
Research on High Performance Work Systematic Influences on Employees Work Behaviour in Environmental Company

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Abstract

The rise of the environmental company has made knowledge workers more and more important in contemporary organizations. In the contemporary era, establishing the innovation-oriented country is vigorously advocated, which makes more people try the best to exert innovative capabilities for this goal, and therefore how to improve employee's innovation performance in the environmental company has gained more and more attentions. Staff's innovation performance is the source of organizational innovation, which is vital to organization's sustainable competitive advantage. Meanwhile, the innovation performance is affected by many factors, for example, the high-performance work system can make a great influence on it. However, in the past study, the relationship between the employee work behavior and the high performance work systematic influence in the environmental company is not figured out, and the mechanism of action is also not clear. In this study, the high performance work system would be used as the antecedent variable to explore its relationship with the employee innovation performance, and the relationship between the employees' psychological capital and the employee's innovation performance in the environmental company from the perspective of psychological capital is explored, where the employee psychological capital is considered as intermediary variables.

Keywords: high performance work system, psychological capital, innovation performance, knowledge-based worker, environmental company

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INTRODUCTION

With the advent of the knowledge economy era, a large number of knowledge-based enterprises have arisen. With the adjustment of China's economic and industrial structure, the proportion of the tertiary industry has been increasing year by year (Tseng 2010). Under this background, the proportion of knowledge-based workers in the enterprises has been on the rise, whose position in the enterprise has become increasingly important. Time and efficiency is the theme of current era when innovation is urgently needed, where the establishment of an "innovation-oriented nation" is strongly advocated. To this end, China devotes to change from the "big manufacturing power" to the "big creative power", where more and more innovative talents will be required to play their role. As the main body of technological innovation and management innovation, enterprises have an important mission in the country's economic restructuring and development (Simsek et al. 2009). As the pillar of the enterprise, knowledge-based employees is the source of innovation, to promote the process of enterprise's

innovation, and knowledge-based staff's innovation ability is also the core competitiveness of enterprises. In the era of vigorously promoting innovation and fierce competition, enterprises must rely on the innovation ability of knowledge-based staff in order to obtain an endless stream of motivation for sustainable development. It is precisely because that the team and organizational innovation performance depends on the individual innovation, the knowledge-based worker individual innovation performance should be the focus of business development (Chenhall 2003).

The way to improve employee's performance has always been a top concern for businesses. Through the review of the literature, it is found that most of the performance studies about enterprise's innovation are focused on the organizational level or the team level, and there are relatively few studies on individual performance. As part of organizational performance, innovation performance is very important, and the way to effectively improve the innovative performance of enterprises will become an important business-shaped way to keep sustainable competitiveness (Akhavan et al.

2006). There are many antecedents making influence on individual performance, and this research will cut through the organizational level to explore the impact of high performance work system on the innovation performance of knowledge workers.

The research on the relationship between high performance work system and organizational performance has been an important topic in the field of human resources management, industrial relations and organizational psychology for more than two decades (Möller and Rajala 2007). HPWS (High performance work system) has a significant impact on employee performance, which is validated by numerous empirical studies. However, some scholars even skeptically oppose this attitude (Thomas and Trevino 1993), from which it can be seen that the relationship between HPWS and employee performance may not be a straightforward linear relationship, and there seems to be other relationships between two variables. Therefore, the influence mechanism of HPWS's work performance on employees is still a black box. In recent years, there are many scholars on the high-performance work system try to find the intermediate variables, and many scholars think that there are some mediating variables or adjusting variables that can make influence in the process of the high performance work system's impact on performance, and some scholars have carried out the corresponding mechanism research (Hardy et al. 2003).

In the past, the research on innovation performance mainly focused on the team innovation performance and the organizational innovation performance, and there are few research paying attention to the individual performance innovation (Naini et al. 2011). From the individual level, it can be found that the innovation performance can reveal the influencing factors and the path of the enterprise's innovation performance. Based on the aforementioned research background, this study would explore the impact mechanism of HPWS on individual innovation performance to reveal the specific path of action between HPWS and individual innovation performance. In theory, this study can enrich HPWS research on the mechanism of performance impact, enrich the research of psychological capital theory and enrich the research of individual innovation performance. In practice, the intermediary role of psychological capital can be explored in this study, which can make the enterprise practitioners figure out the relationship between psychological capital and high-performance work

system, and the relationship between psychological capital and employee innovation performance.

Based on the aforementioned research target, the significance of this study can be divided into two aspects: on the one hand, it enables managers to value the construction of high-performance work systems, to design more suitable human resource management practices and combinations based on the characteristics of knowledge workers, which can inspire employees' intrinsic motivation and make employees develop well in knowledge and skills, so that they are willing to put their ability into the work content of employees to bring more performance to the organization; on the other hand, this study can help managers pay attention to develop the psychological capital of employees, understand the importance of psychological capital at individual level, cultivate the positive psychology of employees and improve employees' psychological capital so that employees can improve their performance in practical works. In addition, recognizing the influence mechanism of psychological capital between HPWS and employee's innovation performance can guide the improvement of organization's performance to a certain extent, so as to create more benefits for the enterprise and make the enterprise keep an invincible position in market competition.

THEORETICAL RESEARCH FRAMEWORK AND RESEARCH HYPOTHESIS

By reviewing most of the empirical studies on the relationship between HPWS and performance at home and abroad, it can be concluded that HPWS has a significant positive impact on organizational performance. In practical application, a large-scale power enterprise in southern China once introduced HPWS into its specific management practice in 2002. Through a series of innovative management practices (such as strategic restructuring, building a good human resources team and efficient performance appraisal system, etc.), the annual power generation capacity of enterprises increased by 18.6%, and the main business income increased by 21.3%, which proves that HPWS can truly bring performance improvement to the organization.

The outcome variable selected in this study is the individual innovation performance of knowledge workers. It is found through literature research at home and abroad that there is relatively little research on the individual performance in high performance work system. For an organization, the creation of an

innovative product or technology is inextricably linked to the creative ability of the employee. However, innovation means that enterprises need to face many unknown uncertainties. Therefore, enterprises need innovative talents who can take risks, tolerate uncertainties and be flexible. Therefore, in the process of recruitment and selection, innovative capacity is a measure index to ensure that enterprises can recruit innovative talent suitable for business.

The Relationship between High Performance Work System and Psychological Capital

Since the concept of high performance work system has been proposed, it has become a hot spot in academic research. Most of these focus on the organization and individual output generated by HPWS. The research on the outcome variables of HPWS is very extensive. From the organizational level to the individual level, a large number of empirical studies confirm that the high-performance work system can bring about a series of positive changes for the organization.

Through a three-year longitudinal study, Mohr and Zoghi pointed out that high-performing human resource practices give employees a wide range of opportunities to participate through a series of hands-on activities such as quality circles, feedback, suggestions, task forces and so on, which can enable employees to fully experience the valued intrinsic feelings, and this kind of psychological perception is a high level of salary and benefits. Therefore, building a high-performance human resources practice is conducive to inspiring the positive psychological state of employees, effectively improving work motivation and bringing more benefits to the organization.

Evans and Davis pointed out that in the model of the relationship between high performance HR practices and business performance, the high performance HR practices reinforce the building of a shared mindset and a positive atmosphere for communication that promotes mutual trust and coordination among members through the sharing of a common vision. As a result, changing employee awareness and attitude has a positive impact on the psychological status of employees to a certain extent.

There is no doubt that the organizational environment in which employees work can have a huge impact on employees. As an important part of the organizational environment-human resources management system, of which impact on employees cannot be ignored. In this study, the organization's human resource management systems (especially high-

performance work system) is deemed to have a certain positive impact on employees' mental state, which can increase employees' psychological capital and can make employees happier, more motivated, more able to withstand setbacks and more easily bring high performance to the organization.

To sum up, high performance work system will have some positive impact on employees' psychological capital. Accordingly, this research proposed the following assumptions:

- H2:** HPWS has a significant positive impact on knowledge workers' psychological capital.
- H2-1:** HPWS has a significant positive impact on the aggressive dimensions of knowledge workers' psychological capital.
- H2-2:** HPWS has a significant positive impact on the tenacious and tenacious dimensions of knowledge workers' psychological capital.
- H2-3:** HPWS has a significant positive impact on the optimistic hope dimension of knowledge workers' psychological capital.
- H2-4:** HPWS has a significant positive impact on the self-confident and brave dimensions of knowledge workers' psychological capital.

The Relationship between Psychological Capital and Innovation Performance

The empirical study of psychological capital on performance is relatively more, and psychological capital is also recognized by many scholars as a variable that can have a significant impact on performance.

Geraldi found that the level of hope of managers and employees is positively correlated with their job performance, job satisfaction, well-being, and organizational commitment (Geraldi 2008). Based on a sample of 422 Chinese employees, Otero-Neira et al. found that the overall level of psychological capital of employees and their components (hope, optimism, resilience) were positively correlated with his work performance evaluation results (boss's assessment) (Otero-Neira et al. 2009), and the impact of overall mental capital on employee job performance is stronger than the individual psychological capital factor. American Gallup Institute conducted a comparative study on the performance of employees before and after the training of employees 'psychological capital in 2006 and found that there was a positive correlation between the psychological capital and employee performance.

The level of employees' psychological capital after training was significantly improved.

This study focuses on the innovation performance of knowledge workers, as a part of job performance, this study thinks it will be affected to a certain extent by psychological capital. According to the above analysis, put forward the following assumptions:

- H3:** Psychological capital can positively impact innovation performance;
- H3-1:** The aggressive dimensions of psychological capital have a significant positive impact on innovation performance;
- H3-2:** The tough, tenacious dimension of mental capital has a significant positive effect on innovation performance;
- H3-3:** Optimistic Psychic Capital The Hope Dimension has a significant positive impact on innovation performance;
- H3-4:** Confidence and Bravery Dimensions of Psychological Capital have a significant positive impact on innovation performance.

Psychological capital intermediary Role

Although the conclusion that the relationship between HPWS and performance is significantly positive is validated by many empirical studies, some scholars think that the relationship between the two is insignificant. Christensen and Bower (1996) used the National Bureau of Statistics survey The data obtained over a period of 20 years (1977-1996), using time series analysis to test the effectiveness of HPWS, showed that HPWS had no effect on the overall labor productivity as measured by the firm's unit labor costs.

These questions make most scholars think that the relationship between HPWS and performance is not a direct linear relationship, there is a "black box" in the middle. This also led to the study of the mechanism of action between HPWS and performance in recent years. Through the retrieval of the previous literature, we can find that some scholars have made some exploration on the mechanism between high performance work system and performance. The research paradigms are mainly mediation effect and adjustment utility paradigm. This study argues that psychological capital plays a certain intermediary role among them. From the perspective of resource-based, HPWS will bring a certain degree of psychological capital to employees, this effect is positive, and psychological capital can have an impact on

employee's innovation performance. Resource-based theory (RBV) explains the source of sustainable competitiveness of enterprises from the internal level of enterprises, that is, the internal HRM system of an enterprise. From an RBV perspective, HPWS can be regarded as an important factor affecting the sustainable competitiveness of enterprises. A good HPWS is a heterogeneous, non-replicable, inflexible and valuable scarce organizational resource. In an organization with HPWS, these resources can have a significant impact on employees' psychological capital, as discussed earlier, and increased mental capital can significantly affect employee performance. This chain of reactions can be high-performing Ways in which work systems influence employee innovation performance. Therefore, this study argues that employees' psychological capital plays an intermediary role in the path of HPWS's impact on individual performance.

Accordingly, this research proposed the following assumptions:

- H4:** Psychological capital plays an intermediary role in the impact of high-performance work systems on employee innovation performance.
- H4-1:** The aggressive dimensions of mental capital play an intermediary role in the impact of HPWS on individual innovation performance.
- H4-2:** The tough, tenacious dimension of mental capital plays an intermediary role in the impact of HPWS on individual innovation performance.
- H4-3:** The optimistic hope dimension of psychological capital plays an intermediary role in the impact of HPWS on individual innovation performance.
- H4-4:** Confidence and Bravery Dimensions of Psychological Capital Play an intermediary role in the impact of HPWS on individual innovation performance.

Theoretical Models and Research Assumptions

In this study, the HPWS is used as the antecedent variable, the innovation performance of knowledge workers is used as the outcome variable, and the psychological capital is considered as the mediating variable to build the model of this study. HPWS includes eight dimensions: rigorous selection, extensive training, communication and sharing, work team,

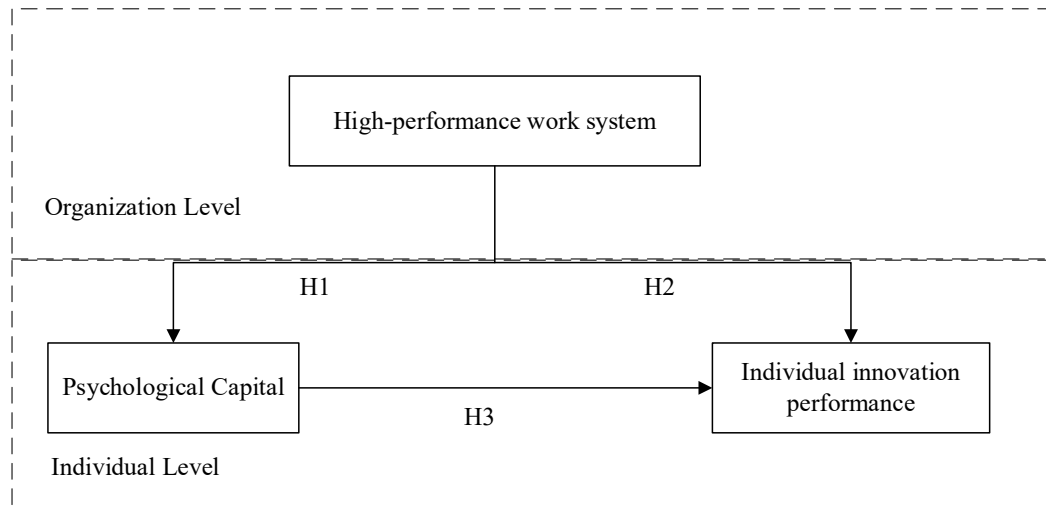


Fig. 1. Theory Hypothesis Model

employment safety, result evaluation, contingent compensation and employee benefits. Psychological capital contains four dimensions: confident and courageous, optimistic, progressive and tenacious.

According to the above theoretical derivation process, the hypothesis of the relationship among the three can be drawn, HPWS has a significant positive impact on individual innovation performance (H1), HPWS has a significant positive impact on psychological capital (H2), and HPWS (H2-1, H2-2, H2-3, H2-4). Psychological capital has a significant positive impact on individual innovation performance (H3), and each dimension of psychological capital has significant effect on individual innovation performance Positive impact (H3-1, H3-2, H3-3, H3-4), psychological capital plays an intermediary role in the impact of HPWS on individual innovation performance (H4), the dimensions of psychological capital are in HPWS individual The impact of innovation performance plays an intermediary role (H4-1, H4-2, H4-3, H4-4). The specific assumptions model is shown in **Fig. 1**.

RESEARCH DESIGN AND DATA ANALYSIS

This study mainly explores the impact mechanism between HPWS and individual innovation performance, based on the research methods of combining theory with practice. Based on the review and analysis of a large number of related literatures, the theoretical derivation and research hypotheses are completed to extract the questionnaire, and then the knowledge-based employees of the enterprise are considered to be the research object to test the initial questionnaire. The results of pretest data analysis and

initial questionnaire are revised to obtain formal questionnaire, on this basis, a formal investigation is conducted finally. Relevant statistical analysis is conducted on the formal research data to verify the relationship between HPWS, psychological capital and innovation performance. The purpose of data analysis in empirical research is to further quantitatively analyze HPWS and innovation performance, which is used to test or correct the assumptions made in this paper.

High Performance Work System Scale Selection in Environmental Company

In this study, the high performance work system in environmental company scale is designed as **Table 1** shows. The scale measures enterprise HPWS with 29 human resources practice programs. HR practices fall into eight areas: results assessment, extensive training, communication and sharing, employee benefits, work teams, employment security, contingent pay and rigorous selection. In this study, respondents according to the actual situation of their company, the questionnaire on the human resource practice of each project description of the actual situation to the extent of the company, using Liket 5 point scale method, from 1 (strongly disagree) to 5 (strongly agree) five levels to judge.

Table 1. High Performance Work System Scale

Variable	Dimension	Item	
High-performance work system (A)	Results assessment (A1)	A11 company has standardized employee performance appraisal and performance management approach	
		A12 company at least once a year for all staff of the official performance appraisal	
		A13 Company Introduces Goal Management and Key Performance Indicators (KPIs) to Conduct Performance Appraisal	
		A14 staff performance appraisal based on quantitative and objective criteria	
	Extensive training (A2)	A21 company attaches great importance to staff job skills training	
		A22 provides a wide range of training courses for its staff	
		A23 To meet the needs of different employees, the company will provide targeted training	
		A24 companies attach importance to new staff pre-job training	
	Employee Benefits (A3)	A31 Management Meet Regular Meetings (or Have Informal Activities) to Facilitate Communication	
		A32 companies have formal complaints and appeals procedures	
		A33 Employees' opinions on the company's construction can be smoothly reflected upward	
		A34 Company information can be widely shared, and every employee can get the letter they need when they need it	
	Communicate and share (A4)	A41 company's Welfare Policy provides employees with better benefits (such as paid holidays, organized vacation travel)	
		A42 companies can maintain sustained and steady employee benefits	
		A43 Company sponsors staff outside activities (dinners, team events, contests, etc.)	
		A44 Companies invest significant cost in their living facilities	
Team (A5)	Employment safety (A6)	A51 Employee Individual Performance Linked to Team Performance	
		A52 encourages employees to work in a team rather than on their own	
		A53 attaches great importance to the team performance appraisal	
	Contingency change (A7)	A61 If the company encounters financial difficulties, layoffs are the last resort	
		A62 companies generally do not easily dismiss employees	
		A63 How long to wait if employees are willing to work in the company	
	Strict selection (A8)	A64 companies are willing to sign long-term labor contracts with employees	
		A71 companies take flexible and rewarding ways to retain outstanding employees (such as home purchase allowances, additional insurance, profit sharing, stock options, etc.)	
		A72 uses incentives based on performance that widen the bonuses gap	
			A73 The performance of employees is an important basis for determining their salary or bonus
			A81 job seekers hiring through the company is not easy
			A82 company recruitment, widely used interview, psychological testing, proficiency testing and other evaluation techniques
		A83 Job recruitment decisions generally require the participation of multiple departments	

Table 2. Psychological capital scale

Variable	Dimension	Item
Psychological capital scale (B)	Endeavor (B1)	B11 I like to constantly set higher goals for myself
		B12 I am an ambitious person
		B13 Every day I think about how to do a better job
		B14 I hope to undertake the challenging task
		B15 My friend said I am an aspiring person
	Tough tenacious (B2)	B21 I am a man who will not give up in the end
		B22 Even if work is bitter and tired, I believe I can survive
		B23 The more we are in trouble, the stronger I am
		B24 I am definitely a hardworking person
		B25 Even in hell, I'm thinking about turning it into paradise
	Optimistic hope (B3)	B31 I can see everything, almost every day is a happy heart
		B32 happened an unpleasant thing, I soon be able to adjust their emotions
		B33 I feel optimistic about myself, with almost no frustration
		B34 I always think in the right direction for the inconclusive result
		B35 I often feel unlucky (*)
Confident and brave (B4)	B41 I believe I can do my job	
	B42 I am full of confidence in my ability to work	
	B43 I believe I have the ability to complete the task entrusted by the leadership	
	B44 I often have a sense of inferiority, I feel less able to work (*)	
	B45 I have the courage to put forward my own opinion	

Psychological Capital Scale Selection in Environmental Company

Psychological capital scale is also based on the Chinese context of the localization of the scale, based on the overseas maturity scale adaptation and supplement of Chinese (Möller and Svahn 2006). This study uses the psychology capital scale transactional psychology Capital Scale, contains a total of four dimensions: confident and courageous, optimistic hope, ambitious and tenacity tenacious, see **Table 2**. In order to ensure that the respondents fill in the validity of the questionnaire, we set two reverse questions B35 and B44 as one of the bases for rejecting the invalid questionnaire. Similarly, the scale also uses liket 5-point scale measurement.

Measurement of Innovation Performance in in Environmental Company

Based on the previous studies, McCutcheon and Meredith (1993) put forward a Chinese-based scale of innovation performance in in environmental company and built 8 The item of innovative performance evaluation scale, shown in **Table 3**. The scale is widely used in the domestic research, and the reliability and validity are good. The scale also uses liket 5 point scale measurement.

Table 3. Innovation Performance Scale

Variable	Item	
Innovative performance (C)	Innovative will (C1)	C11 I provide new ideas to improve the current situation
		C12 I actively support innovative ideas
		C13 I am learning to find new ways of working, skills or tools to innovate
	Innovative results (C2)	C21 I've been superbly acclaimed for my innovative ideas
		C22 I have turned innovative ideas into practical applications
	Innovative behavior (C3)	C23 Through my studies, I have come up with some original solution to the problem
C31 I can introduce innovative ideas in a systematic way		
		C32 I can focus on innovative thinking in key corporate members

Table 4. Pre-test sample survey (N = 64)

	Project	Frequency	Percentage	Cumulative Percentage
Gender	Male	35	54.7	54.7
	Female	29	45.3	100
Age	20 ~ 29 years old	28	43.8	43.8
	30 ~ 39 years old	25	39.1	82.8
	40 ~ 49 years old	10	15.6	98.4
	Over 50 years old	1	1.6	100.0
Education Level	Education below College	1	1.6	1.6
	College	20	31.3	32.8
	Undergraduate	30	46.9	79.7
	master's degree	13	20.3	100.0
Position	General staff	23	35.9	35.9
	Grassroots managers	19	29.7	65.6
	Middle managers	13	20.3	85.9
	Top management	9	14.1	100.0
Years of Service	Working years 2 to 5 years	12	18.7	18.7
	5 to 10 years	37	57.8	76.5
	10 years or more	15	23.5	100.0

Questionnaire Scale Pre-test in Environmental Company

Before the formal questionnaire survey, a small sample pre-test is required, on the basis of which, the initial questionnaire is revised and perfected to ensure its reliability and validity. Small sample pre-test issued a total of 100 pre-test questionnaire, issued to the X University MBA students and EMBA students, in advance of the respondent units lock, are large Fortune 500 companies, through interviews that its internal HRM meets all of the HPWS criteria.

A total of 76 questionnaires were collected, excluding 64 incomplete questionnaires filled in with incomplete answers. Statistical software SPSS19.0 was used to analyze the questionnaire data to determine and correct the scale of the initial questionnaire to form a formal questionnaire. The sample of pre-test survey is shown in **Table 4**.

Questionnaire correction in Environmental Company

The scales used in this paper are localized scales, all based on the overseas mature scale for adaptation of China, confirmed by the study has a high reliability and reliability. This study uses project analysis and factor analysis to analyze the reliability and validity of the scale.

The reliability of the HPWS scale was analyzed by SPSS 19.0 software. The overall reliability of the scale is shown in **Table 5**. The Cronbach's α of the total scale is 0.942, which is greater than 0.8, indicating that the scale has a high overall consistency. The reliability

analysis of individual items is based on the CITC value of the correlation coefficient between each item's score and the remaining item's score. CITC analysis of the standard to delete unqualified items is:

Table 5. Reliability Test of HPWS Scale (N = 64)

Item	Item deleted Degree mean	Item deleted Degree of variance value	Total corrected items correlation	The Cronbach's α value deleted	The Cronbach's α value
A11	102.0000	215.175	.505	.940	.942
A12	101.8125	217.425	.482	.941	
A13	102.0781	211.121	.647	.939	
A14	101.9531	217.379	.433	.941	
A21	101.8438	207.340	.764	.937	
A22	101.9375	205.933	.742	.938	
A23	102.0781	208.359	.714	.938	
A24	101.8594	209.678	.650	.939	
A31	101.9375	212.472	.682	.939	
A32	102.2969	209.609	.693	.938	
A33	102.2344	209.801	.642	.939	
A34	102.0781	211.565	.697	.938	
A41	102.1719	204.303	.667	.939	
A42	102.0000	207.619	.762	.937	
A43	102.1406	211.202	.606	.939	
A44	102.4375	212.250	.535	.940	
A51	102.0000	217.651	.502	.940	
A52	102.0000	219.810	.424	.941	
A53	101.9844	214.047	.650	.939	
A61	102.3906	219.067	.415	.941	
A62	102.0469	219.220	.408	.941	
A63	102.4063	219.166	.412	.941	
A64	102.2969	211.926	.643	.939	
A71	102.2969	206.688	.652	.939	
A72	102.3750	209.063	.584	.940	
A73	102.1563	215.309	.476	.941	
A81	102.2344	218.817	.338	.942	
A82	102.2031	213.307	.600	.939	
A83	102.1875	217.774	.429	.941	

Table 6. Confidence test of psychological capital scale (N = 64)

Item	Item deleted Degree mean	Item deleted Degree of variance value	Total corrected items correlation	The Cronbach's α value deleted	The Cronbach's α value
B11	74.0000	61.524	.419	.886	.942
B12	74.0313	61.777	.419	.886	
B13	74.0625	61.583	.473	.884	
B14	74.0781	61.533	.472	.884	
B15	74.1563	60.642	.495	.884	
B21	73.9219	58.613	.534	.882	
B22	73.8438	59.531	.581	.881	
B23	73.9844	57.539	.708	.877	
B24	73.8125	60.282	.456	.885	
B25	74.1875	58.885	.513	.883	
B31	74.1094	56.829	.650	.878	
B32	74.1563	56.864	.609	.880	
B33	74.5313	54.729	.623	.880	
B34	74.0938	57.293	.601	.880	
XB35	74.0156	59.444	.600	.880	
B41	73.5938	62.626	.416	.886	
B42	73.6250	61.540	.507	.884	
B43	73.5625	62.472	.453	.885	
XB44	73.5469	63.903	.260	.889	
B45	73.7188	64.269	.216	.890	

After the project is deleted, the overall Cronbach's α value of the scale is increased, then the measurement item should be deleted;

The overall project correlation coefficient CITC value less than 0.4 measurement items should be deleted.

It can be seen from the table that the CITC value of any item in the HPWS scale is greater than 0.4 except that the CITC value of A81 item is 0.338 and less than 0.4. The remaining Cronbach's α did not exceed 0.942 on any remaining items after deleting any item. Therefore, A81 in this scale does not meet the reliability requirements and should be deleted.

By the same token, the Cronbach's α coefficient of the total scale is 0.888, which is greater than 0.8. The overall consistency of the scale is very high. Except for

item XB44 (named after the reverse of item B44), the CITC value for item B45 is less than 0.4 and all other items are satisfactory. Cronbach's α coefficient after each deletion Except for XB44, the Cronbach's α coefficient after B45 deletion exceeded 0.888, and none of the remaining entries exceeded 0.888 (**Table 6**). Therefore, delete the XB44 and B45 items.

Table 7 is a test of reliability of the innovative performance scale. The overall Cronbach's α coefficient of the scale is 0.888, which is greater than 0.8, indicating that the overall consistency of the scale is high. In the Cronbach's α coefficient after item deletion, the C13 item exceeds 0.888, but the CITC value is larger than 0.4. Therefore, the CITC values of other items are all larger than 0.4. Therefore, the scale of the reliability of a higher degree, in line with reliability testing requirements, without deleting any item.

Table 7. Reliability Test of Innovation Performance Scale (N = 64)

Item	Item deleted Degree mean	Item deleted Degree of variance value	Total corrected items correlation	The Cronbach's α value deleted	The Cronbach's α value
C11	25.8750	13.921	.623	.877	0.888
C12	25.7500	13.905	.733	.868	
C13	25.5625	15.679	.448	.891	
C21	26.0781	13.597	.580	.883	
C22	26.0469	13.188	.685	.872	
C23	25.9063	13.134	.754	.864	
C31	25.9219	13.502	.726	.868	
C32	26.1250	12.841	.754	.864	

Table 8. Study hypothesis validation results

Assumptions	Research Results
H1: HPWS has a significant positive impact on the innovation performance of knowledge workers	Supported
H2: HPWS has a significant positive impact on the psychological capital of knowledge workers	Supported
H2-1: HPWS has a significant positive impact on the aggressive dimensions of knowledge workers' psychological capital	Supported
H2-2: HPWS has a significant positive impact on the tenacious and tenacious dimensions of knowledge workers' psychological capital	Unsupported
H2-3: HPWS has a significant positive impact on the optimistic hope dimension of knowledge workers' psychological capital	Supported
H2-4: HPWS has a significant positive impact on the self-confident and brave dimensions of knowledge workers' psychological capital	Unsupported
H3: Psychological capital has a significant positive impact on individual innovation performance	Supported
H3-1 The aggressive dimensions of psychological capital have a significant positive impact on individual innovation performance	Supported
H3-2 The tough and tenacious dimensions of psychological capital have a significant positive impact on individual innovation performance	Supported
H3-3 The optimistic hope dimension of psychological capital has a significant positive impact on individual innovation performance	Supported
H3-4 Self-confident and brave dimensions of psychological capital have a significant positive impact on individual innovation performance	Supported
H4: Psychological capital plays an intermediary role in the impact of HPWS on employee innovation performance	Supported
H4-1: The aggressive dimensions of mental capital play an intermediary role in the impact of HPWS on employee innovation performance	Supported
H4-2: The tough, tenacious dimension of mental capital plays an intermediary role in the impact of HPWS on the innovation performance of knowledge workers	Unsupported
H4-3: The optimistic hope dimension of psychological capital plays an intermediary role in the impact of HPWS on the innovation performance of knowledge workers	Supported
H4-4: The Confidence and Bravery Dimensions of Psychological Capital Have an Intermediary Role in the Impact of HPWS on Innovative Performance of Knowledge Workers	Unsupported

RESEARCH RESULTS DISCUSSION

This section mainly analyzes and discusses the preceding empirical analysis results in environmental company, based on which some management suggestions for the enterprise managers are provided.

Hypothesis Test Result

Based on the hypothesis test result analysis, it is found that most of aforementioned 16 hypotheses in this study are supported except for H2-2, H2-4, H4-2 and H4-4, which is shown in **Table 8**.

The Relationship between High Performance Work System and Knowledge Worker Innovation Performance in Environmental Company

High performance work systems are a series of highly consistent policies ensuring that human resource management can serve the organization strategic goals. High performance work system is an organic whole constituted by all human resource management practice activities, which plays an important role in improving organizational performance and maintaining core competitiveness. In this study, the high performance work system is divided into eight modules: strict selection, extensive training, team work, communication and sharing, result evaluation, contingent pay, employee benefits and employment security, all of which cover the six major functions of human resource management. To summarize, the high performance work system and innovation performance are considered to be dependent variable respectively, of

which the relationship is explored through the correlation analysis and regression analysis.

From the previous correlation analysis, it can be seen that the correlation coefficient between innovation performance of high-performance work system and knowledge-based employee is 0.397, and there is a positive correlation relationship between the two variables. In the demographics, the regression coefficient is significant at the level of 0.001. That is to say, adoption of high performance work system can significantly promote the innovation performance of knowledge workers, which is in line with the results of previous studies. For instance, Kumar and Crook found that firm HR practices have a significant impact on innovation performance (Kumar and Crook 1999); Möller and Svahn found that human resource practices can affect innovation performance and these human resource practices have a greater impact on innovation performance when they form a complementary and coordinated human resource practice-package (Möller and Svahn 2003).

Predecessors have done a lot of empirical study on the impact of high performance work system on individual innovation performance, and most scholars have drawn a significant positive relationship between these two indexes. Based on the aforementioned research, this study reveals that high performance work system has a positive and significant impact on the individual's innovation performance, which is the source of organizational performance. In addition, this study also tries to reveal the factors that affect individual

innovation performance and organizational performance from another perspective, to provide some inspiration for the organization's management practitioners.

From this study, it can be seen that the enterprise high performance work system in environmental company can make direct and significant influence on the human resource management system's contribution to the organization. Each of human resources management practices can be implemented is of crucial importance to improve organizational performance and individual performance, and each human resource management practice is not an independent individual, but linked together with other human resources management practices to achieve an organic system. In addition, it can be seen that the individual employee's performance is closely related to the internal environment of the enterprise. As the core of the internal environment of the enterprise, human resource management system can greatly affect the performance of the individual, especially the knowledge-based employees. The higher the requirement of the environment is, the better the organization implement high-performance work system is, where employees can also deeply feel the sense of support brought by the environment, which can be helpful for their own growth and make them naturally more willing to create more business efficiency.

Therefore, enterprises should actively establish a matching high-performance work system, especially for those employees who pay great attention to create innovation, which can promote the in-depth understanding of the importance of knowledge workers to organizational innovation. According to the knowledge-based employee characteristics, carrying out the construction of the corresponding high-performance work system in all aspects, and creating a good atmosphere for innovation can provide a stable support for the knowledge workers' innovative performance improvement.

The Relationship between High Performance Work System and Knowledge Workers' Psychological Capital in Environmental Company

In the past researches, the influence of high performance work system on staff's psychological level was seldom explored. This study tries to find an antecedent variable-high performance work system from the perspective of staff psychology capital.

The high-performance work system not separating the individual HRM practices is set up in this study, to explore its impact on outcome and mediation variables. The correlation coefficient of high performance work system and knowledge worker psychological capital is 0.328, which is significant at 0.01 level. In the regression analysis of both, the regression model is tested and the regression coefficient is significant at 0.001 level, which shows that the high performance work system as a whole can have a significant positive impact on knowledge workers' psychological capital, which is very helpful for the promotion of employees' positive psychological state, which is consistent with the findings of Cao Q et al. (2013).

In other words, the organization's adoption of a high-performance work system can significantly improve the psychological capital of knowledge workers, because that there are many human resources management practice factors can make influence on high-performance work systems such as rigorous selection, extensive training, communication and sharing result evaluation, where the positive psychological status of employees plays a catalytic role. The characteristics of knowledge-based employees are innovation, high achievement motivation, more emphasis on communication, and strong autonomy.

The high-performance work system can meet a series of needs of knowledge-based employees such as favorable working conditions, and motivate them to use their own knowledge and skills to create more value for the organization, so that knowledge workers can easily achieve a very positive mental state.

In addition to the positive impact of the high-performance work system on the psychology of optimistic hope of knowledge workers, it also has a positive impact on the aggressive dimensions. The correlation coefficient between the high-performance work system and the aggressive dimension is 0.442, which is significant at 0.01 level. The regression coefficient between the both is significant at 0.001 level, which shows that adopting high performance work system can have a positive and significant impact on the mentally motivated employees. In an organization with a high-performance workforce, employees usually enjoy challenges, long for success, and try their best perform well to achieve personal ambitions.

The other two dimensions of high-performance work system for psychological capital are not supported in this study, of which the correlation coefficient is only 0.121 and 0.106 respectively, and both do not reach a

significant state. However, on the whole, the high-performance work system is instrumental in promoting the psychological capital.

The Relationship between Knowledge Worker's Psychological Capital and Innovation Performance in Environmental Company

The predecessors have conducted more discussions on the impact of psychological capital on innovation performance, from which it is known that the psychological capital is a very good predictor of the individual's work attitude, turnover intention and performance. In this study, the relationship between high performance work system and individual innovation performance would be tested. Based on the correlation analysis, it is concluded that the correlation coefficient is 0.414 (significant at 0.01 level), and the regression coefficient is significant at 0.001 level, which shows that the psychological capital of knowledge workers can have a positive and significant impact on their individual innovation performance.

However, the research results focused on the individual innovation performance are relatively rare. Davila and Foster (2007) has done a research on the mechanism of intellectual psychological capital and individual innovation performance, and pointed out that the psychological capital can make a certain influence on the individual innovation performance through intrinsic motivation. Based on the aforementioned research result, this study tries to draw a certain causal relationship between the psychological capital and the individual innovation performance, but there are still some intermediate variables between the psychological capital and individual innovation performance not fully revealed, which needs to be explored in the further study.

Endeavor is defined as: a high personal ambition, the pursuit of high goals, like challenges, eager to be successful, and manifested in improving the way of doing things and ability to enhance. Innovation is a work that many ordinary people cannot achieve (Valkokari and Helander 2007). Most people do their work step by step, seldom jump out of the framework to break existing rules and create new rules. This more challenging task is particularly appealing to knowledge workers, driven by the characteristics of knowledge workers who love to challenge, desire different achievements and realize their own value enterprising mental state can help knowledge workers to carry out innovative activities better.

Tough tenacity means that in the face of difficulties or crisis, the one can endure and adapt to unfavorable conditions, keep perseverance and perseverance to find ways to change the unfavorable situation to achieve the desired goal. Innovation process is filled with a lot of difficulties, and if an innovator does not have the ability to address these difficult questions and the determination to conquer these difficulties, it is destined that he will not succeed in carrying out innovative activities. For example, it is with such perseverance and perseverance that Edison can become a great inventor by trying to solve the thorny problems it faces; it is with such a spirit that Nobel can be famous for years. A tough and stubborn state of mind for the innovation activities and performance is of great help for knowledgeable employees (Hacklin et al. 2009).

The confidence in innovation is defined as that employees think they have a strong job competencies and courage to take occasions to express their work ability.

Innovation is often accompanied by a huge risk. Innovative success cannot be achieved with only a certain amount of knowledge and skills, and therefore an innovation worker must have the psychological ability to accept the possibility of innovation failure. For example, Edison finally found the tungsten wire after more than 1,000 bulb experiments, which is inseparable from its own strong optimism. In a word, optimistic hopes mental status can greatly promote the innovation performance of knowledge workers.

The one has enough individual innovation means that he is willing to be pioneers, and if knowledge workers just have the appropriate knowledge and skills without a positive self-confidence and courage to express their ideas action, the innovation may only stay at the level of ideas and even be strangling (Lawrence et al. 2002). The self-confident and brave state of mind can effectively promote knowledge-based workers to have strong self-confidence in their ability to innovate, and have the courage to put their own innovative ideas into action, which is greatly helpful for enhancing their individual innovation performance.

CONCLUSION

This study explores the factors that influence the innovation performance of knowledge workers in environmental company in China. As an important part of organizational performance, the innovation performance has been the eternal theme of an enterprise, and the study about improving the staff's

innovation performance is of great strong theoretical and practical significance.

Different from the previous research, this study is focused on the promotion of individual performance innovation, where the high performance work system is selected as a predictor, to explore the impact of high performance work system on individual innovation performance. The knowledge-based employees is considered to be the research object, and the psychological capital is chosen as the starting point to explore impact mechanism of the high performance work system on the individual innovation performance, based on the theoretical review and the hypothesis model. Based on the aforementioned consideration, the interview and questionnaire forms as well as the statistical analysis method is used to verify the hypothesis of this study. With a series of theoretical and empirical analysis, the following conclusions are derived from this study:

The organization's high-performance work system can significantly affect the innovation performance of knowledge workers, in other words, knowledge-based employees are more likely to achieve higher innovation performance with a good high-performance work system. Besides, knowledge workers usually have higher psychological capital in the enterprises with high performance work systems, and the positive psychology

would bring a better mental status of aggressive and optimistic. Compared to other workers, knowledge-based workers with high psychological capital are more likely to achieve high individual innovation performance.

The impact of high performance work system on the innovation performance of knowledge workers is influenced by employees' own psychological capital. The influence mechanism is that the high performance work system can make knowledge workers have better performance in the positive state of mind, which can affect the employee's innovation performance further. Based on the analysis of knowledge workers' psychological dimension, it concludes that four dimensions can make a significant positive impact on the workers' individual innovation performance, and it is demonstrated that any aspect of the knowledge workers' positive mental state would be crucial for improving individual innovation performance in environmental company.

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