust and emotion of technical employees. Future research can select vertical multi-point data for dynamic research, and investigate the dynamic changes between authorized leaders, POS and LMX, etc., and technical employees' trust, emotional and psychological factors. At the same; time, in-depth research can also be conducted in different dimensions (Hasselgren et al., 2021). (2) Organizational innovation is manifested in many aspects and different types. Various forms of innovation also have obvious differences in requirements for technical employees. In future research, it is necessary to study the internal and external influencing factors of technical employees for different types of innovation. It is also possible to study the internal mechanism of leadership style on technical employees' innovation behavior and innovation performance from more abundant psychological factors(Hermina et al., 2021); AND (3) There is also the question of the degree of authorization in the authorization behavior of the authorization-type leadership style. There are excessive authorization and possible adverse consequences, etc. This series of problems also needs to be deepened in follow-up research (Cartagena-Gutiérrez et al., 2021; Carr et al. 2021).

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