

# Research on the Moderating Role of Authorized Leadership in the Relationship Between Mental Capital and Innovative Performance of Knowledge-Oriented Employees

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## Abstract

In this paper, through the collection and processing of 206 questionnaires of knowledge-oriented employees and their supervisors to match the effective data, empirical research on the impact of the psychological capital of knowledge-oriented staff on innovative performance through the intermediary mechanism, and the moderating role of authorized leadership in the intermediary mechanism. The results show that the mental capital of knowledge-based staff can influence the intrinsic mechanism of innovation performance through work effort, and authorized leaders can positively adjust the influence of psychological capital on work effort. Meanwhile, authorized leaders can adjust the influence of knowledge workers' work on their innovation performance. On this basis, this paper proposes that managers can influence the relationship between mental capital of knowledge-based employees and their work and innovation performance through empowering leadership style and give full play to the positive role of knowledge workers in enterprise innovation.

**Keywords:** Empowering Leadership, Knowledge workers, Innovative behavior, Trust mechanism

## 1. Introduction

Social cognition theory holds that human behavior is the response to external stimuli, and also the external manifestation of the compound effect of internal factors. Therefore, the innovative behavior of knowledge workers is the result of the combination of internal and external factors (Amabile 1988; Ahearne *et al.* 2005). Compared to the average employee, knowledge workers have many characteristics in their personal traits such as: psychological needs, values and working methods. They pursue autonomy, individuality, diversity and innovative spirit, gaining motivation more from the work itself, hoping to achieve personal fulfilment through their own human capital. Not only do they have higher psychological capital, at the same time, psychological capital plays an important role in the process of their work and innovation, and a series of leadership and management styles of the authorized leadership style fit the psychological needs of the knowledge workers (Button 1996; Ashkanasy *et al.* 2000). But how psychological capital affects the innovative performance of knowledge workers, and how the authorized leadership plays a role in this process, it remains to be studied further.

Psychological capital is the psychological tendency and characteristic formed by the behavior subject after many years' accumulation of life experiences. In general, this tendency and characteristic are stable, which can affect people's working efficiency internally and more lastingly, including the evaluation of the behavior subject, the cognition of life and the attitude to work, etc., which is goldsmith (Cable *et al.* 2004). Studies show that psychological capital has a significant impact on innovation performance. Because the psychological capital is the human intrinsic characteristic, it affects the human behavior to be more far-reaching, at the same time, it can be affected by such factors as knowledge, experience, skill, etc.. The mental capital of knowledge-based staff is higher than that of ordinary employees. So is their cognitive ability, deep understanding of individual goals, higher expectations and self-management. Therefore, the role of mental capital of knowledge-based staff in their innovative behavior and innovation performance will be more significant (Chan *et al.* 2012). The influence of psychological capital on innovation performance should be aroused in the atmosphere of empowerment leadership. However, on the atmosphere of empowerment leadership, how the mental capital of knowledge-based employees affects their working status, and then influences their innovation behavior and innovation performance, that is, how this psychological capital affects the knowledge-oriented staff's innovative performance, there is a lack of in-depth research. On the basis of literature analysis, this paper studies the internal mechanism of psychological capital through work effort to influence the innovative performance of knowledge workers, and the moderating role of authorized leadership style as an enterprise management atmosphere in this mechanism.

## 2. Theoretical assumptions

### 2.1 The influence of psychological capital on the innovation performance of knowledge workers

Psychological capital refers to a kind of positive psychological state that the individual shows in the process of growth and development, a core psychological element that transcends human capital and social capital, and a psychological resource that promotes personal growth and performance promotion (Luthans 2006).

Psychological capital is the power that is stored in the depths of our heart and never fails and is the driving force to realize the sustainable development of life. With regard to the structure of psychological capital, the structure of four factors is universally accepted internationally, that is, mental capital is a collection of self-efficacy, expectation, optimism and toughness, in which self-efficacy refers to the ability to integrate all resources in the face of challenging tasks, to motivate, to strive for resources, to be confident that you can make the most of the conditions and attain ultimate victory (Luthans *et al.* 2007) Expectation means not abandoning the goal, not giving up, facing difficulties and uncertain factors with a positive attitude, in order to achieve ultimate success while timely adjusting the method. Optimism refers to the enduring present and future successes, and to the cause of the ego, to the negative, the failure of things as temporary, and to the cause of the external environment. Toughness is the ability to persevere when faced with difficulties, to recover quickly from setbacks and blows, and to face them in a positive way. The psychological capital is based on individual innate traits, and is continuously improved with knowledge accumulation, skill upgrading and experience enrichment in the process of growth, and has profound influence on an individual's attitude, behavior and result of action.

Innovation performance is the output that the innovation main body obtains through a series of innovation activities (Pamela *et al.* 2002). The definition of innovation performance can be divided into a broad and narrow sense, and the broad sense of innovation performance covers the whole process from the generation of the innovation idea, the promotion of innovation idea and the final trend of economic benefit to the market. The narrow sense of innovation performance means that the creative body transforms the results to the extent of the new service. The performance of enterprise innovation is embodied by individual innovation behavior and innovation performance of employees (Robinson 1996). The knowledge Worker's innovation performance is the activity effect of the knowledge worker to create, promote and practice the innovative idea in order to promote the role, team and organization performance. The innovation performance of the knowledge-based staff is the core of the enterprise's innovation activity and effect, and is the source for the enterprise of acquiring sustainable competitive advantage.

Some scholars have studied and explained the relationship between psychological capital and innovation performance (Scott *et al.* 1994). Some scholars believe that psychological capital promotes employee innovation behavior by promoting the accumulation of human capital and stimulating the role of human capital in innovation (Spreitzer *et al.* 1997). Psychological capital has a positive effect on innovative behavior, at the same time, some scholars have tested the relationship between each dimension of psychological capital and innovation performance, which proves that there is a significant correlation between each dimension of mental capital and the dimension of Innovation performance.

Psychological capital and human knowledge, the mastery of skills and experience is closely related because the knowledge worker has more knowledge stock, the knowledge structure is also more perfect (Srivastava *et al.* 2006). Therefore, the knowledge worker's cognition level is higher, has sufficient understanding to the ego's innovation role and the organization goal and so on, the ego's value realization expectation degree is higher. Therefore, the mental capital of knowledge-based staff plays a more important role in their innovation Behavior and innovation performance, and the four dimensions of mental capital of knowledge workers can influence their innovation performance. The knowledge worker with high self-efficacy should be able to make full use of resources in the process of innovation. Integration of various favorable conditions, confidence in the success of the newspaper. The innovation process is full of uncertainty and even setbacks, high expectations by knowledge workers in the face of setbacks enable them not to forget the original intention, teeth insist, only do not give up to achieve the final results Optimistic knowledge workers as long as they are in the process of innovation to achieve a little success, they can always motivate themselves in front of victory, they do not give up; a tough-quality knowledge worker can quickly resolve negative emotions in the face of failure or confusion to find the right way to solve the problem. In a word, all the dimensions of mental capital are formed by the behavioral subject in the process of accumulation of learning and long-life experience. The mental capital of knowledge-based staff is more abundant, with stronger self-efficacy, higher expectation, optimism and perseverance, therefore, the mental capital of knowledge-based staff has positive influence on their innovation performance. Therefore, the first assumption of this study is:

H1: The mental capital of knowledge-based employees influences their innovation performance.

## 2.2 Mediating effects of the work effort

The theory of social cognition holds that individuals can be characterized by their own characteristics such as character, social role, etc. which cause or activate their own different environmental responses. Furthermore, behavior as the intermediary between people and the environment is the person to change the environment to adapt to the needs of people to achieve the purpose of survival and improve the relationship between human and environment means. And it is not only subject to human needs, but also subject to environmental conditions. The creation of innovation performance requires the individual to implement innovative behavior, and in the process of innovation to pay efforts, that is, work hard. Work is the environment, the individual and the results of the

media (Tierney *et al.* 1999).

The work effort is the behavior main body in the unit time to accomplish the task with energy, the motive is the effort antecedent, and the effort is the motive consequence. De Cooman *et al.* (2009) Define work effort as the behavior that can be measured as motivated by motives that are spent on certain tasks in a unit of time. Because knowledge workers have higher knowledge capital, they can integrate knowledge to solve problems and improve efficiency in the process of work. The knowledge workers work hard to be the foundation of their innovative performance (Hirst *et al.* 2009), mainly reflected in 3 aspects: first, the work effort reflects the behavior of individuals seeking new information, generating new ideas and proposing new methods in the face of difficulties and obstacles, and secondly, in order to clarify the nature of the problem, it is necessary to search extensively for information and explore new solutions to solve the problem, thus laying the foundation for creating innovative performance. Finally, even if you have new ideas, you need to work hard to perfect your innovative solutions.

The level of psychological capital has an impact on an individual's working effort. On the one hand, when the knowledge worker's psychological capital is relatively high, there is an appropriate estimate of the difficulty of innovative activities, and there is a certain expectation that they can achieve their own value through innovative behavior, and that they will not flinch from difficulties, that they should be calm, rationally analyze the current situation, earnestly search for valuable information and seek advantageous resources, Finally they propose the appropriate treatment plan; On the contrary, the staff with lower mental capital give up easily in the face of setbacks and difficulties. Therefore, employees with high mental capital pay more efforts than those with lower mental capital, and it is clear that employees with high mental capital are more likely to produce higher innovation performance (Gowing 2011). The knowledge worker has higher psychological capital compared with the general staff, to be able to focus on the resources required for innovation activities, potential difficulties, innovative risks and other serious analysis, and provide possible contingency plans, so as to ensure the success of innovation and actively prepare, through the process of innovation to truly devote more efforts to improve innovation performance.

Therefore, the second assumption of this study is:

H2: The work effort of knowledge workers plays a mediating role between psychological capital and innovation performance.

### 2.3 Regulatory role of authorized leadership

Authorized leadership is an important research field in leadership theory, and different scholars have carried out more in-depth research on authorized leadership, such as the measurement of authorized leadership (Arnold *et al.* 2000; amundsen & martinsen 2014), The main factors influencing authorized leadership include individual leader factors, organizational environment factors and employee factors (Liu, 2013), and the impact of delegated leadership on staff, team, etc. (CHEN c 2007; zhang *et al.* 2014; Mandy Chang 2009). On a personal level, scholars study more from the perspective of "relationship" or "Employee Motivation", focusing on the impact of delegated leadership on the behavior of employees, and the lack of a systematic review of delegated leadership as a regulatory variable. As far as the current research is concerned, the research on authorized leadership as the adjusting variable is not enough, leadership is an important variable in the enterprise, and it is also an important environmental factor that affects the behavior and performance of staff and team, so it is necessary to consider the effect of regulation. As an atmosphere of equal dialogue and authorization, authorized leadership, which can satisfy the need of knowledge-oriented employees ' relaxed environment, needs to be studied deeply in the role of mental capital of knowledge-based staff in influencing their innovative performance.

The implementation of the authoritative leadership style is influenced not only by the personal factors of the leader, but also by the factors of the staff (Hakimi *et al.* 2010), such as employee maturity and positive behavior, which will promote leadership empowerment. It is difficult to implement authorized leadership in the case of employee immaturity and negative behavior. Empowering leaders can enhance their self-efficacy and self-control, reduce or eliminate the perceived inability of the leader to work, and give the leadership a certain degree of autonomy in management activities (Ahearne *et al.* 2005). Authorized leadership is the leader who gives subordinates the authority and responsibility, allow subordinates to participate or exercise independent decision-making, and share information with subordinates, able to work on skills development or innovation activities to provide opportunities or guidance (Konczak *et al.* 2009). Domestic scholars such as Chini (2014) also believe that the purpose of the authorized leadership is to enhance the subordinates ' self-efficacy and self-control, by reducing or even eliminating the sense of weakness from the working state of the worker, and to give subordinates a certain degree of autonomy of the management activities, so that subordinates can conduct self-management or independent decision-making. Although these definitions differ, it is not difficult to see that almost all definitions involve sharing and stimulating the two key words, sharing the leadership power and stimulating the employee's intrinsic motivation.

Research shows that leadership is also an important organizational atmosphere and has an extremely

important impact on employee organizational commitment, creativity and working status (Dijke 2012;Gao *et al.*,2011;Iion *et al.* 2014), As a management atmosphere, authorized leadership also affects the relationship between mental capital and work effort as well as innovation behavior and performance of knowledge workers. The more authority a manager has, knowledge workers, because of their higher psychological capital and high cognitive level, will feel trusted, thus greatly stimulating their sense of responsibility and confidence in the organization, which leads to the increase of knowledge workers ' investment in the work. A high degree of awareness will make you feel restrained and criticized for failure. Even if successful, there will not be too much pride, because of lack of support, therefore, in this case, the knowledge-based staff will be idle into the work activities, that is, authorized leadership to adjust the knowledge of the psychological capital of employees and their efforts in the relationship between the work.

Therefore, the third assumption of this study is:

H3: Authorized leadership has a positive moderating effect on the relationship between mental capital and work effort of knowledge-oriented staff.

As mentioned above, leadership behavior is influenced by its personal characteristics, organizational atmosphere and employee behavior. When the knowledge worker can work hard, it will form a kind of good and positive organizational atmosphere in the organization, which is conducive to the realization of the organization goal and the high maturity of the knowledge worker and promote the further authorization of the leader. This kind of authorization has injected new vigor for the knowledge worker to promote innovation performance through working diligently.

Therefore, the fourth assumption of this study is:

H4: Authorized leadership has a positive moderating effect on the relationship between the work effort and innovation performance of knowledge workers.

In summary, the structural model of this study is shown in Fig. 1.

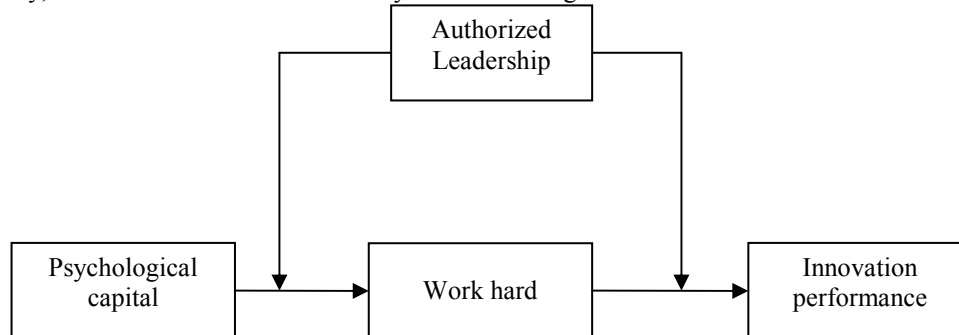


Fig. 1 Research Model Diagram

### 3. Research Design

#### 3.1 Sample selection and data collection

This paper selected more than 20 knowledge-oriented enterprises in the central region of China to distribute questionnaires, research enterprises involved in construction, medicine, transportation, education, information and other industries, had a strong representation. The object of investigation were the knowledge workers with higher education, in order to make the survey subject to meet the sample requirements of this study. In the interviews with Human Resources Management Departments, it was confirmed that the respondents mainly through the use of knowledge to work and for innovation. The questionnaire about the variables of authorized leadership, psychological capital and work effort is filled by the knowledge workers, while the evaluation of the knowledge Worker's innovation performance is filled by its direct supervisor, which can guarantee to control and reduce homologous deviation to some extent. We use the prior to the questionnaire number, the specific operation of the specific number of questionnaires assigned to the specific raters, so that the manager and subordinates match the questionnaire. 250 questionnaires were distributed in face-to-face form, 232 questionnaires were collected, and the recovery rate was 92.8%, after screening. 206 effective questionnaires and effective questionnaire rate were 88.8%. The effective questionnaire sample male accounted for 51.5%, the female accounted for 48.5%, all the respondents had received a university education. Specialized education accounted for 38.4%, those with undergraduate degrees occupied 57.1%, those with master's degree and above occupied 4.5%. The educational distribution and working status of the effective sample basically represent the general situation of the knowledge workers in the region and conform to the sample type required by the institute. In order to ensure the reliability of the sample data, the research also conducted a more in-depth interview on the problem of knowledge worker's innovation, in order to determine the reliable and usability of the sample data source.

### 3.2 Variable Measurement

The scale used in this research is a mature scale developed and used many times in the present literatures at home and abroad. After the translation and return to confirm the accuracy of the questionnaire, after many discussions to form a survey questionnaire, before the formal use and after the preliminary investigation and feedback after several revisions to improve, and finally confirmed that the questionnaire adopted a general Likert 5 scale form, 1 represents a total disagreement, and the 5 representatives fully agree.

Psychological capital is used by Luthans *et al.* (2006) developed 24 items scale, divided into self-efficacy, expectations, optimism and tenacity of four dimensions, each dimension has six items. Typical questions like: "I believe I can analyze the long-term problems, and find a solution", "I believe I can help set goals/objectives," "If I find myself in the middle of a difficult job, I can think of many ways to get out of it," "I can think of many ways to achieve my current work objectives," Because I have been through a lot of hardships before, so I can survive the difficult period of work, "When I work, I always believe that the dark behind is light, not pessimistic" and so on (1= completely disagree, 5 = fully agree). The Cronbach '  $\alpha$  of this scale is 0.938.

Innovative performance using the Tierney P *et al.* (1999) research and design of the 9 questions of the questionnaire, typical topics such as: "I take risks for new ideas in my work", "I find new uses for the methods and tools that are currently in use", "I have shown originality in my work", "I try to solve problems with new ideas and methods", "I am a creative good example" (1= completely disagree, 5 = fully agree). The Cronbach '  $\alpha$  of this scale is 0.743.

The authorized leader's measurement adopts the scale of Ahearne(2005), which includes improving the meaning of work, increasing participation in decision making, expressing self-confidence of high performance, weakening the discipline system constraint four dimensions, 3 questions per dimension, and 12 questions. Typical topics for each dimension are: "My supervisor helps me understand the relevance of my goals to the goals of my team", "My supervisor often lets me take part in making decisions, "My supervisor fully believes I can do the job well "(1 = completely disagree, 5 = fully agree). The Cronbach'  $\alpha$  of this scale is 0.910.

The work effort adopts the Cooman (2009) development of 10 items scale. Typical questions like: "When the task is not progressing smoothly, I will not immediately give up", no matter how many difficulties, I will try my best to finish my work, "I try my best to do what I want to do", "I devote a lot of energy to the task I am working on", "I try my best in my work" (1 = completely disagree, 5 = full consent). The Cronbach '  $\alpha$  of this scale is 0.884.

Because some individual attributes and team characteristics have an impact on the knowledge worker's creativity, this study chooses to control gender, age, education and team size.

## 4. Data Analysis Results

### 4.1 Reliability and validity test and correlation analysis

In order to verify the validity of the questionnaire, the paper uses the SPSS19.0 software to test the reliability of each scale by using the Cronbach '  $\alpha$  coefficient as the main index, and the results show that each scale has good reliability (as shown in Table 5.1). It can be seen from the table that the Cronbach '  $\alpha$  coefficients of all variables are greater than 0.7, which indicates that the correlation degree between the items in the scale is higher, and after the single item is deleted, the Cronbach's  $\alpha$  coefficient of the scale decreases. At the same time, the combination reliability of C.R value verification scale is used in this study, as shown in table 1, the combination reliability of all scales is greater than 0.7, which shows that the reliability of the present scale is good.

Table 1 Reliability test of the scale

Variable name	Cronbach' s $\alpha$ coefficient	C.R value
Psychological capital	0.938	0.960
Work hard	0.884	0.756
Innovation performance	0.743	0.887
Authorized Leadership	0.910	0.908

In this study, the AMOS7.0 software was used to analyze each latent variable, and then the correlation analysis and linear regression analysis were performed with SPSS19.0, and the foregoing hypotheses were tested. Descriptive statistics and correlation analysis of variables in this study are shown in table 2.

It can be seen from the results in table 2 that there is significant positive correlation between innovation performance and mental Capital ( $\beta=0.652$ ,  $p<0.01$ ), mental capital is positively correlated with work effort ( $\beta=0.656$ ,  $p<0.01$ ), and work effort is positively correlated with innovation performance ( $\beta=0.741$ ,  $p<0.01$ ), The square root of Ave is greater than all the correlation coefficients in the correlation coefficient matrix, therefore, the scale has good discriminant validity. From the analysis of the related data of table 2, we can see that all the variables have positive correlation and discriminant validity, so the sample data meet the requirements and can be further analyzed.

Table 2 correlation, mean value, standard deviation, and discriminant validity

	M	SD	1	2	3	4
Psychological capital	4.061	.564	(0.925)			
Work hard	4.044	.720	.656**	(0.716)		
Innovation performance	3.654	.693	.652**	.741**	(0.784)	
Authorized Leadership	3.721	.799	.468**	.332**	.496**	(0.676)

Note: \* \* Represents a significant level of  $p < 0.01$ ; the square root of Ave in parentheses.

#### 4.2 Hypothesis test results

In order to further verify the hypothesis, this study adopts the method of multi-level linear regression to test the mediating effect of work effort. The test results are shown in table 3. The first is to work hard for the dependent variables, the psychological capital is returned by the independent variable, and the result shows that the psychological capital has a significant influence on the work effort ( $B=0.851$ ,  $P < 0.001$ ), the Model 2, 3 and 4 take the innovation performance as the dependent variable, and take the psychological capital and work effort as the independent variable to carry on the multi-level linear regression to the innovation performance. From the Model 3 in table 3, the psychological capital has significant positive influence on the innovation Performance ( $\beta=0.825$ ,  $p < 0.001$ ), so H1 is proved. In Model 4, after joining the work effort, the regression coefficient of psychological capital to innovation performance decreased from 0.825 to 0.360, and p value was less than 0.001, therefore, H2 obtained the proof, that is, the work effort plays a part mediating role between mental capital and achievement.

Table 3 Results of mediating effect of work effort

Dependent variables	Work hard		Innovation performance	
	Model 1	Model 2	Model 3	Model 4
Control variables				
Gender	-0.017	0.157*	0.142	0.151*
Degree 1	0.241	-0.347*	-0.173	-0.305
Degree 2	0.329	-0.303	0.037	-0.217
Degree 3	0.318	-0.321	0.068	-0.242
Length1	-0.082	0.149	0.110	0.155
Length 2	-0.013	0.022	0.018	0.025
Length 3	-0.148	0.083	0.027	0.054
Number of teams 1	-0.236	0.224*	0.041	0.170
Number of teams 2	-0.055	0.043	0.041	0.077
Number of teams 3	-0.141	0.036	0.044	0.032
Independent variables				
Psychological capital	0.851***		0.825***	0.360***
Work hard		0.731***		0.547***
R <sup>2</sup>	0.460	0.579	0.450	0.624
Adjustment R2	0.429	0.555	0.419	0.601
F Value	15.005***	24.212***	14.420***	26.703***
D-W	1.954	1.711	1.809	1.710

Note: \* Represents a significant level of  $p < 0.05$ , \*\* representing a significant level of  $p < 0.01$ , \*\*\* representing a significant level of  $p < 0.001$ .

Taking the work effort as the dependent variable, the psychological capital, the authorized leader and the product item as the independent variable, carries on the multi-level linear regression, obtains the result as shown in table 4 below. The regression coefficients of the product items in Model 3 of table 4 are significant ( $\beta=0.151$ ,  $p < 0.05$ ), therefore, the first stage moderating effect of authorized leadership exists, namely H3.

Table 4 Authorized leadership the first stage of the adjustment test results

	Model 1	Model 2	Model 3
Control variables			
Gender	-0.017	-0.022	-0.007
Degree 1	0.241	0.255	0.227
Degree 2	0.329	0.345	0.318
Degree 3	0.318	0.306	0.293
Length1	-0.082	-0.085	-0.084
Length 2	-0.013	0.003	0.001
Length 3	-0.148	-0.156	-0.158
Number of teams 1	-0.236	-0.250	-0.262*
Number of teams 2	-0.055	0.086	-0.081
Number of teams 3	0.141	-0.171	0.151
Independent variables			
Psychological capital	0.851***	0.804***	0.330
Authorized Leadership		0.066	-0.555*
Psychological Capital * Authorized leadership			0.151*
R <sup>2</sup>	0.460	0.463	0.481
Adjustment R2	0.429	0.430	0.446
ΔR <sup>2</sup>		0.004	0.018
F Value	15.005***	13.887***	13.703***
D-W Value	1.954	1.942	1.995

Note: \* Represents a significant level of  $p < 0.05$ , \*\* representing a significant level of  $p < 0.01$ , \*\*\* representing a significant level of  $p < 0.001$ .

To validate H4, the results of the work effort, authorized leadership, and product items of the two variables (work hard \* authorized leadership) are returned to the innovation performance, as shown in table 5. By Model 3, the second stage of the regulatory role of authorized leadership is significant ( $\beta = 0.109$ ,  $p < 0.05$ ). Therefore, H4 is validated.

Table 5 Authorized Leadership second Stage Regulation inspection

	Model 1	Model 2	Model 3
Control variables			
Gender	0.157*	0.138*	0.144*
Degree 1	-0.347*	-0.269	-0.301
Degree 2	-0.303	-0.197	-0.234
Degree 3	-0.321	-0.324	-0.347
Length1	0.149	0.140	0.148
Length 2	0.022	0.081	0.079
Length 3	0.086	0.040	0.038
Number of teams 1	0.224	0.139	0.136
Number of teams 2	0.043	-0.063	-0.056
Number of teams 3	0.036	-0.084	-0.071
Independent variables			
Work hard	0.731**	0.625***	0.246
Authorized Leadership		0.250***	-0.198
Work hard * Authorized Leadership			0.109*
R <sup>2</sup>	0.579	0.643	0.651
Adjustment R2	0.555	0.621	0.628
ΔR <sup>2</sup>		0.065	0.008
F Value	24.212***	28.982***	27.572***
D-W Value	1.711	1.811	1.805

Note: \* Represents a significant level of  $p < 0.05$ ; \*\* represents a significant level of  $p < 0.01$ ; \*\*\* represents a significant level of  $p < 0.001$

## 5. Conclusion and discussion

### 5.1 Research Conclusions

Through theoretical analysis and empirical test, this study explores the intrinsic mechanism of the mental capital of Knowledge-based employees, which influences their innovation performance through work effort, and the

moderating effect of authorized leaders in their relationship, the conclusions mainly include the following points: First, the mental capital of Knowledge-based employees has a significant positive effect on innovation performance. Psychological capital plays an important role in the process of innovation of knowledge worker, because knowledge worker has good knowledge background, high level of cognition and strong desire of self-realization, this higher mental capital occupies an important position in individual behavior. Therefore, knowledge workers have more positive and positive psychological qualities, with high innovative expectations of work, and the ability to design work plans and innovative solutions in advance, not to panic in the face of the obstacles in the process of innovation, but will be calm, optimistic treatment, and can comprehensively utilize all kinds of favorable conditions, and ultimately achieve innovative performance.

Secondly, the work effort of knowledge worker plays an intermediary role between psychological capital and innovation performance. Because the knowledge staff with higher psychological capital have strong perception to self work and innovation ability, at the same time, can master more sufficient knowledge and information, have better action plan, so have high expectation to the innovation performance, and also have certain forecast to the difficulty in the innovation process. Therefore, Knowledge-based employees in the process of innovation can actively work hard, put more energy, face the possible difficulties and problems do not give up, but stick to insist, put more efforts to work. This effort can let the knowledge staff adhere to the end, until the success of innovation, thereby improving innovation performance.

Third, authorized leadership is to regulate the relationship between the mental capital of knowledge-based employees and their work effort. The mental capital of knowledge-based staff is higher than that of ordinary employees; they have a rich knowledge background and strong cognitive ability. Therefore, their self-worth to achieve high expectations, but the work of the situation is also affected by the internal atmosphere, if the atmosphere can not provide them with the opportunity to exert themselves, can not let them perceive their own importance, it is often difficult to inspire the work enthusiasm of the knowledge worker. In an authorized leadership environment, leaders can through the transfer and indoctrination of work meaning, information analysis, decision-making participation, high performance confidence and the reduction of hierarchical barriers and even break, so that the degree of freedom of knowledge workers are limited, so that the knowledge of psychological capital to stimulate the role of the work force, so It makes the knowledge staff dare to search for innovative methods and ideas, so as to promote the influence of mental capital of knowledge-based staff on work effort more effectively.

Finally, authorized leadership is to adjust the relationship between the work effort of the knowledge worker and its innovation performance. Whether a leader is authorized depends on a variety of factors, when the leadership according to the knowledge of staff characteristics and requirements of the authorization, promotes the psychological capital of knowledge-based staff to work hard, the direct performance of the knowledge workers work harder, in this case, means that the authorized leadership is effective, which also further enhances the confidence of leadership authorization. The Leadership empowerment process will give more support to the knowledge workers, so that they can better identify the focus of the innovation process more focused on efficiency, so that the knowledge of staff work hard to produce better innovation performance, therefore, Authorized leadership can adjust the relationship between knowledge Worker's work effort and innovation performance in the second stage.

### *5.2 Theory innovation and management revelation*

This study explores the intrinsic mechanism of the impact of mental capital of knowledge-based employees on their innovative performance through work, and the role of delegated leadership as a regulatory variable to achieve the management atmosphere, which is also an important theoretical innovation. At present, there are many researches on authorized leadership as independent variables, but the influence of mediating variables and regulating variables is relatively few, while the two-stage regulation variable is rarer. Through this study, it can be found that authorized leadership, as an organizational atmosphere, can really exert influence on the behavior of knowledge workers, and this kind of atmosphere and employee's working status also interact with each other. After the leadership's proper authorization, the knowledge Worker's performance can let the leadership trust, then the leadership further authorizes the willingness also to be more intense, thus causes the knowledge staff's enthusiasm to be higher, achieves a benign interaction result. In view of the above conclusions, leaders in management practice can improve the innovative performance of knowledge workers by doing the following tasks:

The first is to give full play to the knowledge-oriented staff in the enterprise innovation performance of the important role. Knowledge workers have more knowledge, experience and skills, and their self-worth needs are strong, psychological capital is not only relatively high, but also determines the behavior of knowledge workers to a large extent. Therefore, by enhancing the mental capital of knowledge-oriented employees to improve their work effort, especially through training, motivating and other human resource development means, the enterprise can improve the sense of self-efficacy of knowledge workers, improve their self-confidence, form optimistic



attitude and indomitable character, thus forming a lasting and effective psychological mechanism. To promote knowledge workers to improve the output of innovative performance through working hard.

Second, the enterprise managers should be properly authorized, in the management through communication transfer knowledge worker the work significance and the value, the promotion knowledge staff participates in the decision-making and the information sharing, expresses to the knowledge staff high performance confidence, but also must positively break down the management and the staff communication level system obstacle, causes the knowledge worker to perceive oneself to be trusted, Have a higher passion and motivation for work, so as to actively adjust and enhance the psychological capital of knowledge workers to promote their work efforts, so that the knowledge workers work harder, in this case, the leadership authorization is effective, therefore, the leadership should be more authorized to give the knowledge of staff with more support, Encourage them to continuously improve their innovation performance.

### 5.3 Shortage and Prospect

There are some deficiencies in this study. On the one hand, the different dimensions of psychological capital for knowledge workers working hard, no in-depth analysis on the status of the state mechanism. On the other hand, there is still lack of further research on the interaction and internal mechanism between authorized leadership and psychological capital knowledge staff.

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